

## ONYX 24

Semi-automatic selective soldering machine  
to process standard circuit boards



## ONYX 24

The ONYX 24 is used to process printed circuit boards with dimensions 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, to remove components and for site clean processes (contactless removal of residual solder). In addition many unique options for several additional processes are available.

### MAIN FEATURES

- **2000 watt multifunctional hot gas heater head:** Solder components, remove components, site clean (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** thanks 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** for automatic picking, fluxing, placing and removing processes to protect sensitive parts
- **Closed loop gas flow control from 8 to 80l/min**
- The **MFOV system** allows viewing components with dimensions up to 75 x 75 mm and allows an excellent adjustment 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 <math><10 \mu\text{m}</math>, the integrated force measurement and the control via four motorized axes, reproducible results and highest quality are guaranteed for serial repair and many other applications. Because of the open construction of the ONXX 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 simple lab applications as well as high complex production processes 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 already used expensive components to be re-used.

### Post-assembly

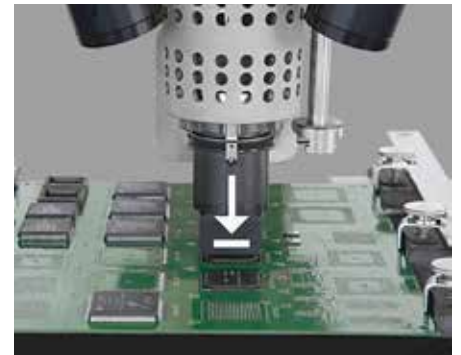
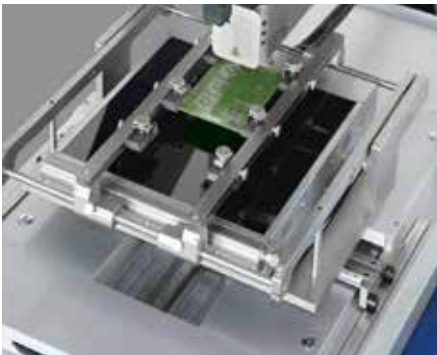
Components that are missing at assembly time can be placed and soldered later, or individual components which cannot be handled by the available production machines can be retrofitted with the ONYX 24.

### Assembly

When printed circuited boards with only a few components need to be assembled, then the ONYX 24 often can 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 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 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 the component automatically with force control in the gramme range onto the board.



## TECHNICAL DATA

Product designation	ONYX 24
Max. board size	300mm width, ∞ dept
Max. component height	20 mm bottom side (optional 30 mm) 30 mm top side (optional 70 mm)
Gas pressure	4 – 6 bar
Angle rotation of heater head	± 15°
Hot gas	Compressed air or nitrogen, 20-80 l/min
Max. power consumption	5600 VA
Electrical power requirements	3 x 400 / 230 VAC, 50 / 60 Hz
Dimensions (W x D x H)	700 x 1120 x 1022 mm
Weight	120 kg (basic machine)
Max. component size	70 x 70 mm
Hot gas temperature	20 - 475°C

## DIMENSIONS

