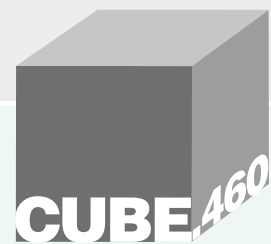




CUBE.460

The system for automation in the manual soldering area



CUBE.460

The new entry-level selective soldering system

CUBE.460 modern system technology within the smallest space



In the design, particular attention has been made to ease setup and maintenance, through good accessibility. The manual loading is customizable and furthermore it can be automated.

Easy programming

The easy graphical user interface based programming allows a quick entry of the flux and soldering points into the system controls. The CUBE.460 also offers professional features and proven technical components of the larger machine series like process monitoring and bus compatible DC servo motors.



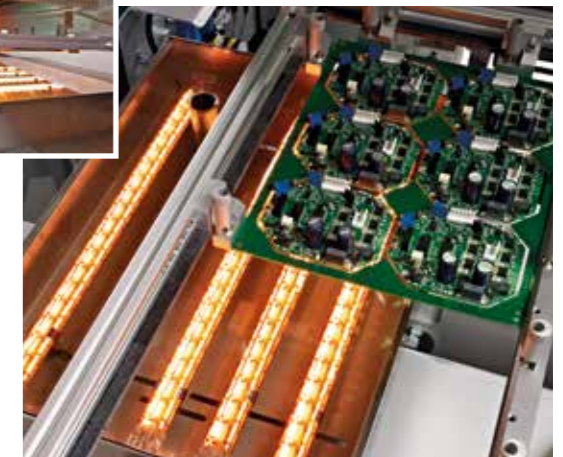
Precise flux control

The standard microdrop fluxer achieves a precise application pattern for fluxing with very few residues. A light barrier sensor ensures the correct spray pattern is achieved. Various soldering fluxes and application systems can also be used.



Quartz preheater

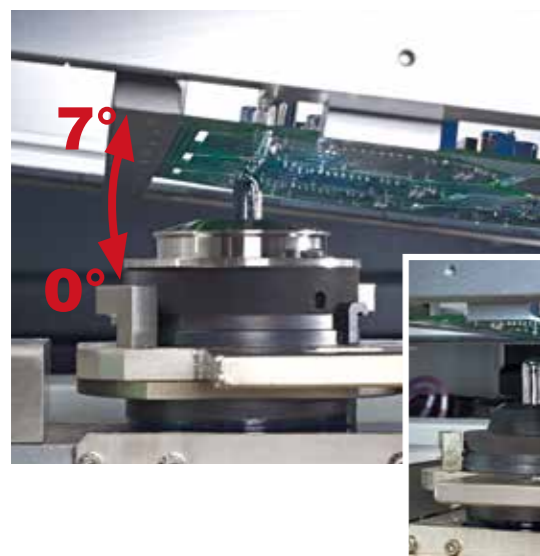
High-performance quartz pre-heating guarantees efficient pre-heating and low energy consumption. Via an optional pyrometer the PCB temperature can be controlled and the values can be captured in BDE-Data.



CUBE.460

High productivity and flexibility

Variable solder angle



The capability of setting the soldering angle to 0° and 7° with program control makes it possible to use various soldering nozzles under optimum conditions for each nozzle. This means difficult layouts can often be achieved, with ultra-narrow clearances.

Exchangeable solder nozzles



The new design makes a quick exchange of the nozzles possible. The nozzle can be dismantled very easily without any tooling.

If products are soldered with different nozzle sizes, the use of the solder nozzle can be modified easily and simply to the process.

Our CUBE.460 can be upgraded with a Multiport Tool for short cycle times with very high solder quality.



Process control

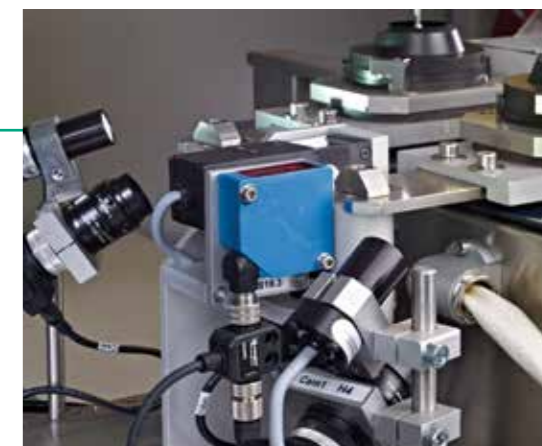
The wave height is measured and adjusted via a titanium needle based sensor. This feature offers optimal process stability.



Camera monitoring

The fiducial correction as well as the warpage sensors correct the deflection and the position of the PCB automatically – which leads to perfect solder result.

The operation can be perfectly ensured by using the process cameras.



Quick change-over of different alloys

The throughput and flexibility can be increased by the use of a second soldering module with program-controlled actuation. Also, the exchange of solder modules can be carried out very easily with a trolley. Optionally the distance between the both soldering modules are automatically adjustable. A standard solder pump or alternatively an electrodynamic version are available. A 200mm wave module changes the CUBE.460 into a system for all applications.



CUBE.460 Software

INERTEC have worked specifically for easy operation of the programming and system software.

The control system for the CUBE is based on the systems from the ELS 3.3 and EMLS product lines which have proven themselves over many years. Programming can be carried out with offline software.

The Offline Software is equipped with an efficient warpage correction module. Additionally the PCB can be measured live before the soldering via a high-precision laser. The measured values a PCB-panel will be graphically illustrated in real time.

During the programming, the circuit board warpage is visualized at every point and transferred into the program.

The optional sensor detects SMEMA standard fiducials and corrects the positional errors of the PCB during the soldering process.

The RT-Console control program now comes with additional modules – depending on the version. The statistical module records the circuit boards that are produced. The production figures can be called up subsequently (according to DMX code or program name).

A line plotter function makes it possible to log the analog measurement values (such as solder temperature, nitrogen temperature).

Barcode integration, automatically times functions, integrated maintenance reminders as well as online access are standard functions and included in the software.

Teaching of the components is very easy via a graphical user interface offline program. For this an image file (.jpg or .bmp) or Gerber data can be used.

Also – easy program tasks – can be taught via the optional onboard camera.



Machine Specification		
Dimensions	L 1430 mm; W 1550 mm; H 1250 mm (57" x 61" x 50")	<input checked="" type="checkbox"/>
Weight / Colour	Ca 800 kg; RAL7035; RAL7021	<input checked="" type="checkbox"/>
Exhaust opening	Ø150 mm (6")	<input checked="" type="checkbox"/>
Extraction rate	400m³/h	<input checked="" type="checkbox"/>
Power requirements	3x32 A; 3x400V; 50 Hz; depends on the configuration 6-14,4 KW	<input checked="" type="checkbox"/>
System control		
Control concept	PC; Beckhoff PLC, incl. PC and accessories	<input checked="" type="checkbox"/>
Interface	Ethernet, USB	<input checked="" type="checkbox"/>
USV	Optional	<input type="checkbox"/>
Offline software	Offline software for easy programming	<input checked="" type="checkbox"/>
Camera / Online Software	Camera with cross hair for online programming	<input type="checkbox"/>
Axis type	XY-Portal; Z-axis lift; DC Servo motors with encoders; CAN-BUS	<input checked="" type="checkbox"/>
Axis movement	Combination of toothed belts and ball screw	<input checked="" type="checkbox"/>
Repeatability	±0,15 mm (±0,006")	<input checked="" type="checkbox"/>
Board size		
Dimensions min / max	20x20 mm / 460x460 mm (0,8"x0,8" / 18"x18")	<input checked="" type="checkbox"/>
Soldering angle	0°	<input checked="" type="checkbox"/>
Soldering angle	0° and 7°	<input type="checkbox"/>
Bottom side clearance / Top side clearance	30 mm (1,2") / 150 mm (6")	<input checked="" type="checkbox"/>
Carrier	Special fixtures available, downholder, etc.	<input type="checkbox"/>
Flux System		
Fluxer type	Micro Drop	<input checked="" type="checkbox"/>
Flux	Alcohol based with 5% solids recommended	<input type="checkbox"/>
Flux container	3 litre pressurised pot with level indicator	<input checked="" type="checkbox"/>
	Second flux pot for different flux type available	<input type="checkbox"/>
Spray fluxer	by the use of a wave module	<input type="checkbox"/>
Preheat		
Type	Quartz Rods	<input type="checkbox"/>
Power	approx. 5 KW	<input type="checkbox"/>
Top side preheat	Built into the gripper	<input type="checkbox"/>
Solder Pot		
Solder pot with the possibility to use a second mini wave module	Solder volume lead-free (45 Kg) / Tin Lead (50 Kg)	<input checked="" type="checkbox"/>
Operation of two small solder pots gives the possibility to use different alloys	Solder volume lead-free (21 Kg) / Tin Lead (24 Kg)	<input type="checkbox"/>
Solder pot with a wave module = 200mm	Solder volume lead-free (58 Kg) / Tin Lead (66 Kg)	<input type="checkbox"/>
Additional mini wave module	For parallel soldering or in combination with a lift module different nozzles can be used in one Program	<input type="checkbox"/>
Additional nozzle heating	Optimal preheating of the soldering joint with hot gas	<input type="checkbox"/>
Additional solder nozzles	Different sizes are available Ø4 mm - Ø20 mm (0,02" - 0,08")	<input type="checkbox"/>
Wetted (multi directional) nozzle	Different sizes are available Ø4 mm - Ø20 mm (0,02" - 0,08")	<input checked="" type="checkbox"/>
Warm up time	Circa 45 minutes	<input checked="" type="checkbox"/>
Solder temperature / temperature control	Maximum 330°C / via PID sensor	<input checked="" type="checkbox"/>
Solder wave height control	Program controlled	<input checked="" type="checkbox"/>
Solder wire feeder	Motor driven 1,5 – 2 mm (other sizes on request), solder wire max 5 kg	<input type="checkbox"/>
Nitrogen inerted	N2, 5.0 is recommended, max pressure 5,5 bar	<input checked="" type="checkbox"/>
Nitrogen consumption	Depending on User soldering nozzle 1-3 m3/ hr	<input checked="" type="checkbox"/>
Process Camera	Camera "real time" to view the soldering process	<input type="checkbox"/>
Trolley and exchangeable soldering aggregate	For the use of different alloys	<input type="checkbox"/>
Electro-dynamic solder pump	Alternative to a standard rotarydrive pump	<input type="checkbox"/>



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