

WQB4000SOPS Rework System

For unmatched precision
and functionality

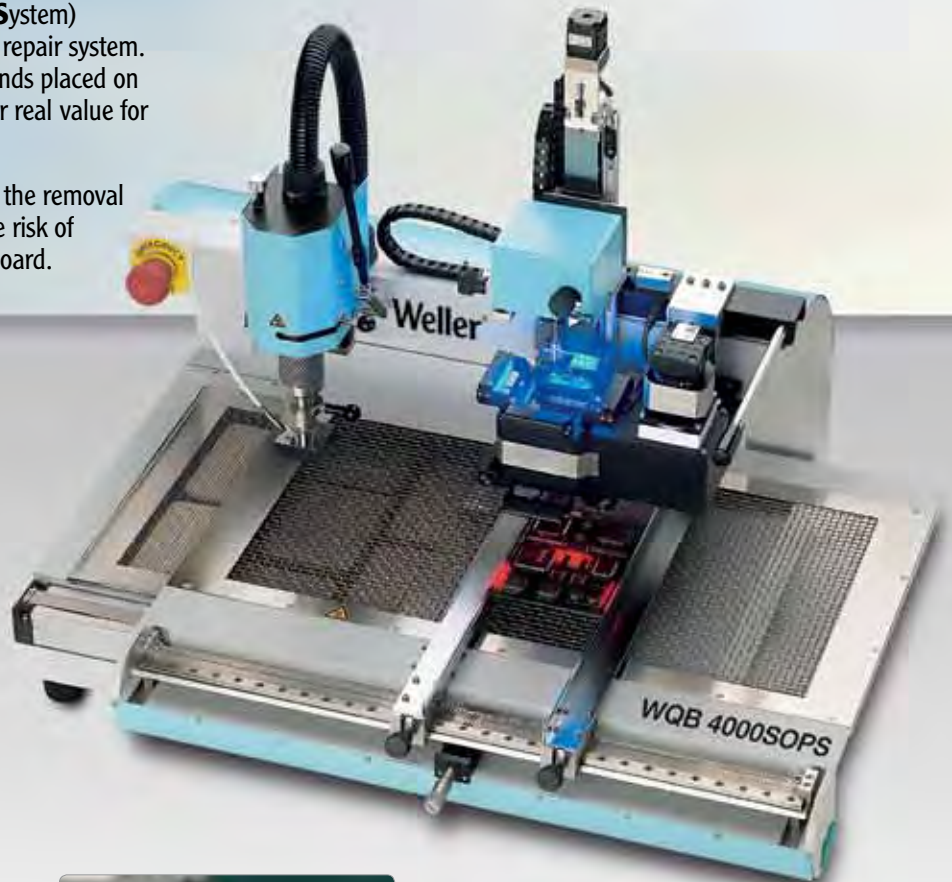


Opening up new possibilities in repair and rework.

As on-board components become increasingly complex, Weller® continues to lead the field with innovative, user-friendly repair and assembly tools that enable users to successfully take on increasingly demanding rework challenges.

The WQB4000SOPS (**S**plit **O**ptic **P**ositioning **S**ystem) is the third generation of the Weller BGA/SMT repair system. It is engineered to meet the exceptional demands placed on modern rework tools and is designed to deliver real value for your investment.

It is a comprehensive, user-friendly system for the removal and soldering of BGA components, without the risk of thermal damage to the component or circuit board.



Streamlined technology

The WQB4000SOPS enables users to work with a standard PC via a USB 2.0 port. Additional appliances or interface cards are not required.



Split Optics for perfectly accurate positioning

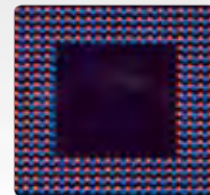
The SOPS (**S**plit **O**ptic **P**ositioning **S**ystem) with the high-resolution 2 MP CMOS USB 2.0 camera enables accurate positioning of the components following desoldering. It works with a single camera and two-color lighting for exact positioning. Superb image quality at high dynamics and very low image noise ensure precise, ergonomic component mounting.



An ever-expanding field of applications

The WQB4000SOPS is optimally equipped to take on repair and rework in mobile communications, research and general BGA/QFP work. Specifically, with PBGA, CBGA, CCGA, CSP's, Micro BGA, QFN, PLCC, SOP and PGA components.

1. Components without direct access to the solder joint
2. Leaded components with external solder joints
3. A wide variety of special modules



Perfect component/circuit board alignment

With the split optic camera, live images of a component and a circuit board can be aligned independently of each other using the x, y and theta axis fine adjustment drives.

1. Component size and theta axis
2. Align y axis
3. Align x axis
4. Component aligned!

Maximum precision. Maximum flexibility. Maximum user-friendliness.

This third generation repair and rework station combines a completely design with state-of-the-art split optic camera technology to provide users with absolute reliability, optimum process control and enhanced ease of use.

The system was engineered to bring together a finely tuned balance of automated technology for component pick-up

and positioning with a semi-automated rework cycle – opening up new possibilities and applications in repair and rework.

Well-considered detail, high-precision results and an outstanding price-performance ratio promise to make this system from Weller the first choice among discerning users.



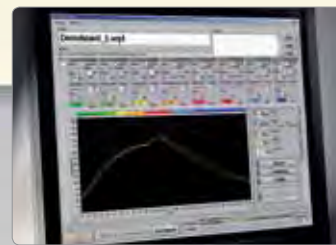
Heating from above: selective and sensitive

The hot gas heater with patented nozzle system, coupled with digital control electronics for temperature monitoring and regulation of the air flow rate, delivers the finely metered supply of heat to the components. A temperature sensor placed directly in the hot gas nozzle prevents thermal overload of the component and efficiently regulates the top heater, providing maximum process control.



Optimized ease of use

Everything about the QWB4000SOPS has been engineered and designed for ease of use and superb results – from its advanced, user-friendly software to its many supportive details, such as the SoftStart feature.



Monitoring software: comprehensive functions

The monitoring software determines temperature profiles and facilitates definition of the optimal soldering process.



Advanced design for enhanced precision

The QWB4000SOPS features a modular design with a slide platform and advanced patented systems and materials of the highest quality to guarantee industrial reliability and long-lasting durability.



Heating from below: rapid and homogeneous

The temperature-regulated two-zone infrared bottom heater provides rapid, yet precisely controlled warm-up at homogeneous substrate temperatures.

Teach-in feature: fast, effective parameter identification

Repeatable results can only be achieved by a process cycle that considers all the parameters of the repair operation.

The 'Teach-in' feature provides a quick and easy method of determining process cycle parameters and identifying critical points – without the need for in-depth operator knowledge.

The software includes a library of soldering profiles, i.e. general and specific parameters enabling repeatable use.

New profiles can be edited easily by the user and added to the library.

WQB4000SOPS rework cycle



1. Removal (desoldering) of the defective component

The ability to preheat the circuit board and a temperature/time controlled process are critical for good reflow of the solder joints. At the end of the reflow cycle, to avoid damage to the solder pads, a vacuum lift automatically removes the component from the board with minimum force and exact temperature control.



2. Cleaning of the circuit board

Residual solder should be removed from the board with a desoldering iron or desolder wick. Residual contaminants can be removed with a suitable solvent spray.



3. Positioning of the new component

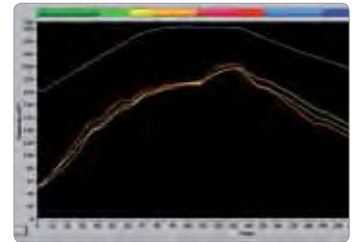
The WQB4000SOPS station's split optic camera placement system ensures precise positioning of a wide range of components – from BGA to fine pitch SMT.



4. Component soldering

Reflow of the replaced component is essentially a repeat of the removal process, without the vacuum lift being initiated at the end of the profile.

An extensive range of hot gas nozzles and adapters are available to cater for the many body sizes of BGA devices or QFP and PLCC packages.



5. Temperature profiling

An eight-step temperature profile enables soldering and cooling that are perfectly tailored to specific requirements.

See the wide range of WQB accessories including reflow nozzles, temperature sensors and working appliances at www.weller-tools.com



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Technical Data

Dimensions (L x W x H):	25 x 25 x 26 in. (630 x 630 x 650 mm)
Dynamic Dimensions:	41 x 25 x 26 in. (1030 x 630 x 650 mm)
Power Supply Voltage:	120VAC / 20 Amp, 50 / 60 Hz
Fuse Rating:	T10 A x 2 (20 Amp Total)
Total Power Rating:	1800 Watts
Top Heater Power:	700 Watts
Bottom Heater Power:	1100 Watts - Large Heater 10.25 x 10.25 in. (260 x 260 mm) 400 Watts - Small Heater 4.75 x 4.75 in. (120 x 120 mm)
Temperature Control Range:	150 - 750° F (50 - 400° C)
Temperature Accuracy:	± 18° F (± 10° C)
Compressed Air Supply:	58 - 87 PSI (400 - 600 kPa) of Purified, dry compressed air or Nitrogen
Air Flow (Hot Air Tool):	5 - 50 l/min.
Vacuum Source:	18 in. Hg (- 60 kPa)
Air Consumption (Avg.):	72.5 PSI / 5 Bar
Max. Component Size:	1.97 x 1.97 in. (50 x 50 mm)
Max. PC Board Size:	W: 20 x 20 in. (510 x 510 mm)
Weight (WQB4000SOPS Only):	88.2 lb. (40 kg)

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