

# PSB 500 H90/H90 HT

**Fully automatic XXL high volume PCB cleaning system** for process safe ultra fine cleaning of PCB, Hybrids and misprints from reflow flux residues, rosin, resin, copper, Cu oxide and aggressive soldering support substances.

**Part No. 0905500-PSB-H90 / H90 HT**

## XXL PCB cleaning system



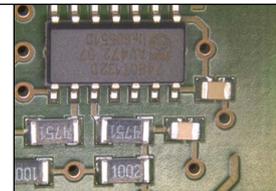
### The situation

Cleaning of PCBs is not only a necessary prerequisite for reliable varnishing and embedding and thus consequently for climatic safety / leaking current safety. It also helps to eliminate mistakes and thereby preserve the value of misprinted boards and to ensure the optical quality of electronic components.

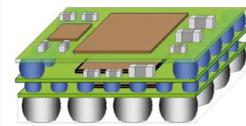
**kolb PSB500 H90** is a compact batch cleaner in VA stainless steel housing and integrated process circuits exactly for those requirements. With this system the initially complex process of PCBs cleaning has been developed into a fully controllable and easy to operate process. The system version PSB500 H90 HT is designed for high temperature cleaning and rinsing up to 80° Celsius. PSB500 H90 systems, equipped with loading and unloading automats can be coupled to highly efficient mass plants (see page 4).

### The advantages of PSB500 H90

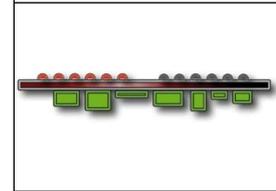
- Capacity up to 830 (19 m<sup>2</sup>) eurocards in up to four variable VA baskets.
- Comfortable push-one-button operation.
- Autom. monitoring of ionic residues contamination and gauging of rinse water quality.
- Fully automatic 4step process: cleaning, rinsing (tap water), DI-water rinsing (with variable DI-water processing), drying with VMH<sup>®</sup>\*- turbo hot air.
- Three integrated circuits in a two tank combi system.
- Horizontal asynchronous spray rotor system (no spray shadows).
- VA baskets, ESD-safe with grounding connection for the operator.
- Permanent rotor run control as an option.
- Process and service intervals PLC controlled.
- Event issuing and software control via touch screen.
- PLC data recording and importing by scanner possible.
- Heater in Tank A (cleaning circuit) as a standard feature.
- ClosedLoop reprocessing of cleaning and rinsing fluids as standard feature.
- Exchange for rinse water and pump out unit as standard features.
- DI-/VE water mixing and blending unit as an option.
- Automatic re-dosing from 25 l detergent and 5 l additive container as an option.
- Spare space for resin cartridge to be integrated into the system as an option.
- Made of stainless steel, process sections are made of electrolysis resistant elements.
- Installation close to the production line possible; no special protection required.
- Extremely compact: Only 3 m<sup>2</sup> floor space required.
- All safety relevant devices are standard features in the basic system configuration.



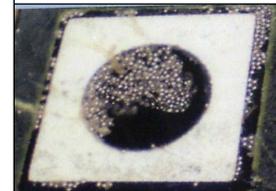
PCBs



Hybrids / HDI / SiP



Misprints



Misprint



Varnished PCBs

**Applications**

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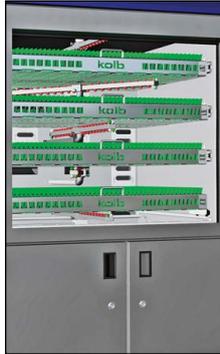
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\* Venturi-Mixed-Hot Air / All rights for changes reserved that lead to technical improvement.



# PSB500 H90 - XXL PCB cleaning system

**Process chamber**



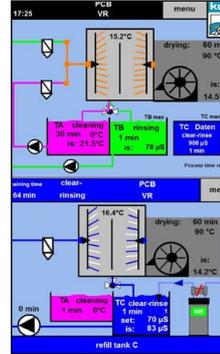
**SpeedLoad cart**



**Operator panel**



**ClosedLoop**



**Monitoring**

warning chart	
error chart	
process documentation	
service	(1)
operating data	(2)
process parameter	(3)
change user level:	RESET (0)

## Function

**Loading:** The PCB boards are placed into the VA-cleaning basket of the PSB500 H90. A variable number of different dividers can be freely inserted into the cleaning baskets. As an option upper baskets with an integrated center spray rotor and tube connections to the machine can be offered which quadruples the loading capacity of the PSB500 H90. After the loading the sliding lock door will be automatically closed. All relevant data of the fully automatic 4step process cycle is displayed on the touchscreen monitor.

## System control / configuration

The PSB500 H90 is controlled by a PLC. Setting and monitoring will be entered / read out via the color touchscreen (industry-PC with Windows CE). The applicable cycle times and parameters are freely adjustable in the PLC. After being configured once, the system runs only with the use of one button (Start / Stop). The 3-stage program selector switch on the operator panel allows different cleaning program presets. Up to 99 further programs can be configured and selected using the touchscreen. The control system provides a recall function for all event messages from PLC memory.

## Process parameters

The cycle time depends on the degree and nature of contamination, the thickness of such contamination, the cleaning detergent, possible water pockets that influence drying as well as process parameters.

## Maintenance

During the development of the PSB500 H90 special care was taken to ensure a comfortable and easy handling for the operator and the maintenance personnel. The system has a service access with a door at the right hand side. In this service area there are the pump-out set, the optional re-dosage unit (detergent container of 25 l), additive container of 5 l). Furthermore there is space for an optional resin cartridge for DI-water processing. Easily accessible behind the cover door are likewise the tanks for manual filling and servicing. The tank levels will be controlled automatically by the PLC which will indicate min-level or max-level with a respective warning. This PLC likewise controls pressure values of the fine filtration as well as the service and the maintenance cycles.

**Standard equipment:** Turbo hot air drying, lower cleaning basket (compl.), heater tank A, fine filter tank A, and tank B / C, DI-regulation unit, XL-Power pump unit, water exchange / pump out for tank B / C.

**Options / accessories:** Exhaust unit, Re-dosage (detergent & additive), upper cleaning baskets (compl., 2 variations), MediumWipe®, status light (3- or 5-fold), automatic water change for cleaning circuit (only HT version), automatic rotor run control, reservoir, MB / DI cartridge, descaling unit, PLC data and scanner unit, SpeedLoad cart, various carriers.

**Please note:** The cleaning system may only be operated with detergents and other raw materials and supplies certified by the manufacturer!

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# PSB500 H90 - XXL PCB cleaning system

**PLC computer**



**Re-dosage**



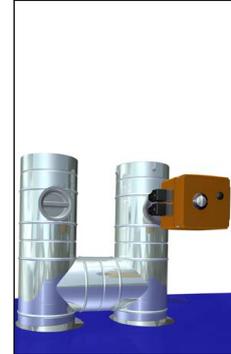
**DI processing**



**Reservoir**



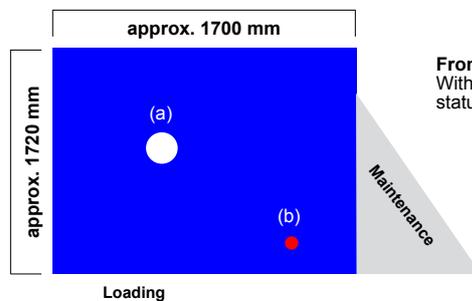
**Exhaust unit**



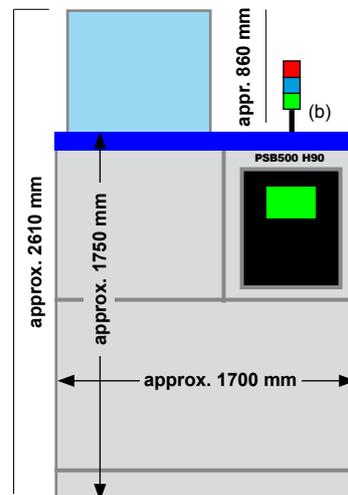
**Technical data**

Process chamber dimension / Capacity	:	W 970 • D 955 • H 900 mm / 830 (19 m <sup>2</sup> ) eurocards
Available space using one basket	:	W 880 • D 890 • H 760 mm
Available space using two baskets	:	two times W 880 • D 890 • H 355 mm
Available space using four baskets	:	four times W B 880 • D 890 • H 150 mm
Power supply	:	400 V AC 32 A CEE / 3Ph / 50 or 60 Hz
Power consumption / control system	:	approx. 12.5 kW / PLC (EATON)
Tank contents clean, rinse incl. saving step	:	Tank A, B / C each approx. 100 - 125 l
Temperature load tank A (cleaning circuit)	:	up to 55°C (basic system), up to 80°C (HT-system)
Compressed air connection - optional	:	6 - 8 bar (100 l / min.) for MediumWipe® process
Exhaust connection (prov. by customer)	:	160 mm Ø > 200 to 300m <sup>3</sup> per hour
Connection water supply (Tap water)	:	3/8", hose connection 14 mm (prov. by customer: inlet water quality < 350 µS conductance value (< 10° dH) or option descaling unit)
Connection water supply (DI / VE water)	:	3/8", hose connection 14 mm (DI net prov. by customers or bridging to tap water)
Connection rinse water drain	:	3/4", hose connect. 25 mm with integrated pump out system
Ambient Temperature (min./max.)	:	approx. 20°C / 40°C
Noise	:	63 dB (A)
Weight	:	920 kg

**Top view:**  
Max. space required  
(a) = Exhaust (160 mm)  
(b) = Status light



**Front view:**  
With optional status light (b)



**Certifications:**

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



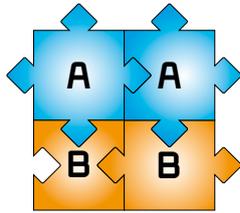
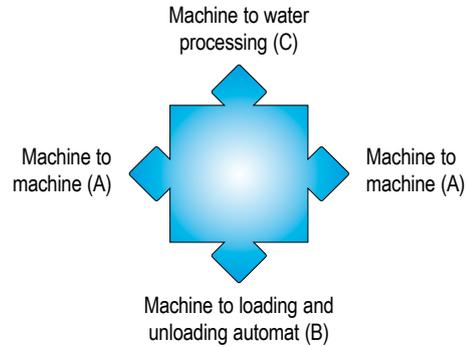


# kolb CleaninGrid® Technology

**Function:**

All kolb PSB500 H90 systems are designed to be networked for easy expansion or to build a large plant for the highest mass industrial quantities. This kolb CleaninGrid® technology is completely flexible and constructively easy to execute. Every PSB500 H90 system as the center of the grid has three network options:

- Machine (A) to machine (A)
- Machine to loading / unloading automat (B)
- Machine to water processing system (C)

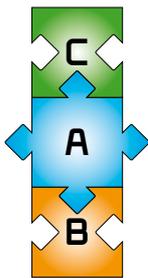


Example configuration:  
Two PSB500 systems,  
two loading and unloading units.  
Capacity:  
Appr. 8300 eurocards  
(per 8 hour shift)  
Appr. 25.000 eurocards  
(per 24 hour operation)



**Large installations and comprehensive washing plants**

From just connecting two systems together to fulfill moderately growing volume requirements to building a complete washing center for quantities of multi-thousands of boards per day und evaporator water processing, the mutable kolb CleaninGrid® technology leaves all options.



Example configuration:  
PSB500 system with  
loading and unloading unit and kolb vacu-  
umdistiller for 100%  
recycling of rinse water.  
Capacity:  
830 eurocards per  
cycle (appr. 6,5 sec.  
per board)



**The main advantages of the kolb CleaninGrid® technology:**

- Much higher throughput than any conventional inline installation (a single PSB500 H90 batch system already exceeds the capacity of one average inline system).
- Shorter cycle times per board than any PCB cleaning system on the market.
- Extremely lower power consumption compared to any system or installation on the market with a comparable capacity.
- Significantly lower operating costs compared to any conventional inline system with a comparable capacity.
- The complete installation out of one hand.

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