

ONYX 24

Repair of standard SMD circuit boards



ONYX 24

The ONYX 24 is used to process printed circuit boards with dimensions of up to 300 x 400 mm. Due to the integrated vision-system, the precise orientation of components is guaranteed. The multifunctional hot gas heater head can be used to solder components, remove components and for site cleaning processes (contactless removal of residual solder). There are also many unique options available for additional processes.

MAIN FEATURES

- **2000 watt multifunctional hot gas heater head:** Soldering of components, removal of components, site cleaning (contactless removal of residual solder), customer specific application upon request
- **Four motorized axes** with closed loop motion control
- **Integrated hand wheels** for quick and precise positioning of the hot gas head
- **Automatic process control**
- **Up to eight thermocouple ports** to control process temperature
- **Board handling for boards up to 300 mm width, no limitation for length** due to the open construction
- Board carrier handles irregular-shaped assemblies without special fixtures
- **Bottom pre-heater with a performance of 3500 watt** and the dimensions of 300 x 300 mm with integrated board cooling
- **Automatic closed loop force control of the Z-axis** to protect sensitive parts during automatic picking, fluxing, placing and removing processes
- **Closed loop gas flow control from 8 to 80 l/min**
- The **MFOV system** allows for the viewing of components with dimensions up to 75 x 75 mm, with an excellent adjustment range of the image contrast
- **Semi-automated, contactless site cleaning** for the removal of residual solder with a motorized Z-axis



REPAIR OF SMD-CIRCUIT BOARDS

Thanks to the high placement accuracy of <10 µm, the integrated force measurement and the control via four motorized axes, reproducible results of the highest quality are guaranteed for serial repairs and many other applications. Because of the open construction of the ONYX 24 the length of the edited printed circuit boards is not limited. The open architecture of the ONYX 24 and the variety of closed loop controlled parameters of the application software VisualMachines™ allow for simple lab applications as well as highly complex production processes that are repetitive and extremely precise. ZEVAC's standard gas nozzles from the proven DRS selective soldering machines can be used on the ONYX 24 without any modification. With the ONYX 24 all electronic SMD components and all customer specific components can be handled easily.

APPLICATION RANGE

Repairs

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

Prototyping

The components of small printed circuit boards can be assembled and soldered with the ONYX 24 semi-automatically. It allows for pre-used, expensive components to be re-used.

Post-assembly

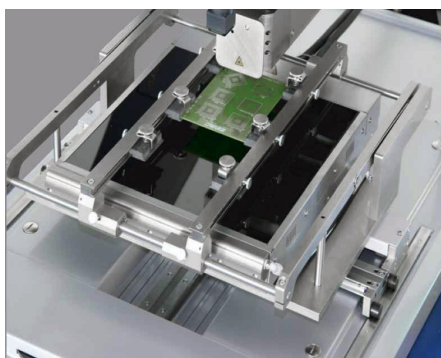
Components that are missing at the time of assembly, can be placed and soldered at a later time, or individual components which cannot be handled by the available production machines can be retrofitted with the ONYX 24.

Assembly

When printed circuited boards with only a few components need to be assembled, the ONYX 24 can often provide a reliable, semi-automated solution.

Components

Zevac's standard gas nozzles from the proven DRS selective soldering machines can be used on the ONYX 24 without any modification. With the ONYX 24 all electronic SMD components and all customer specific components can be handled easily.

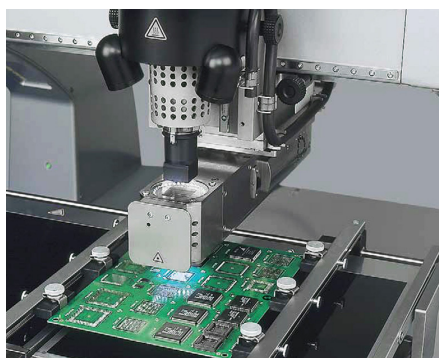


IR-PRE-HEATER SYSTEM

For lead-free applications

Pre-heater: 300 x 300 mm
3500 watt

Optional board cooling for faster cool down.

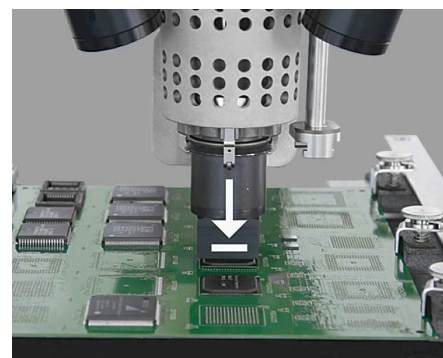


VISION (MFOV)

Guarantees 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 on all 4 sides. 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
- 2 LED illumination



FORCE PLACEMENT

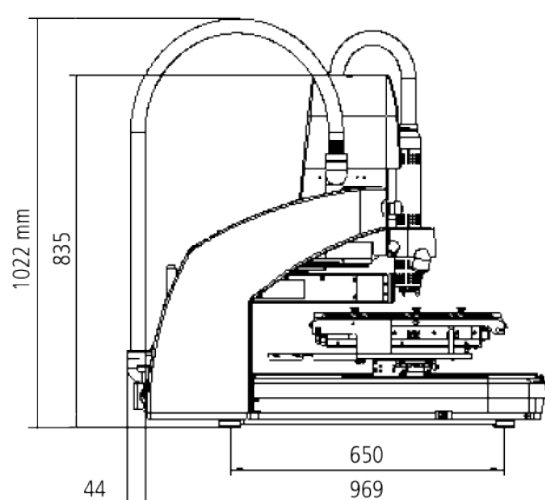
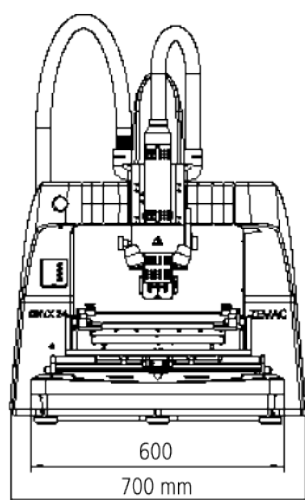
Accurate motorized force placement

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

TECHNICAL DATA

Product designation	ONYX 24
Max. board size (W x D)	300 mm width, ∞ depth
Max. component height	20 mm bottom side (optional 30 mm), 30 mm top side (optional 70 mm)
Max. component size	70 x 70 mm
Gas pressure	4 – 6 bar
Hot gas temperature	20 - 475 °C
Angle rotation of heater head	± 15°
Hot gas	Compressed air or nitrogen, 20 - 80 l/min
Max. power consumption	5600 VA
Power requirements	3 x 400 / 230 VAC, 50 / 60 Hz
Dimensions (W x D x H)	700 x 969 x 1022 mm
Weight	120 kg (basic machine)

DIMENSIONS



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