PSE MH5

PowerSpray®
VMH®Drying
ClosedLoop

Fully automatic PowerSpray® "allround" economy cleaning system for tools and maintenance cleaning

Cleans solder frames, solder carriers, solder pallets, ESD boxes, PCB magazines, trays, machinery parts

Capacity: 7 carriers up to 540 x 480 mm, 21“ x 19“ or up to two drawer baskets

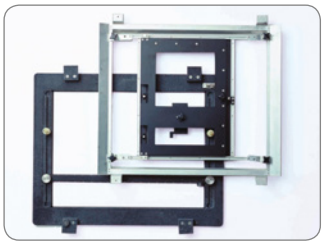
Part number: 0905PSE5MH11

ENERSAVE WATERSAVE EASOTECH SAFEGAR

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

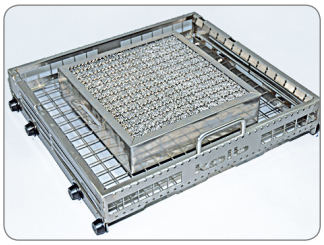
- Two tank system with triple circuit function
- Fully automatic 3step (optional up to 5Step): cleaning, rinsing (tap water), VMH®-Turbo hot air drying
- Horizontal PTFE mounted rotor system with asynchronous spray rotors for thorough wetting (no blind spots)
- ClosedLoop reprocessing of cleaning and rinsing fluids as standard feature
- Process and service intervals PLC controlled
- Event issuing and software control via touch screen
- Maximum capacity on a very small footprint

Key applications


Solder frames, carriers


ESD boxes, magazines


Machinery parts


Condensation filters

The **kolb** PSE economy line is a quality series of advanced cleaning systems, which focuses on all essential criteria for a qualified cleaning process and therefore stands for attractive purchase prices.

PSE MH5 is an "allround” cleaning system for almost every requirement of tools and maintenance cleaning such as the cleaning of carriers, filters, containers and parts from flux residues, oil dust and grease.

The two-tank and up to three circuits configuration ensures short cycle times and makes this system a perfect economic choice for tools and maintenance cleaning in electronics production.

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	Optional suitable	Most suitable	Most suitable	Optional suitable
Assembled PCBs	Stencils	Solder frames	ESD Boxes	Condensation traps
Hybrids	Screens, PumpPrints	Solder carriers	Containers	Filters
Misprints	Misprints	Solder masks	Magazines	Steel sheets

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

Cleaning (key process 1): From the cleaning tank (A) the cleaner liquid is sucked by a magnetically coupled pump unit and routed with a controllable volume flow through a separate circuit into the PTFE mounted ASYNCHRO® stainless steel spray rotors with patented PUSHFORCE® nozzles. Their geometry ensures a comprehensive and thorough cleaning, even in inaccessible and critical aereas. After the washing procedure, the valve switchover of the process chamber undocks the cleaning circuit until the next process run.

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

Rinsing with tap water (key process 2): From the rinsing tank (tank B / C), the water is pumped through the separate second circuit into the spray rotors. Tap water has (compared to DI / DM water) the advantage of lower surface tension and thus flushes also critical points as low standoffs more efficient.

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

Clear 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.

Drying (key process 3): The clean products are dried with the patented VMH® (Venturi Mixed Hot air) technology. A high volume flow of normal circulating air is blown into a venturi nozzle. The resulting differential pressure there (passively) sucks on a small amount of very high temperature air. The resulting air mixture provides for uniformly high drying temperature (adjustable between 70 and 90 °C) all over the process chamber. Further advantages are robustness and low cost of ownership. Energy is only needed for a fan and the heating of a very small amount of air; the rest is executed by pressure differences and air duct geometry.

Maintenance: The system has a large maintenance door on the right side. In the maintenance area among others are the pump-out set, the optional re-dosage unit with space for a 25 liter detergent and 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

- PowerSpray® technology bundle: magnetically coupled S-Power (Standard) pump unit, twofold ASYNCHRO® volume-spray rotorsysterm with low maintenance PTFE mounted stainless steel rotors with PUSHFORCE® nozzles, "Option101" software program (101freely selectable programs)
- EATON Programmable Logic Controller (PLC)
- High resolution 7" (1.024 x 600 px) display with capacitive multi-touch and intuitive process view
- Washing cart for solder frames, ESD-safe with grounding connection for the operator
- Full flow coarse filter (process chamber)
- VMH®-Turbo evaporative drying (control range approx. 70 - 90 °C)
- ClosedLoop reprocessing of cleaning and rinsing fluids
- Spare space for MB / DI cartridge
- Exchange for rinse water and pump out unit
- 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
- Process sections made of electrolysis resistant elements

Main options

- Automatic monitoring of ionic residues contamination and gauging of rinse water quality
- Automatic re-dosage unit for 25 l detergent and 5 l additive container
- Descaling unit to reduce the lime content in the rinsing water
- Drawer inserts for container and machinery parts cleaning, ESD safe
- Drawer inserts for horizontal stencil cleaning with ASYNCHRO® stainless steel TopDown rotors with PUSHFORCE® nozzles
- Drip & storage reservoir
- Exhaust unit
- Fine filter for cleaning ciruit
- MB / DI cartridge for deionized (DI) and demineralized (DM) water
- MediumWipe® unit for further optimization of detergent and rinsing fluid use
- Permanent automatic rotor run control
- Sediment filter (tank A)
- Status light fivefold to display the current process state
- X-Power pump unit
- XL-Power pump unit

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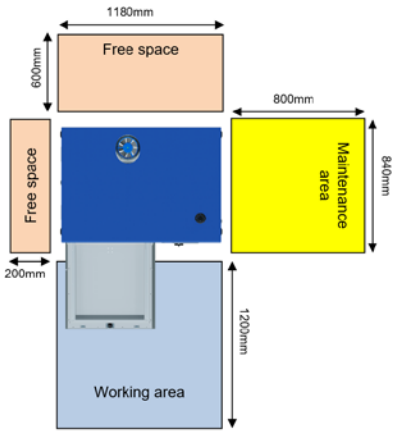
Technical data

Technology base	**kolb** PowerSpray®
Capacity	7 carriers up to 540 x 480 mm, 21“ x 19“ or up to two drawer baskets
Process chamber dimensions	W 540 ▪ D 590 ▪ H 570 mm
Usable space lower drawer only	W 540 ▪ D 540 ▪ H 480 mm
Usable space utilizing two drawers	W 450 ▪ D 475 ▪ H 225 mm (two times)
Volume tank A (cleaning)	ca. 55 l
Volume tank B / C (rinsing)	up to 35 l
Power supply	400 V AC, 16 A CEE / 3PH / 50 or 60 HZ
Power consumption	approx. 3.8 kW
Control system	PLC (EATON)
Temperature load	up to 55 °C
Control range drying	approx. 70 - 90 °C
Filter system	up to three stage - 1. Full flow coarse filter < 2 mm, 2. Sediment filter inside the tank, 3. 20“ fine filter (1 - 100µm - process dependent)
Supply connection 1 (tap water)	3/8", hose connection 14 mm with 30µm water filter (prov. by customer: inlet water quality < 350 µS conductance value (< 10° dH) or option descaling unit)
Supply connection 2 (DI / DM water)	1/4", hose connection 14 mm with 30µm water filter (DI-net prov. by customer or bridging to tap water)
Supply connection 3 (compressed air)	6 - 8 bar (100 l / min) for HT-version or optional MediumWipe® process
Rinse water drain connection	3/4", hose connection 25 mm with integrated pump out system
Exhaust connection	Ø 160 mm, exhaust capacity 200 to 300m³ / h
Operating condition room temperature	20 - 35 °C
Operating noise	63 dB (A)
Empty weight / Empty weight	920 x 1.200 mm, 350 kg

Top view



Front view