

ZEVAC

ONYX 500

Fully automated repair of circuit boards



ONYX 500

The ONYX 500 is the fully automatic version of the thoroughly tested and well-established 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 in order to protect sensitive parts
- Closed loop gas flow control from 8 to 80 l/min
- Force measurement table secure precise closed loop control of each operations
- 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:

- Automatic nozzle changers for soldering / de-soldering, component picking & placement as well as pin print transfer nozzles
- Dip station for transferring solder paste or flux
- Automatic tape feeders
- Fixture to hold multiple PCBs
- Wide range of standard or customized nozzles designed according to 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 reproducible results. The dynamic robot head is multifunctional and includes the top hot gas heater, the camera system, and a solder paste dispensing solution.

With the programmable and software controlled system, application programs can be generated with all required process parameters and 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, to visually align and place components. As well it enables the automatic soldering of components passed on the stored process parameters and thermo solder profiles.

APPLICATION RANGE

Repairs

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

Prototyping

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

Post-assembly

Components that are missing at the time of assembly 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 requires assembly, then the ONYX 50 can therefore 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

These include selective soldering, site cleaning and desoldering of SMD and all other oddly shaped components. It allows all possible alteration processes to be executed fully automatically and operated completely independently. The top-notch performing ONYX 500 guarantees the utmost 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 while maintaining extreme precision.

AUTOMATED PROCESS CONTROL

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



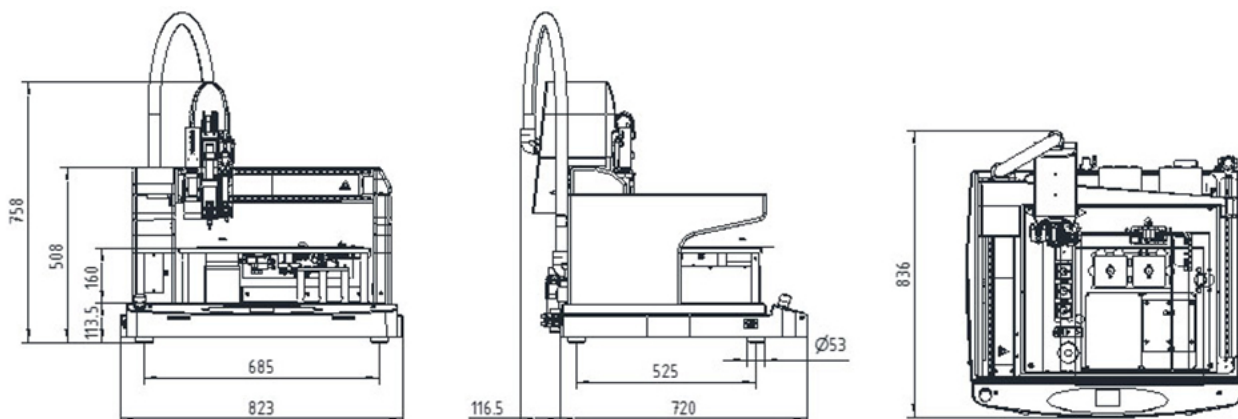
TECHNICAL DATA

Products 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 8 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	Air or nitrogen
Controller	Computer controlled, Windows 10, VisualMachines™
Power requirements	3 x 400 / 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

** Maximum component size 250 x 300 mm with MFOV and 20 x 19 mm with SFOV

DIMENSIONS



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

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