



# TECHNICAL INFORMATION



## AQUBE<sup>®</sup> MV8 sTWIN

Twofold screen/stencil fine cleaning system with sequential utilization option



## AQUBE® MV8 sTWIN

Fully automatic twofold stencil/screen fine cleaning system with sequential usage possibility

Cleans screens, stencils and PumpPrints from SMD paste, SMD adhesive, soldering support substances, oil & dust

Capacity: 2 stencils, screens, carriers up to 950 x 770 mm (37" x 30")

Part number: 0900AQ8MV-2

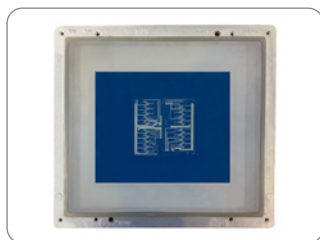


### Certifications:

This system in its basic version is certified for its energy and water saving processing, for easy operability and for the standard integration of comprehensive safety features.

- \* Two full-fledged separate process chambers, sequentially usable
- \* Two-tank system with four separate circuits
- \* Average process time: 16 min/cycle = approx. 8 min per stencil
- \* Intelligent network connectivity for implementation in industry 4.0 smart factories
- \* Fully automatic 4-step process: cleaning, MediumWipe®, rinsing, CWA® supercharger compression drying
- \* Vertical rotor system with four ASYNCHRO® spray rotors for thorough wetting (no blind spots)
- \* Water free operation possible with a suitable cleaning/rinsing detergent
- \* Processes and service intervals PLC controlled with event issuing and software control via touch screen
- \* Safe installation close to the production line/screen printer possible; no special protection required
- \* High performance on a very small footprint, large access points for quick and easy maintenance

### Key applications



Screens



Stencils



PumpPrints



M-TeCK stencils

The AQUBE® MV8 sTWIN is a fully automatic system with two process chambers for reliable precision cleaning of screens, stencils, PumpPrints or other flat products. It removes quickly and thoroughly contaminations such as SMD-paste, SMD-adhesive, flux residues, stabilizer materials, flux, oil, grease or dust.

The unique configuration of AQUBE® MV8 sTWIN with two tanks, four independent circuits and ClosedLoop water treatment does not require waiting for two stencils to be cleaned, or until running cleaning process is completed - one stencil cleaning can be started immediately and another time-delayed (or parallel).

The compact, easy-to-operate and easy-to-maintain system is Smart Factory ready.

**The cleaning system can be operated with all common electronics cleaning supplies (detergents/chemistry, etc.) which are approved by the manufacturer.**





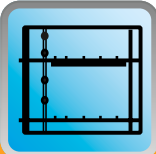


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## Application overview

				
Optional suitable	Most suitable	Optional suitable	Not suitable	Not suitable
PCBAs, Hybrids Power electronics Misprints	Stencils Screens Misprints (bare boards)	Solder frames Solder carriers Solder masks	ESD Boxes Containers Magazines	Condensation traps Filters Steel sheets

Optional suitable applications can also be optimally realized with the appropriate options.

**Cleaning** (key process 1): The process chambers can be operated in parallel or sequential mode. From the cleaning tank A (TA) the cleaner liquid is sucked by a magnetically coupled pump unit and routed with a controllable volume flow through a separate circuit into the ASYNCHRO® spray rotor nozzles. Their geometry ensures a comprehensive and thorough cleaning, even in inaccessible and critical areas.

**MediumWipe®** (intermediate process 2): The remaining cleaner is blown off from the clean products and blown out of the cleaner circuit and recirculated into the cleaning tank (TA) before the valve switchover closes.

**Rinsing with tap water** (key process 3): From the rinsing tank B/C (TB/C) the water is pumped through the separate second circuit into the spray rotors. For information: Tap water has (compared to DI-/DM-water) the advantage of lower surface tension and thus flushes also critical points as small apertures more efficient.

**MediumWipe®** (intermediate process 2): The remaining water is blown off from the products and blown out of the cleaner circuit and recirculated into the rinsing tank (TB/C).

**Final rinsing with DI-/DM-water** (optional process): The DI-/DM-water is produced from tap water in an integrated MB-cartridge and flushes conducting ions of the previous processes. This process is repeated automatically until the remaining amount of ions falls below the programmed value.

**MediumWipe®** (optional intermediate process): Blowing off and recirculating the remaining DI-/DM-water into the rinsing tank (TB/C).

**Drying** (key process 4): The purified products are dried with the patented CWA® - (Compressed Warm Air) technology. The built-in special compressor compresses the ambient air. At the same time it collects the kinetic energy (frictional heat) of the paddle wheel in the unit, then presses the heated and compressed air into the rotor nozzles which were already used for cleaning and rinsing. There it blows off (pressure) and evaporates (heat) the residual moisture. This method is energetically and constructively highly efficient, as it uses the "waste heat" of the compressor rotation and the compressed air as driving power for the rotors. In addition, a system equipped with CWA®-technology requires no additional hardware and no external compressed air connection for the MediumWipe® process.

**Maintenance:** The system has recessed removable panels for quick maintenance. In the maintenance area among others are the pump-out set, the re-dosage unit with space for a 25-liter detergent container and an optional re-dosing unit for a 5 l additive container as well as the MB cartridge for DI-/DM-water processing. Tank levels as well as pressure values and maintenance cycles are monitored by the PLC and displayed on the touch screen.



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### Main standard features

- Two process chambers to be optionally operated in sequential or parallel mode
- PowerSpray®-technology bundle: magnetically coupled XXL-Power pump units (tank A, tank B/C), fourfold ASYNCHRO® volume-spray rotor system, "Option100" software program (100 freely selectable programs)
- PolyPower® configuration with Power pump unit
- EATON Programmable Logic Controller (PLC)
- Smart Factory ready Premium: for remote control (see options) and traceability with retractable touch monitor and integrated industry PC (see options)
- High resolution 10" (1,024 x 600 mm) vertical display with multi-touch and intuitive process view
- Fourfold alternating LED status light bar integrated in the system frame
- Full flow coarse filter (process chamber)
- Function package Fine Filter System Tank A (incl. XXL-Power pump unit for the cleaning circuit, fine filter system and sediment filter for the cleaning tank A (TA))
- Function package Fine Filter system Tank B/C (incl. XXL-Power pump unit for the rinsing circuit and fine filter system for rinsing tank B/C (TB/C))
- MediumWipe® unit for further optimization of detergent and rinsing fluid use
- ClosedLoop reprocessing of cleaning and rinsing fluids
- Automatic re-dosage unit for 25 l detergent container
- CWA® supercharger compression drying
- Two-fold Ø 160 mm 2Step chamber extraction with extraction control
- Spare space for DI-/DM-water processing cartridge
- Safety features: safety interlock on the process chamber door, overflow alarm for all tank sections, overheating protection for all heating and drying elements, end switches for all motor-driven valves and drives, personnel protection insulation
- Removable side doors for quick and easy maintenance
- Doors, cladding and hinges enclosed without edges, depot for traceability scanner and monitor in the side wall recessed
- Process sections made of electrolysis resistant elements

■ = AQUBE®-exclusive components (vs. kolb PSE Economy series)



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### Main options

- Function package PCBA Cleaning (incl. option automatic water change for rinsing circuit/tank B/C (TB/C) with lifting unit, option heater cleaning tank (TA), function package DI water system (incl. DI-/DM-water measuring unit (residual ion contamination measurement), mixing-blending unit, ion exchanger cartridge, cartridge deaerator)
- Function package DI Water System "Combi" (incl. function package DI-water system (incl. DI-/DM-water measuring unit, (residual ion contamination measurement), mixing/blending unit, ion exchanger cartridge, cartridge deaerator) and option automatic water change for the rinsing tank (TB/C)
- Function package Online Cleaner Regulation (incl. brix monitor for refraction measurement, automatic re-dosing of the cleaner, flow meter, dosing ball valve)
- Function package Noise Insulation (incl. option housing insulation and option safety/storage tray with integrated underfloor insulation mat)
- Function package Traceability "Basic" (incl. SPC data scanner, data backup in CSV file, backup via SD card (via slot in the PLC)
- Function package Traceability "Comfort" (incl. PLC data scanner and retractable touch monitor and industrial PC with Intel processor)
- Automatic re-dosage unit for 5 l additive container
- Automatic water exchange with pump-out system for the rinsing circuit/rinsing tank B/C (TB/C)
- Decalcification unit for reducing the lime content in the rinsing water (tap water) circuit/rinsing tank B/C (TB/C)
- Heater for the cleaning tank A (TA)
- Remote control (browser-based control/monitoring via mobile device or PC)
- RMA Remote Maintenance Assistance (factory-controlled maintenance support)
- Paint of choice (frame rack, coverings and hood)

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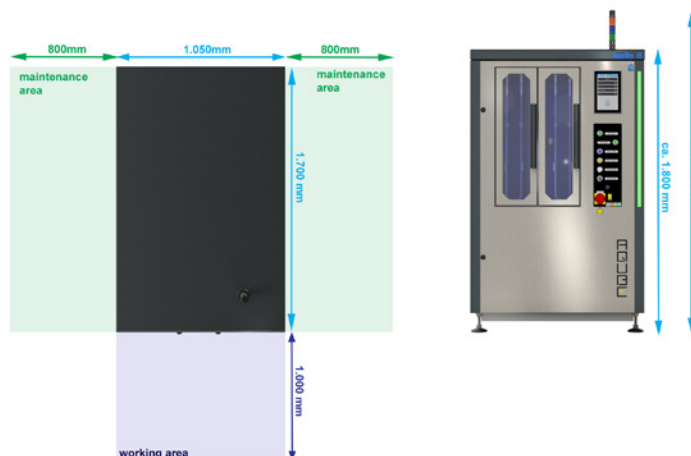
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## Technical data

Technology base	<b>kolb PowerSpray®</b>
Capacity	2 stencils, screens, carriers up to 950 x 770 (37" x 30")
Process chamber dimensions	2 x W 2705 • D 1,000 • H 87 mm (W 10.63" • D 39.37" • H 34.44")
Usable chamber dimensions	2 x D 950 • H 770 mm (D 37 • "H 30")
Volume tank A (cleaning)	75 l
Volume tank B (rinsing)	75 l
Electrical supply	400 V AC, 16 A, CEE-plug/3 Ph/50 or 60 Hz
Power consumption	4.8 kW
Control system	PLC (EATON)
Max. cleaning temperature*	50 °C (122 °F) - *max. temperature load for the tank circuits
Filter system	1. Full flow coarse filter < 2mm (0.08"), 2. 20" fine filter (1 - 100µm - process dependent)
Supply connection 1 (tap water)	> 18 °C, 1/2" hose with 30µm water filter (on-site inlet water quality, pressure 3 - 4 bar, < 250 - 350 µS conductivity (< 10° dH) or descaling unit option. Do not use a softening/soft water system in the inlet)
Supply connection 2 (DI-/DM-water)	> 18 °C, 1/2" hose with 30µm water filter (DI-net provided by customer or bridging to tap water)
Supply connection 3 (compressed air)	6 - 8 bar (87 - 116 psi) - 100 l/min for option MediumWipe®, connection for 8 mm (0.31") hose
Rinse water drain connection	(integrated pump-out system) connection for 1" hose
Exhaust connections	2 x Ø 160 mm (6.3"), exhaust capacity 200 - 300 m³/h (7,063 - 10,595 ft³/h)
Footprint	W 1,050, D 1,700 mm (W 41.34", D 66.93")
Operating noise	74 dB(A)
Operating condition room temperature	20 - 35 °C (68 - 95 °F)
Empty weight	680 kg (1,500 lbs)



Performance description of a fully equipped system. All rights for changes reserved that lead to technical improvement.

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