

SEMI-AUTOMATED SOLDERING AND DESOLDERING MACHINE ONYX 21

MACHINES

4.105



APPLICATION: SMT

ZEVAC-LINE: ONYX

The complete ONYX product line documentation is composed of the following data sheets:

MACHINES 4.101 - 4.105

ACCESSORIES 2.201, 2.202

OPTIONS 4.301



NEW

- Placement with force
- 2000 W top heating
- 3500 W bottom heating



WIDE APPLICATION RANGE

SELECTIVE SOLDERING AND DESOLDERING OF SMD COMPONENTS. THE HIGH PERFORMANCE ONYX 21 GUARANTEES HIGH RELIABILITY AND EASE OF OPERATION. IT IS EQUIPPED WITH A SPECIAL VISION SYSTEM FOR ACCURATE ALIGNMENT OF ALL SMD'S AND FINE-PITCH COMPONENTS. AND IS IDEAL FOR:

Repairs

Misaligned devices can be accurately repositioned, and defective components replaced.

Prototyping

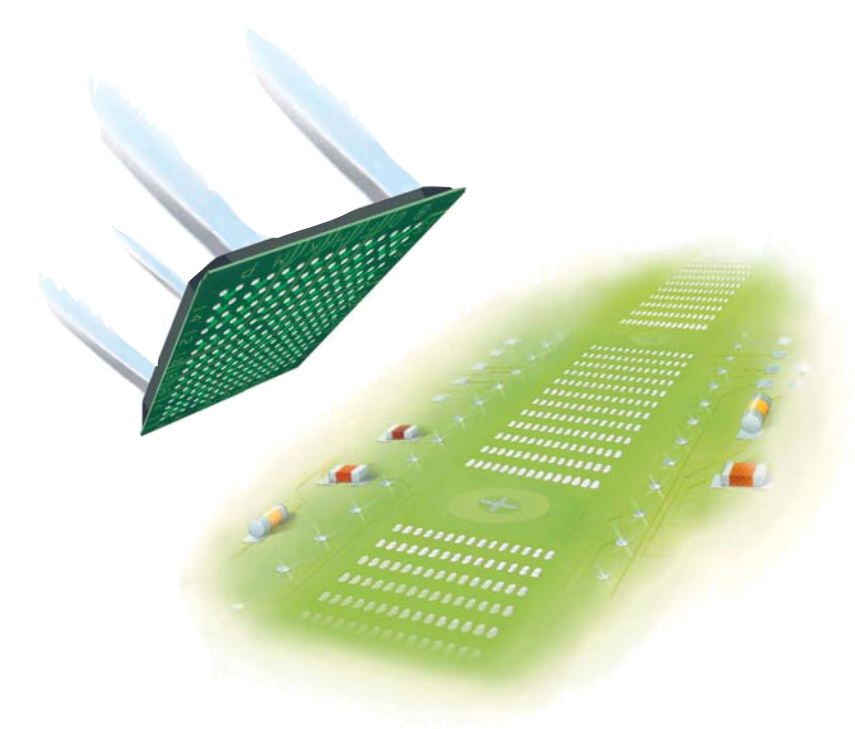
The ONYX 21 simultaneously assembles and solders prototypes. It allows expensive components to be desoldered and re-used.

Post-assembly

Components that are missing at assembly time can be placed and soldered later. Individual devices which cannot be handled by available production resources can be retrofitted.

Assembly

The ONYX 21 soldering and desoldering machine is the most accurate tool for assembly, from the simplest to the most densely populated boards.

**MARKET REQUIREMENTS**

THE COMPLEXITY OF MANUAL SMD SOLDERING OPERATIONS IS GROWING. COMPONENT POSITIONING REQUIREMENTS HAVE BECOME MORE CRITICAL WITH THE INTRODUCTION OF MORE COMPLEX AND EXPENSIVE DEVICES AS WELL AS MORE INTEGRATED CIRCUIT BOARDS. RAPIDLY INCREASING SOPHISTICATION IN SMT HAS GENERATED AN URGENT NEED FOR A TRULY PROFESSIONAL SOLUTION. THE NEW ONYX 21 MACHINE MEETS ALL THESE REQUIREMENTS IN A PRECISE MANNER:

High accuracy positioning with reproducible results

Rapid positioning of circuit boards with precise adjustments in x, y, and theta directions. Boards are locked in position by a mechanical locking system. SMD components are centered in gas nozzles specially designed and adapted to the component housing.

This design shields components and circuit boards against excess heat. Precise control of the heat amount (flow rate x temperature x time).

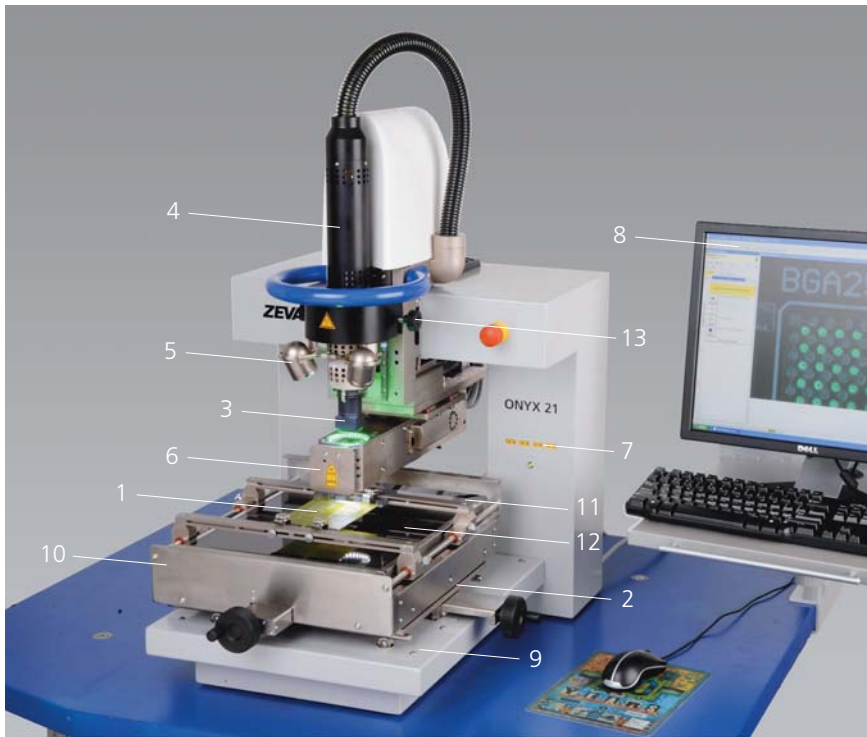
Easy operation, Availability

Ergonomic design.

Fast, uncomplicated nozzle exchange. Short heat-up period with powerful, efficient heating system.

More than 100 different standard nozzles in stock.

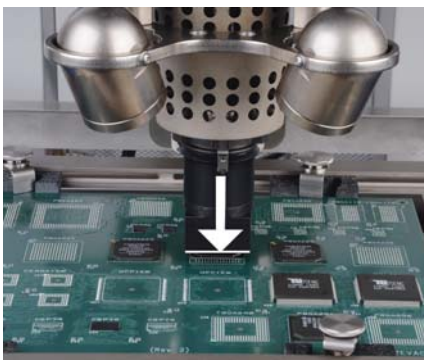
Custom nozzles for special applications are available on short notice (see Nozzle Data Sheets 2.201, 2.202).



ONYX 21

High accuracy with semi-automated process control:

- 1 printed circuit board
- 2 x-/y-table with fine adjustment
- 3 gas nozzle
- 4 2000 W top heating system
- 5 illumination
- 6 VISION
- 7 4 thermocouple inputs
- 8 flat screen
- 9 base plate with force measurement
- 10 board cooling (option)
- 11 board holder
- 12 preheater
- 13 theta adjustment for heater head



FORCE PLACEMENT

Accurate motorized force placement

The Z-axis is motorized and places the component automatically with force in the gramme range onto the board.

TOP HEATING WITH BYPASS

Process reliability

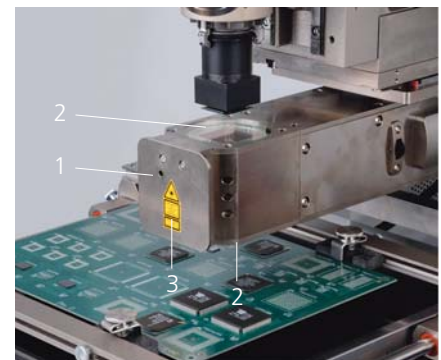
The combination of the powerful top heating (2000 W) with the bypass system for cooling creates the stability for the profile creation of reliable process parameters.



IR PREHEATER SYSTEM

For leadfree applications

Preheater: 300 x 300 mm
3500 W
Optional board cooling for faster cool down.



VISION

Guarantees a highly accurate positioning

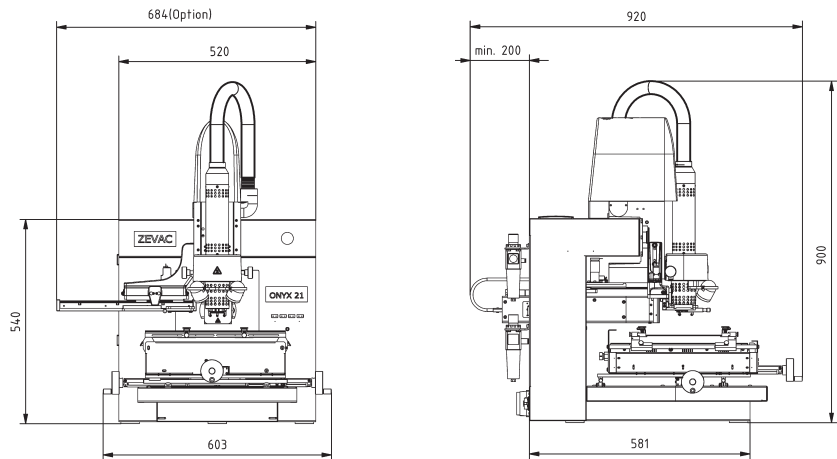
With the motorized VISION system, the component and the layout of the board are projected on top of each other, verifying the position. The LED illumination, one for the component and one for the board-layout, guarantees an optimum view independent of surrounding conditions.

- 1 Vision system
For components up to 70 mm (option).
- 2 LED illumination
- 3 Laser pointer

All process parameters like temperature, flow rate and force measurement are closed loop controlled.

Technical data	Product designation	ONYX 21
	Max. board size	300 mm depth, 400 mm width
	Max. board thickness	6 mm
	Max. component size	SFOV 25 x 18.5 mm (standard) MFOV 70 x 70 mm (option)
	Max. component height	20 mm bottom side 30 mm top side
	Gas pressure	6 bar (0.6 MPA) 100l/min
	Angle rotation of heater head	± 10°
	Hot gas	compressed air or nitrogen
	Power requirements	3 x 400 / 230 VAC, 50 / 60 Hz
	Max. power consumption	2300 W + 3500 W (preheater module)
	Dimension (L x W x H)	820 x 520 x 940 mm
	Weight	70 kg basic machine
	Technical data subject to change	

Dimensions



Accessories	Hot gas nozzles	Data sheet 2.201
	Gas nozzles for BGA and CSP components	Data sheet 2.202
Options	Options	Data sheet 4.301
	- IR sensor	
	- Board cooling	
	- MFOV Vision	
	- Component shuttle with force measurement	
	- Fume extraction manifold	
	- Foot switch	
	- Direct View Camera System	

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