

# PS04 AR

**Single-chamber cleaning system for multiple applications.** The available process chamber dimensions W 850 / H 580 / D 750 mms and the 3 spray rotors provide cleaning solutions which qualify PS 04 as the **kolb** "Allrounder"

**Art.Nr. 090504-PS-AR**

## Single-chamber cleaning system

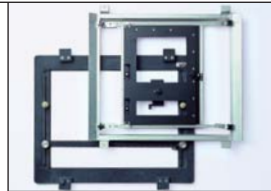


**The situation:**

Cleaning tasks in today's electronics producing industry are multiple and commonly subject to different requirements. A great variety of products and tools, such as solder carriers, mounted PCBs, ESD-boxes, PCB storage racks, solder frames, machine parts e.g. flux filters will permanently be contaminated in the process with e.g. flux, SMD-paste, greases, oil, fat, dust and other residues. With the use of one single water-based detergent all such contaminations can be removed entirely and residue-free. Also permanently rising labour-costs make it necessary to invest into automated cleaning processes. Special solutions for one cleaning requirement only are hard to justify and very often economically not viable. **kolb** PS04 is a cleaning machine that covers a majority of the above mentioned cleaning requirements. The system has been designed taking into consideration highest possible operator comfort and simple handling and it provides high flexibility regarding the system configuration. Freely selectable is the use as a closed-loop system independent of tap water supply or with fresh water as the rinsing media. The quality of rinsing with tap water can be improved and optimized with the option DI-water system. Furthermore the available option sewage water preparation AA 75 allows to keep the rinse water quality on a level which could fulfill requirements of water authorities and government departments.

**The advantages of PS04:**

- Fully automatic closed-loop 4-stage process; cleaning, MediumWipe, rinsing and -drying with high-volume 3-sprayrotor system
- Simple one-push button operation
- Tailor-made interchangeable product mountings in the process chamber
- Service cart with loading rail for tailor-made product fixtures ( optional)
- Short cycle times (<20 min) depending on detergent and degree of contamination
- transparent space-saving air-lock door / illuminated process chamber
- No explosion protection necessary, operation close to the production line possible
- Water-free process possible, the double tank closed-loop system allows the use of a detergent for rinsing instead of tap water
- Stainless steel, process sections in electrolysis-resistant PVC
- Permanent PLC- control of the complete process / 4 password levels
- Integrated pump-out unit for the rinse tank
- 3-stage fine filtration, 10µ for both cleaning and rinsing
- 4-stage PowerSpray-unit with magnetic coupled pumping system and filtrated warm air drying (patented technology)



Solder carriers



Mounted PCBs



ESD-Boxes



PCB storage-racks



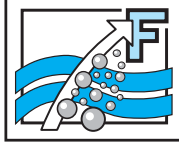
Service cart/Product carrier

**Applications**

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\*Solvent = organic hydrocarbon, under normal conditions volatile, flammable and risk of explosion.



## PS04 AR - ALLROUNDER

Transparent Air lock



Loading



Operator display



Function



Maintenance



### Process cycle times:

A typical cleaning process for solder carriers and solder frames takes approx. 20 minutes, depending on the type and age of contamination as well as depending on the topography of such carriers. For ESD-boxes or PCB storage racks an average cleaning cycle time will be 25 - 35 minutes, again depending on design and draining possibility.

### Function:

The PS04 will be loaded using the space-saving air-lock door. Products to clean can either be directly positioned into the tailor-made product fixtures or using an optionally available service cart with loading rail to the product fixtures. After loading the door will be closed and locked using the START push-button and the 4-stage cleaning process will run down in the pre-selected cycle time. The process status and the applicable cycle times will be shown in the graphic operator display. The short running times ensure a quick return of the products into the production process and the installation of the PS 04 close to the production lines represents a vital element in the value-added chain

### Attention: Cleaning only with waterbased detergents certified by the manufacturer!

### Control:

PS 04 will be controlled by a PLC. In the operator display there is a 3-stage program selector switch for different cleaning programs, e.g. 1 solder frames/ carriers 2 boxes, storage racks, 3 machine parts. The applicable timings are freely adjustable in the PLC.

The 4 level password control enables the limited access to vital process parameters.

### Service:

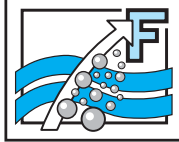
During development of PS04 special care was taken to ensure a comfortable and easy handling for the operators and the maintenance personnel. The system has a service access with door at the left-hand front side for the dosage units and behind the left-hand side cover for the fine filtration. In this area there are the fine filter cartridges, the pump-out set, the optional dosage unit and the optional sewage water preparation unit AA75. Moreover there is space for the optional DI-water cartridge. The access to both tanks for cleaning detergent and rinse water/detergent is located behind the removable front cover of PS04.

The levels of both tanks are easily visible through illuminated inspection openings at the front. The tank levels will be controlled automatically by the PLC which will indicate min-level or max-level with a respective warning in the display. The PLC likewise controls and indicates filter pressure, maintenance cycles, events and incidents and operation data.

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# PS04 AR - ALLROUNDER

Sewage water AA75



Dosage



Heaters/pH/DI



Reservoir



Exhaust



**Options / accessories for PS04:**

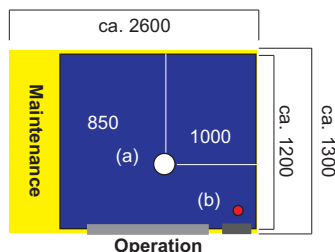
- Status light 5-fold for system status monitoring from the distance
- Exhaust control with motor driven flap valve to reduce high suction / too high consumption
- Autom. re-dosage for the rinse water tank/cleaning tank incl. dosage of necessary additives (option)
- Autom. water change for the rinse tank
- pH-value control for rinse tank or cleaning tank
- Temperature adjustable detergent heater for both the cleaning tank and the rinse tank
- DI- water system for the rinse tank with integrated DI- cartridge
- Sewage water preparation AA75 with heavy metal absorber cartridges and integrated pump-out unit.
- Reservoir with screwed and sealed front and overflow control
- Noise reduction 74 to 70 dB (A)
- Service cart ● tailor-made product fixtures ● washing frames ● Metal grid in drip trough

**Technical data:**

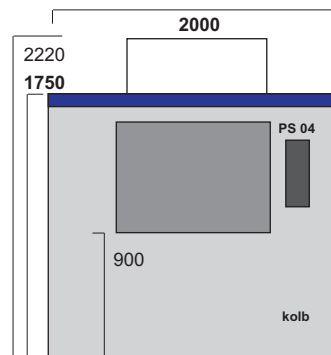
Power supply	: 400 V AC 32 A CEE / 3Ph / 50 or 60 Hz
Power consumption / control system	: approx. 4,2 -11 kW (depending on options) / SPS / K&M
Ambient Temperature (min./max.)	: approx. 20° C / 50° C
Noise	: < 74 dB (A) with
Weight	: approx. 710 kg
Contents cleaning tank TA	: approx. 75 l (detergent water mixture)
Contents rinse water tank TB	: approx. 75 l (rinse detergent or water)
Fine filtration	: ≤ 10 µm candle filters and bottom fleeces
Exhaust connection (prov. by customer)	: 160 mm Ø > 200 to 300m³/hour
(Option) Connection water supply	: 3/8", hose connection
(Option) Connection rinse water drain	: 3/4", hose connection
incl. pump / elevation unit	

Footprint and max. space required in mms

**Top view**  
Max space required incl. loading and maintenance



**Front view**  
incl. optional exhaust 160 mms (a) and status light (b)



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