

ZEVAC

ONYX 500

Automated repair of circuit boards



ONYX 500

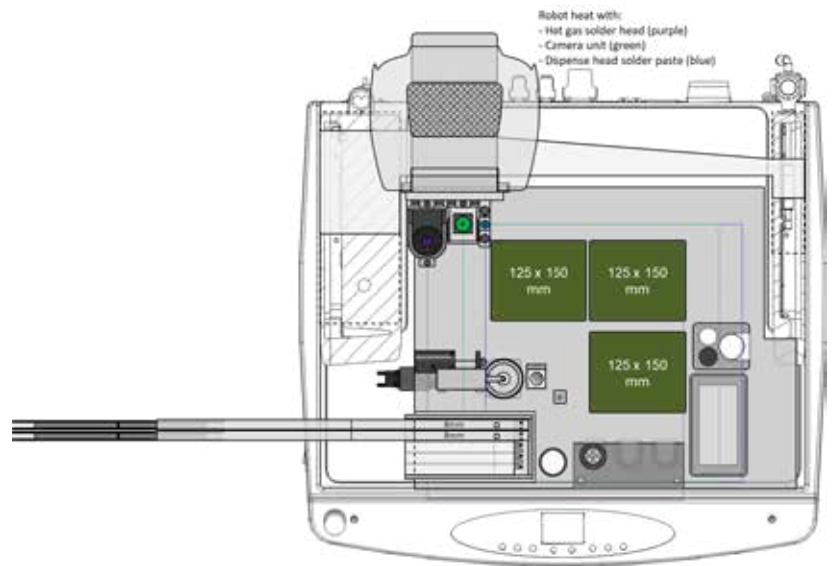
The ONYX 500, is the fully automatic version of the well-established and proven ONYX 29 platform. It is a versatile system built for dynamic and automatic rework processes. Its flexible conception and modularity enable an easy processing of the most demanding components.

MAIN FEATURES

- Multifunctional hot gas heater head
- All axes motorized with closed loop motion control
- Automatic and overall process control
- Multiple thermocouple ports to control process temperature
- Closed loop force control of the Z-axis for automatic picking, fluxing, placing and removing processes to protect sensitive parts
- Closed loop gas flow control from 8 to 80 l/min
- Automatic contactless site cleaning for removal of residual solder with a motorized X/Y/Z-System

Out of the ZEVAC rework component matrix the system is equipped with traditional, rework specific components, i.e. hotgas head capabilities and configurable options as:

- Force measurement table securing precise closed loop control of each operations
- Automatic nozzle changers for soldering/ de-soldering, component pick & place and pin print transfer nozzles
- Dip station for transferring solder paste, silver paste, or flux
- Automatic tape feeders
- Fixture to hold multiple PCBs
- Wide range of standard or customized nozzles designed per application requirements



CONFIGURATION

Like ONYX 29 the ONYX 500 builds on a very stable robot platform with linear motors, encoders and linear scales securing the highest precision and repeatability. The dynamic robot head is multifunctional and includes the top hot gas heater, the camera system, and a solder paste dispensing solution.

With the software controlled and programmable system, application programs can be generated with all needed process parameters stored in databases. It supports processes to automatically de-solder and remove defective parts, to perform contactless solder removal from the pads, to automatically apply fresh solder paste or flux, to automatically pick, vision align and place component and to automatically solder components passed on the stored process parameters and thermo solder profiles.

APPLICATION RANGE

Repairs

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

Prototyping

The components of small and large printed circuit boards can be assembled and soldered with the ONYX 500 automatically and efficient. It allows already used expensive components to be re-used.

Post-assembly

Components that are missing at assembly time can be placed and soldered later, or individual components which cannot be handled by the available production machines can be retrofitted with the ONYX 500.

Assembly

When printed circuited boards with only a few components need to be assembled, then the ONYX 500 often can provide an efficient solution.

Components

Zevac's standard gas nozzles from the proven DRS selective soldering machines can be used on the ONYX 500 without any modification. With the ONYX 500 all electronic SMD components and all customer specific components can be handled easily.

WIDE APPLICATION RANGE

Selective soldering, cleaning the site and desoldering of SMD and any odd shaped components. It allows all possible reworks processes to be executed fully automatic and operator independent. The highest performance ONYX 500 guarantees high reliability and ease of operation. It is equipped with a special active vision system for the accurate and automatic alignment of all SMDs including all fine pitch components.

MARKET REQUIREMENTS

Component positioning and soldering 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 ONYX 500 meets all these requirements in a precise manner.

AUTOMATED PROCESS CONTROL

Processes for picking up the component, fluxing, soldering or desoldering (thermoprofiles) processes are performed automatically.

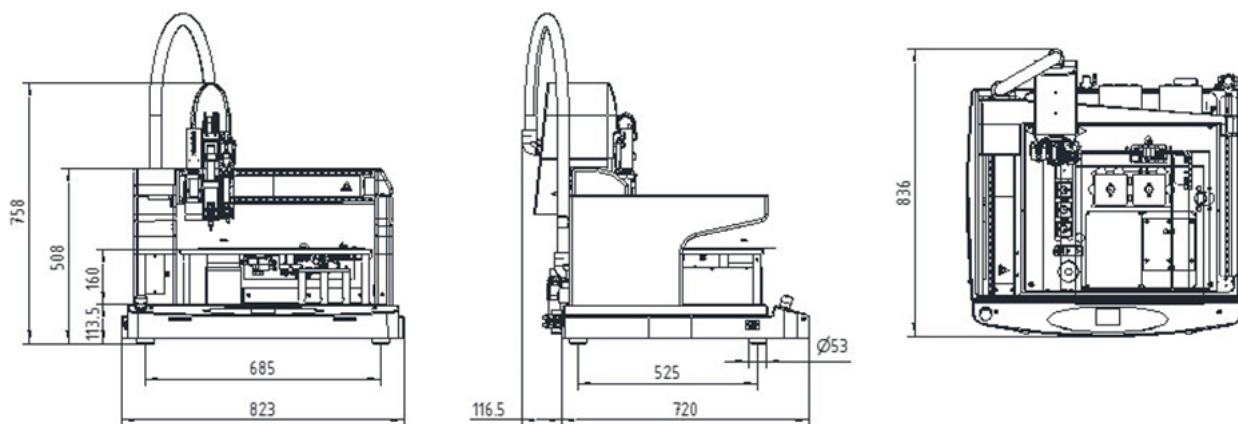


TECHNICAL DATA

Product designation	ONYX 500
Min. board size (W x D)	50 x 50 mm (lesser if using fixture)
Max. board size (W x D)	400 x 400 mm*
Board thickness range	Up to 6 mm
Max. component height	50 mm bottom side 50 mm top side
Vision system object size	0.1 x 0.1 mm up to 250 x 300 mm
Component and board illumination	Adjustable LED lights
Top heater power	800 W
Hot gas flow range	8 - 80 l/min (closed loop controlled flow)
Hot gas flow range	4-6 bar
Hot gas	Air or nitrogen
Controller	Computer controlled, Windows 10, VisualMachines™
Power requirements	3x400 / 230 VAC 3 PNE 50 HZ 16 A
Dimensions (W x D x H)	823 x 836 x 758 mm
Weight	160 kg

* Size can vary depending upon the selected configuration

DIMENSIONS



Note: Accessories shown on the pictures are not standard part of machine