



DEK HORIZON 8 Platform

Technical Specification

DEK 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	508mm (X) x 508mm (Y)
Printer Construction	One piece optimised welded frame
ISCAN™ Machine Control	Motion control using CAN BUS network
Operating System	Windows embedded 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 trailing 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.

DEK Horizon 8

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	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 8

Machine Standard Configuration

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

DEK Horizon 8

Machine Productivity Options

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

Vision	Specification
HawkEye®750 Functionality	Enabled

Software & Communications	Specification
Statistical Process Control	On board, reported via operator interface (QC-CALC)

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

DEK Horizon 8 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^o to 35^o C (50^o to 90^o 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

1637
1350
535
Front of board

6530 Max. from pivot point

1944
(1824 min. to 1964 max.)
1470
(1350 min. to 1490 max.)
122
1106
1358
(1191 min. to 1421 max.)

1150
277.5
Transfer Height 840 min. to 980 max.

1150
277.5
Transfer Height 840 min. to 980 max.

DEK *Horizon 8*

ASM Assembly Systems Switzerland GmbH Disclaimer

In line with ASM Assembly Systems Switzerland GmbH Policy of continual improvement, this specification is periodically up-issued to reflect the latest DEK platform enhancements and it is provided with an issue state, which is displayed at the bottom of each hard copy page.

Please note the following:

- This information is provided in good faith; it is believed to be accurate and sufficient for the intended purpose
- This information remains the property of ASM Assembly Systems Switzerland GmbH
- ASM Assembly Systems Switzerland GmbH are not liable for the consequences of applying this information
- ASM Assembly Systems Switzerland GmbH are free to alter this information without notice

The legal form of this notice can be read at <http://www.dek.com/disclaimer>

EUROPE

**ASM Assembly Systems
Switzerland GmbH**
Hardturmstrasse 105
P.O. Box 190
CH-8037 Zürich
Switzerland

**ASM Assembly Systems
Germany GmbH**
Theodor-Heuss-Str. 57
D-61118 Bad Vilbel
Germany

**ASM Assembly Systems
Hungary LLC**
9027 Gyor, Platánfa u. 2
Hungary

**ASM Assembly Systems
Netherlands BV**
Moorland 3F
Oirschot
5688 GA
The Netherlands

**ASM Assembly Systems
Weymouth Ltd**
11 Albany Road
Granby Industrial Estate
Weymouth
DT4 9TH
United Kingdom

AMERICAS

**ASM Assembly Systems USA
Inc**
1785 Winnetka Circle
Rolling Meadows, IL 60008
USA

ASIA

**ASM Assembly Systems
Manufacturing (Shenzhen) Co.
Ltd.**
The West, 1F First Building
Ting Wei Industrial Park
6 Liufang Road
Bao Cheng 67th Area
Bao'An District
Shenzhen
Guangdong 518101
People's Republic of China

www.dek.com