



## **CUBE Inline<sup>+</sup>**

The modular Soldering System  
for highest efficiency

## CUBE Inline<sup>+</sup> for highest flexibility and efficiency

### CUBE Inline<sup>+</sup> The modular soldering system



The intelligent modular system, flexible for every kind of customer requirements. The best possible construction of all components of the system ensures a maintenance-friendly accessibility.

### Clearly structured control

The simple, graphical programming allows a quick entry into the selective soldering. At the same time, the facility provides professional functions, such as process monitoring, DC-servomotors with bus connection.



### Precise flux control

The drop jet fluxer is the perfect solution for flux application. Depending on the cycle time requirement, the system can be equipped with multiple spray heads. Optical monitoring of flux deposition via a light beam is standard on all INERTEC selective soldering systems, as an option we can also offer a flux flow monitoring system that will accurately measure the volume of flux being applied to each board.





## CUBE InLine<sup>+</sup> for highest flexibility and efficiency

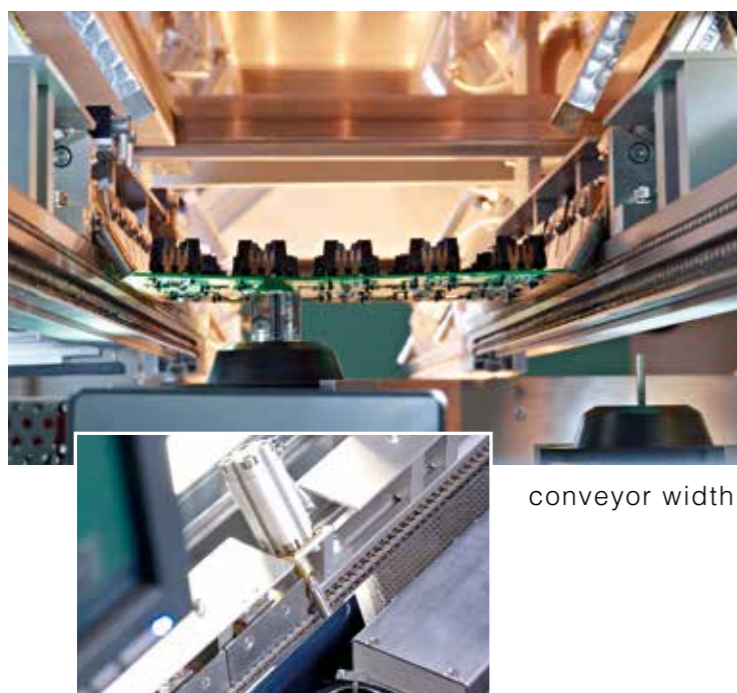


### High efficiency preheating

Depending on the system specification, the number of preheating modules as well as the preheating type can be selected as desired.

The quartz preheating - which is the standard - provides efficient preheating with low energy consumption.

The PCB temperature can be controlled via an optional pyrometer and the values transferred in BDE data.



### Robust conveyor

The segmented conveyor in the system is equipped with a pin chain.

The workpiece carrier or the PCB is placed precisely at the individual process positions through a stopper system. The system can be ordered with an automatic conveyor width adjustment as an option.

### Process control & monitoring

Perfect process control is ensured by options such as a process camera, electronic monitoring of the soldering wave height, position correction by fiducial detection and bending of the PCB by a warpage control sensor.



### Quick solder exchange

A quick change-over of the solder pot to enable the use of different solders is possible through a special trolley.





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## Mini wave soldering module

The option nitrogen preheating of the perfectly designed solder nozzles enables the continuous heating of the joint during the soldering process and heats the immediate soldering area evenly.

The integration of two soldering units in the system offers the possibility to work with two different alloys or with different nozzle sizes.



## Changeable solder nozzles

The advanced design of the nozzles allows a quick exchange. If products with a different nozzle size have to be soldered, the insert of the nozzle is simply changed to the appropriate nozzle diameter.



## ActiveFlow soldering module

ActiveFlow allows a high energy transfer between the smallest component clearances for PCB up to dimensions of 400 x 400 mm. Through the construction of the system, short cycle times of 30 seconds aren't a challenge for INERTEC.



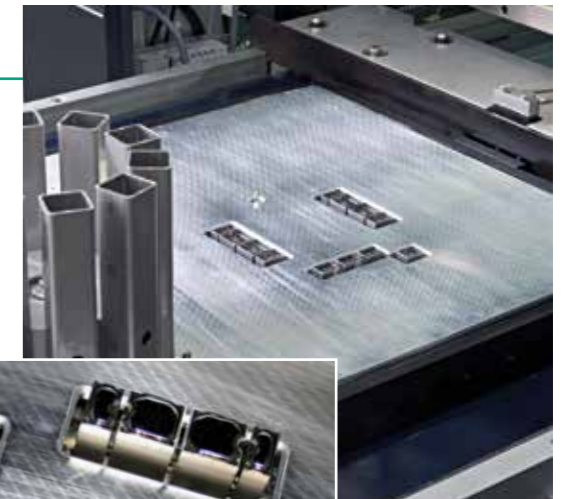
## Simple tool change

The active flow module is maintenance friendly and can be driven out of the system by means of a motor either for maintenance or tool change over. The tool mount developed especially by INERTEC guarantees a quick and accurate - correct tool exchange.

The soldering height is actively controlled and ensures together with the nitrogen supply a perfect soldering result.

All components are coated. The stamps are made of titanium and therefore will not wear out or degrade like stainless steel stamps.

The circulation of the solder within the ActiveFlow creates a perfect soldering result caused by a targeted energy input, surrounding SMD components are not overheated.





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### CUBE Inline<sup>+</sup> The modular soldering system



The INERTEC CUBE Inline<sup>+</sup> modular system offers a modular system with all the required process stages according to customer specification.



### From the basic design to the production line

The clever design of the modules makes retrofitting modules at a later date possible and of course back again. As required.

# CUBE Inline<sup>+</sup> Equipped for all tasks

## Versatile system expansions are possible

Whether the CUBE Inline<sup>+</sup> is used as a base system or with one of the many options, with the CUBE Inline<sup>+</sup> you are prepared for all challenges.

		BASIC										
		Fluxer	+	Preheat	+	MiniWave						
	Fluxer	+	Fluxer	+	Preheat	+	MiniWave					
		Fluxer	+	Preheat	+	MiniWave	+	MiniWave				
	Fluxer	+	Fluxer	+	Preheat	+	MiniWave	+	MiniWave			
		Fluxer	+	Preheat	+	ActiveFlow						
		Fluxer	+	Preheat	+	ActiveFlow	+	MiniWave				
		Fluxer	+	Preheat	+	Preheat	+	Preheat	+	ActiveFlow		
		Fluxer	+	Preheat	+	Preheat	+	Preheat	+	ActiveFlow	+	MiniWave

## Intuitive control software

The control for the CUBE Inline<sup>+</sup> is based on a BECKHOFF PLC. It is modular, so retrofits are possible and easily implemented at the customer's site.

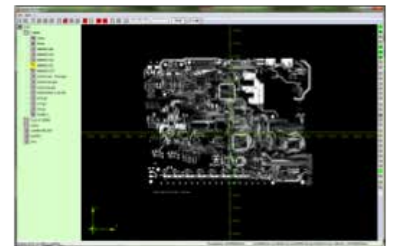
For programming, INERTEC uses a graphical interface via the convenient offline software or online programming via the built-in camera. Software modules, such as PCB-warpage-correction or the optional Fiducial module, detect and correct the circuit board position during the soldering process.

Industry 4.0 - The control offers all possibilities of data acquisition via XML tickets, via TCP/IP, as an ASCII file of an SQL database or an ITAC connection.

During the process, statistics modules capture all relevant PCB data by the DMX code or program name.

A line recorder function allows the analog measured values (such as solder temperature or nitrogen temperature) to be recorded.

Barcode integration, automatic time functions, integrated service messages, as well as online access are standard functions and already included in the software.





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## Technical Configurations

<b>Pallet</b>	Pin Chain Conveyor, 5 mm	<input checked="" type="checkbox"/>
	Pin Chain Conveyor, 3 mm	<input type="checkbox"/>
<b>PCB</b>	Pin Chain Conveyor, 5 mm	<input type="checkbox"/>
	Pin Chain Conveyor, 3 mm	<input checked="" type="checkbox"/>
	Manual width adjustment - handwheel	<input checked="" type="checkbox"/>
	Automatic width adjustment	<input type="checkbox"/>
	Dual Conveyor - on request	<input type="checkbox"/>

<b>Inlet Conveyor</b>	Supplied by customer	<input checked="" type="checkbox"/>
	INERTEC can supply on customers specification	<input type="checkbox"/>
<b>Outlet Conveyor</b>	Supplied by customer	<input checked="" type="checkbox"/>
	INERTEC can supply on customers specification	<input type="checkbox"/>

<b>Return Conveyor</b>	ActiveFlow	<input type="checkbox"/>
	Mini wave - depending on the inlet height	<input type="checkbox"/>
<b>Interface</b>	SMEMA	<input checked="" type="checkbox"/>
	SV70	<input type="checkbox"/>
	Special Solutions	<input type="checkbox"/>

<b>Fluxer</b>	Micro Drop Jet Fluxer < 5 % solids	<input checked="" type="checkbox"/>
	Dual Spray Head - fix width	<input type="checkbox"/>
	Automatic width setting crosswise/ lengthwise	<input type="checkbox"/>
	SONOTEC Fluxer - use for higher solids	<input type="checkbox"/>
	Automatic Flux Nozzle Cleaning	<input type="checkbox"/>
	3 l pressurized container	<input checked="" type="checkbox"/>
	Second flux container - various flux usage - only in combination with a separate spray head	<input type="checkbox"/>
	Optical Spray Control via Lasersensor - only drop jet	<input checked="" type="checkbox"/>
	Flux Volume Control - Flow Sensor	<input type="checkbox"/>
	Indexation during fluxing via stopper	<input checked="" type="checkbox"/>
	Indexation during fluxing via cylinder	<input type="checkbox"/>
	Fiducial Correction (need to be defined)	<input type="checkbox"/>

<b>Preheat Area</b>	1 preheat zone	<input checked="" type="checkbox"/>
	2 preheat zones	<input type="checkbox"/>
	3 preheat zones	<input type="checkbox"/>
	Convection heater	<input type="checkbox"/>
	Air Flow Control	<input checked="" type="checkbox"/>
	IR heater	<input type="checkbox"/>
	Quick reacting quartz heater	<input checked="" type="checkbox"/>
	Power management	<input type="checkbox"/>
	Combination of heaters	<input type="checkbox"/>
	Pyrometer control for the quartz heater	<input type="checkbox"/>

<b>Top Side Heat</b>	1 preheat zone	<input type="checkbox"/>
	several preheat zones - max. 4 zones in the fully equipped system	<input type="checkbox"/>
	Convection heater	<input type="checkbox"/>
	Air Flow Control	<input checked="" type="checkbox"/>
	IR heater	<input type="checkbox"/>
	Quick reacting quartz heater	<input type="checkbox"/>
	Power management	<input type="checkbox"/>
	Combination of heaters	<input type="checkbox"/>



## Technical Configuration of Solder Areas

<b>Solder Area Mini Wave</b>	One soldering module	<input checked="" type="checkbox"/>
	Second Soldering Module	<input type="checkbox"/>
	Fixed width - 140 mm	<input checked="" type="checkbox"/>
	Automatic width adjustment to 340 mm	<input type="checkbox"/>
	Coated Solder Aggregate - Titanium Pumps	<input checked="" type="checkbox"/>
	Solder level control	<input checked="" type="checkbox"/>
	Automatic level - solder feeder	<input type="checkbox"/>
	Multiport Tool - up to 5 parallel nozzles (max. 200mm distance)	<input type="checkbox"/>
	Process Camera	
	Positioning - Clamping - 3 mm height	<input checked="" type="checkbox"/>
	Fiducial Correction	<input type="checkbox"/>
	Warping Correction	<input type="checkbox"/>
	Nitrogen Flow Control	<input type="checkbox"/>
	Hot Nitrogen Feature	<input type="checkbox"/>
	Automatic Wave Height Measurement	<input type="checkbox"/>
	Special Board Support	<input type="checkbox"/>
	Automatic Nozzle Cleaning	<input type="checkbox"/>
	Tool Coding - BCD coding	<input type="checkbox"/>
	Tool Coding - RFID coding	<input type="checkbox"/>
	Exchangeable soldering unit - different alloy	<input type="checkbox"/>
	Trolley	<input type="checkbox"/>

<b>Solder Area Mini Wave Expansion Module</b>	One soldering module	<input checked="" type="checkbox"/>
	Second Soldering Module	<input type="checkbox"/>
	Fixed width - 140 mm	<input checked="" type="checkbox"/>
	Automatic width adjustment to 340 mm	<input type="checkbox"/>
	Coated Solder Aggregate - Titanium Pumps	<input checked="" type="checkbox"/>
	Solder level control	<input checked="" type="checkbox"/>
	Automatic level - solder feeder	<input type="checkbox"/>
	Multiport Tool - up to 5 parallel nozzles (max. 200mm distance)	<input type="checkbox"/>
	Process Camera	<input type="checkbox"/>
	Positioning - Clamping - 3 mm height	<input checked="" type="checkbox"/>
	Fiducial Correction	<input type="checkbox"/>
	Warping Correction	<input type="checkbox"/>
	Nitrogen Flow Control	<input type="checkbox"/>
	Hot Nitrogen Feature	<input type="checkbox"/>
	Automatic Wave Height Measurement	<input type="checkbox"/>
	Special Board Support	<input type="checkbox"/>
	Automatic Nozzle Cleaning	<input type="checkbox"/>
	Tool Coding - BCD coding	<input type="checkbox"/>
	Tool Coding - RFID coding	<input type="checkbox"/>
	Exchangeable soldering unit - different alloy	<input type="checkbox"/>
	Trolley	<input type="checkbox"/>

<b>Solder Area ActiveFlow</b>	Coated Solder Aggregate - 400 x 400 mm	<input checked="" type="checkbox"/>
	Second Soldering Module	<input type="checkbox"/>
	Coated Solder Aggregate	<input checked="" type="checkbox"/>
	Solder level control	<input checked="" type="checkbox"/>
	Automatic level - solder feeder	<input type="checkbox"/>
	Positioning - Clamping	<input type="checkbox"/>
	Automatic Wave Height Measurement	<input type="checkbox"/>
	Tooling - based on customer STEP Data	<input type="checkbox"/>
	Down Holder Function	<input type="checkbox"/>
	Nitrogen Flow Control	<input type="checkbox"/>
	Special Board Support	<input type="checkbox"/>
	Tool Coding - BCD coding	<input type="checkbox"/>
	Tool Coding - RFID coding	<input type="checkbox"/>
	Nitrogen volume control	<input type="checkbox"/>
Top Side heat	<input checked="" type="checkbox"/>	

<b>Solder Area ActiveFlow Expansion Module</b>	Coated Solder Aggregate - 400 x 400 mm	<input checked="" type="checkbox"/>
	Second Soldering Module	<input type="checkbox"/>
	Coated Solder Aggregate	<input checked="" type="checkbox"/>
	Solder level control	<input checked="" type="checkbox"/>
	Automatic level - solder feeder	<input type="checkbox"/>
	Positioning - Clamping	<input type="checkbox"/>
	Automatic Wave Height Measurement	<input type="checkbox"/>
	Tooling - based on customer STEP Data	<input type="checkbox"/>
	Down Holder Function	<input type="checkbox"/>
	Nitrogen Flow Control	<input type="checkbox"/>
	Special Board Support	<input type="checkbox"/>
	Tool Coding - BCD coding	<input type="checkbox"/>
	Tool Coding - RFID coding	<input type="checkbox"/>
	Nitrogen volume control	<input type="checkbox"/>
Top Side heat	<input checked="" type="checkbox"/>	





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