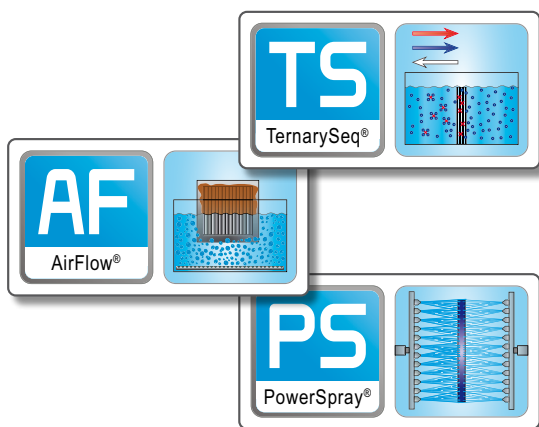
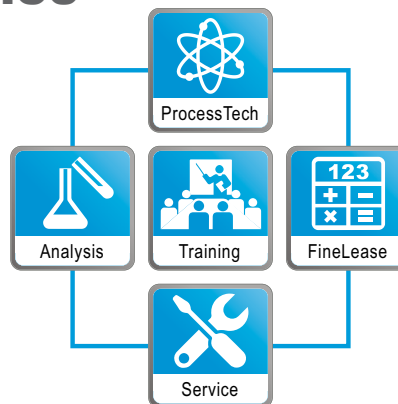


## Engineering

## Process design & Service



## Technology development

## Cleaning chemistry



# CLEANING TECHNOLOGY - WORLDWIDE

## kolb - System supplier for efficient results

**Kolb** Cleaning Technology is one of the world's leading companies in manufacturing cleaning systems for the electronics producing industry. Our strong position in the market is based on a strict pursuit of our company principles.

### **Competence by specialization - Our business is cleaning, only cleaning**

We are a German SMB, an independent company which concentrates only upon its core competence.

### **Systemic thinking - Comprehension of the complex electronic production processes**

We own comprehensive know-how about machine cleaning as an integrative component of the electronic manufacturing and value added chain.

### **Universal offer - Efficient cleaning means more than a machine and a detergent**

For us cleaning begins with a demand inquiry as well as economic efficiency analysis and ends with the sewage processing.

### **Respect for the environment - Compliance with all ecological regulations**

**Kolb** is considered to be the inventor of the aqueous cleaning which has set new standards for the environmental compatibility of detergents. This alone imposes an obligation on us.

### **Innovation on demand - Developmental tasks originate from fundamental market knowledge**

We are in permanent and close contact with our customers and understand their current and future challenges.

### **Individualization as a policy - The electronics market is limitless and thus are its cleaning requirements**

Every task, every process is different - our analysis and system concept offers solutions for every detail.

### **Long-term and sustainable thinking - success is, if our customers are successful**

We do not see ourselves as a simple supplier, but as a stable partner of our customers with the same interest in their success like they themselves.

### **Immediate reaction - Our daily business is characterized by flat hierarchies and authorized decision-makers**

**Kolb** Cleaning Technology is a privately owned company where the majority owners are in charge of the daily business and all operational decisions.

### **Respect the competitors - May the best one win**

Fair competition is an innovation driver as well as an indicator for one's own performance. For just that reason every market participant deserves respect.

Headquarters, Germany



Logistics center, Germany



# SINCE 1988 INNOVATIVE TECHNOLOGIES

## More than 25 years of comprehensive know how

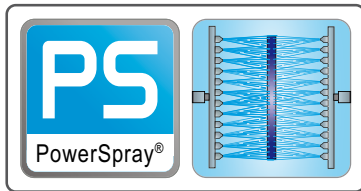
Since more than 25 years, **kolb** is developing innovative technologies for the cleaning in the electronics industry, both in mechanical engineering and cleaning chemicals. Global companies such as Alcatel, Bosch, EADS, General Electric, Flextronics, Nokia, Philips, Siemens and many more have certified **kolb** cleaning systems and detergents for their businesses and share it worldwide in their production.

In the **kolb** technical center and analysis lab new developments are permanently tested and existing technologies are continually developed further.

The **kolb** product portfolio is based on three core technologies: PowerSpray® and AirFlow® in mechanical engineering and the TernarySequence® technology in the cleaner business.

### PowerSpray® (PS) machinery technology

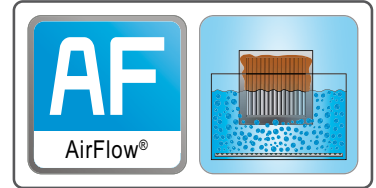
PS systems are perfectly suited for surface cleaning and the optimum cleaning of apertures / perforations in ultrafine-, fine- and maintenance cleaning: Systems with PowerSpray® technology using high volume pressure mobile spray devices and aqueous detergents, do not require no extra safety area and thus allow installation close to the production equipment.



### AirFlow® (AF) machinery technology

AF dip and flow systems with AirFlow® technology are perfectly suited for superior requirements in maintenance cleaning: in AF cleaning systems the contaminated parts are constantly submerged in cleaning detergent.

All AF-Systems do not require a special safety area and therefore can be placed close to the production line.

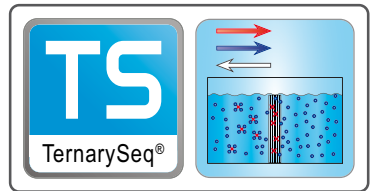


### TernarySequence® (TS) cleaner technology

The TernarySequence® technology equips quality detergents with an extremely high ability of regeneration to be used with fairly simple and low energy-consuming filtration techniques.

Due to these simple filtration requirements TS detergents have a long lifespan, and so they help saving cost, water and waste.

TS-cleaning detergents can virtually be used in every cleaning system with a comprehensive variety of different technologies and with a basic filtration only.

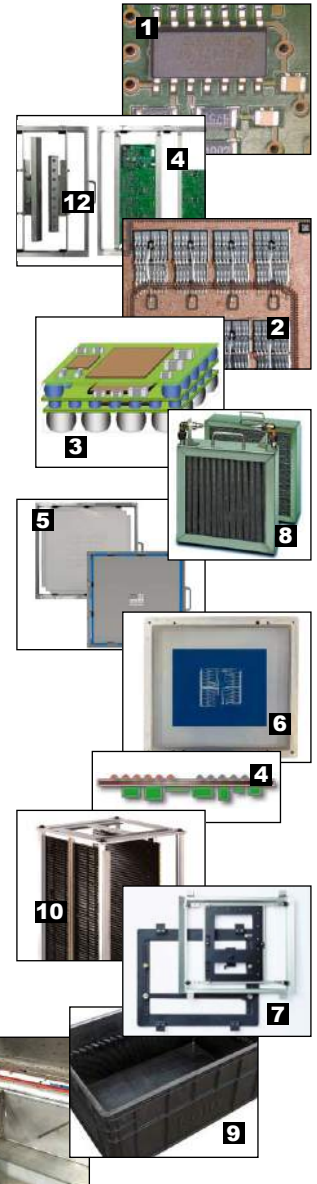


# CLEANING IN ELECTRONIC PRODUCTION

The kolb Matrix: What contamination must be cleaned in which production area?

Segment	Goods to be cleaned	Contaminations				
		SMD-Adhesive	SMD-Paste	Flux (Colophony condensation)	Flux (Colophony residues)	Dust / oil / grease
Ultra-Fine Cleaning	PCB assemblies <b>1</b>				X	X
	DCB <b>2</b>				X	X
	Hybrids / HDI / SiP <b>3</b>				X	X
	Misprints (misprinted PCB) <b>4</b>	X	X		X	
Fine Cleaning	Stencils / PumpPrint <b>5</b>	X	X			
	Screens <b>6</b>	X	X			
	Carrier / Masks <b>7</b>				X	X
Maintenance & Parts Cleaning	Condensation Traps (Filter, radiators from convection reflow ovens) <b>8</b>			X	X	X
	ESD boxes / Container <b>9</b>				X	X
	PCB storage racks / Trays <b>10</b>				X	X
	Machine parts (Flux units, sheet metal, pumps etc.) <b>11</b>			X	X	X
Manual Cleaning	Process chamber (Soldersystems) <b>12</b>			X		X
	Other production tools <b>12</b>	X	X	X	X	X

Applications



## The up to date cleaning requirements:

- Reproducible quality in ultra-fine and fine cleaning
- Fastest possible reutilization of tools in maintenance cleaning
- Flexible versatile systems with preferably multiple processes
- Water saving operation
- Energy saving operation
- No extra safety areas required
- Ecologically safe processes with ecologically safe chemistry
- Detergents that clean fastly and thoroughly without residues
- Uncomplicated disposal or processing of cleaning detergents

# HIGHLY SENSITIVE PCB CLEANING

## PSB600 series - For the highest demands

Cleaning of integrated SiP, HDI boards, PCBs, substrates and hybrids

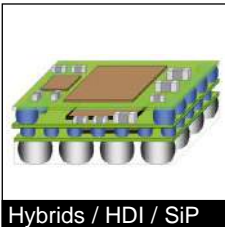


### — ULTRA-FINE CLEANING —

An ever increasing degree of miniaturization and therefore increasingly complex physical structures of HDI boards and advanced SiP turn cleaning in this high-end sector into a significant factor for profitable production.

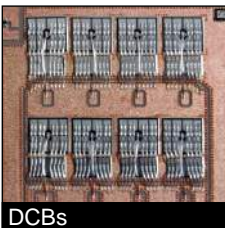
The thorough removal of fluxes, rosin, resin, copper, Cu-oxide and aggressive soldering support-substances is the main task to prevent failures during production and even more so when the products are working.

The **kolb** PSB600 series offers market-leading process safety and personnel protection for the cleaning of complex and valuable PCBs. Various chamber sizes, different rotor configurations and drying technologies always provide the best solution for every demand.

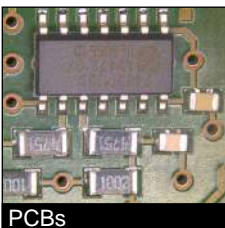


Hybrids / HDI / SiP

All series systems are extremely compact and operate with comfortable push-one-button handling in a fully automated 5Step process: cleaning, MediumWipe®, rinsing (tap water), DI-water rinsing, continuous DI- / VE-water processing and drying.



DCBs



PCBs



PSB600 V70

kolb systems: solid - flexible - safe

### The main features of the PSB600 series:

- Three tank system with three separate circuits
- Fully automatic water exchange for rinse and DI-water
- ClosedLoop recycling of cleaning and rinsing fluid
- Autom. adjustment of rinse water and ionic residues quality
- Process and service intervals PLC controlled
- Event issuing and software control via touch screen
- SPC data recording and importing by scanner possible

### PSB600 H50 / H70 / H90

Capacity up to 830 (19 m<sup>2</sup>) eurocards in up to four baskets, horizontal spray rotors, turbo hot air drying, PolyPower pressure unit, 1,6 - 3 m<sup>2</sup> floor space  
Process chambers: from W 540 mm, H 590 mm, D 570 mm to W 970 mm, H 955 mm, D 900 mm

### PSB600 V70 / V90

Capacity up to 72 eurocards in a wash cart or 40 DCB panels (5" x 7"), vertical spray rotors, compression drying, full traceability, 1,6 - 3 m<sup>2</sup> floor space  
Process chambers: from W 700 mm, H 710 mm, D 720 mm to W 970 mm, H 955 mm, D 900 mm



PSB600 H90

Further information: [www.kolb-ct.com](http://www.kolb-ct.com)



PCB cleaning basket



SpeedLoad cart

# HIGH VOLUME PCB CLEANING

## PSB500 series - Fully automatic efficiency

For PCBs, hybrids and misprints - short cycle time: < 6.5 seconds



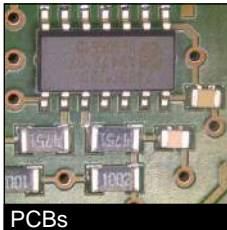
### ULTRA-FINE CLEANING

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

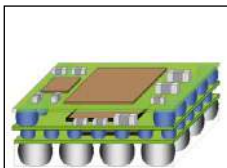
The **kolb** PSB500 series offers extremely fast (relative cleaning time per PCB up to < 6.5 sec.) and compact batch cleaners with integrated process circuits for the ultrafine cleaning of PCB components and hybrids.

#### The main features of the PSB500 series:

- Two tank combi system with three circuits
- ClosedLoop recycling of cleaning and rinsing fluid
- Fully automatic water exchange for rinse and DI-water
  - Automatic adjustment of rinse water and ionic residues quality
  - Process and service intervals PLC controlled
  - Event issuing and software control via touch screen
  - SPC data recording and importing by scanner possible
  - Footprint only 1,6 to 3 m<sup>2</sup>



PCBs



Hybrids / HDI / SiP



SpeedLoad cart



PSB500 H50

All systems of the series are extremely compact and operate with a comfortable push-one-button handling in a fully automatic 4step process: cleaning, rinsing (tap water), DI-water rinsing with variable DI-water processing and turbo hot air or compression drying.

The horizontal rotor system with asynchronously spray rotors prevents spray shadows and ensures thorough cleaning of even the finest dirt.

#### PSB500 H50 / H70 / H90

Capacity up to 830 (19 m<sup>2</sup>) eurocards in up to four baskets, PolyPower pressure unit (H50 / H70), turbo hot air drying, full traceability, 1,6 - 3 m<sup>2</sup> floor space  
Process chambers: from W 540 mm, H 590 mm, D 570 mm to W 970 mm, H 955 mm, D 900 mm

#### PSB500 V50 / V70 / V90

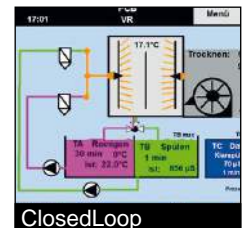
Capacity up to 72 eurocards in a wash cart or 40 DCB panels (5" x 7"), vertical spray rotors, compression drying, full traceability, 1,6 - 3 m<sup>2</sup> floor space  
Process chambers: from W 700 mm, H 710 mm, D 720 mm to W 970 mm, H 955 mm, D 900 mm



PSB500 H90



PCB cleaning basket



ClosedLoop

# EFFICIENT STENCIL CLEANING

## PSB700 series & PS07 TWIN - a multiple choice

Multiple capacity for screens, stencils and PumpPrints



### FINE CLEANING

Economic, efficient and with high throughput: The **kolb** PS07 TWIN, PSB700 V50 TWIN, V70 TWIN and V90 QUAD systems clean up to four screens or stencils in just one cleaning cycle.

#### The main features of PS07 TWIN:

- Two tank system with two separate circuits
- Products up to 900 x 800 mm (35" x 32")
- Comfortable one-push button operation
- Fully automatic 4step process with cleaning, MediumWipe®, rinsing and drying
- ClosedLoop recycling of cleaning and rinsing fluid
- Short cycle time (approx. 7 min.) depending on detergent and thickness of contamination
- Door with inspection glass into the process chamber
- 3 -stage fine filtration 10µm both for cleaning and rinsing
- Process and service intervals PLC controlled
- Event issuing and software control via touch screen
- Water-free operation possible: A suitable detergent can be used for the rinsing due to the double tank system

Efficient cleaning of stencils is a prerequisite for reproducible quality in electronics production. These systems are also certified for use in solar manufacturing.

#### The main features of the PSB700 series:

- Two tank system with two separate circuits
- Closed loop recycling of cleaning and rinsing fluid
- Fully automatic 4Step process
- Process and service intervals PLC controlled
- Event issuing and software control via touch screen
- SPC data recording and importing by scanner possible

#### PSB700 V50 / V70

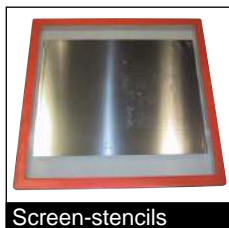
Capacity: 2 screens / screen-stencils up to 640 x 640 mm (25" x 25") or 710 x 585 mm (26" x 23"), vertical spray rotors, compression drying  
Process chambers: up to W 700 mm, H 710 mm, D 720 mm

#### PSB700 V90 QUAD

Capacity: 4 creens / screen-stencils 736 x 736 mm (29" x 29"), vertical spray rotors, compression drying  
Process chamber: W 970 mm, H 955 mm, D 900 mm



Stencils



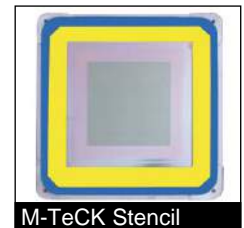
Screen-stencils



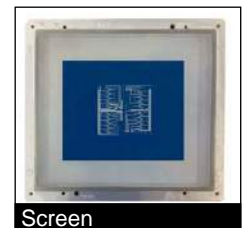
PS07 TWIN



PSB700 V90 QUAD



M-TeCK Stencil



Screen

# START-UP PRO'S FOR FINE CLEANING

## For screen and stencil cleaning: The C-class

Compact cleaning systems with high process stability at a favorable price



— FINE CLEANING —

Best possible cleaning of stencils today is the prerequisite for reproducible quality in electronics and solar cell production. The trend goes towards highly automated, quick, cost-saving yet efficient and reliable processes. The development of the **kolb** compact cleaning systems PS300 VL, PS300 VS, PS300 HD and PS300 CA with PowerSpray® technology for small and medium quantities has taken this into consideration. With a required floor space of only 90 x 120 cm and a height of only 160 cm (without status light) all PS300 systems are extremely compact and offer an uncontested price-performance ratio.

### The main features of PS300 series:

- Combi tank system with one communicating detergent
- For cleaning products up to 31" x 37,5" / 780 x 950 mm
- Comfortable push-one-button operation
- Fully automatic looped process run
- Short process time
- PLC controlled process times
- PLC controlled filter saturation
- Stainless steel front with all process sections made of electrolysis-resistant materials
- Positioning close to the screen printer possible
- Certified to operate in solar cell production

All systems operate in a closed loop without water or water disposal connection with an intelligent two tank system with one communicating water based detergent and an integrated cascade sediment filtration.

### PS300 VL

4step process - cleaning, rinsing, MediumWipe®, drying with warm air high power compression, 5-stage fine filtration, cycle time < 13 min., Eaton SPS graphic display

### PS300 VS

3step process - cleaning, MediumWipe®, drying with warm air compression, permanent 3-stage fine-filtration with 10 µm, cycle time < 18 min., Siemens SPS Logo

### PS300 HD

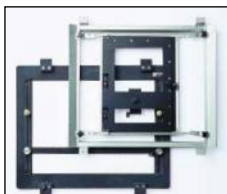
2step process - cleaning and HotSpeed air drying, permanent 3-stage fine-filtration with 10 µm, cycle time approx. 30 min., Siemens SPS Logo

### PS300 CA

2step process - cleaning and compressed air drying, permanent 3-stage fine-filtration with 10 µm, cycle time < 30 min., Siemens SPS Logo



Screens



Solder carriers



PS300 CA



PS300 HD



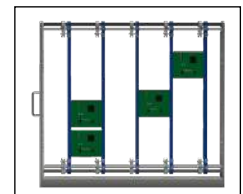
PS300 VS



PS300 VL



Stencils



Misprints

kolb systems: solid - flexible - safe

Further information: [www.kolb-ct.com](http://www.kolb-ct.com)



# FROM FINE TO ULTRAFINE CLEANING

## PS300 2HY - A stencil cleaner doing more

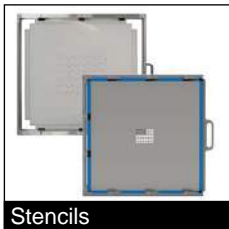
Compact system for screens, stencils, PCBs, misprints or solder carriers



— FINE & ULTRAFINE CLEANING —

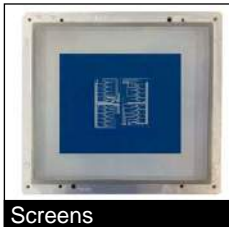
Besides the cleaning of screens and stencils electronic manufacturers often have the need to clean PCBs or misprints or as well soldering frames from SMD paste, SMD adhesive, flux, oil, dust, grease, etc.

**Kolb** now offers within its 300 compact series a fully automatic single chamber 3 - 4step PowerSpray® cleaning system for various goods up to 780 x 950 mm (31" x 37.5").



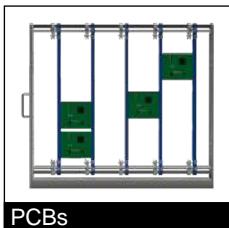
Stencils

The PS300 2HY is the most compact multifunctional system in its class. With two tanks and three circuits it accomplishes in addition to fulfilling the demands of fine cleaning also highly qualified processes in the field of ultrafine cleaning of PCBs.



Screens

Depending on individual needs, this powerful „all in one“ system is the ideal completion of a high-value-added production chain. The efficient two-tank technology enables the **kolb** PS300 2HY to be an optimal screen cleaner also for the solar industry. The standard PolyPower pump-nozzles configuration allows up to three times more pressure power and up to 30% less cycle time.



PCBs

Despite its versatile application options, the system is easy to use. Once the programming is configured individually the machine is operated with only one button and a three-position switch.



Solder carriers

Like all **kolb** systems also the PS300 2HY includes as standard equipment all necessary safety features. Also serial standard is the integrated ClosedLoop processing of cleaning and rinsing fluid, ensuring its cycle run multiple use.

### The main features of PS300 2HY:

- Fully automatic 3 - 4step process: cleaning, rinsing (tap water), DI-water rinsing (with variable DI-water processing), drying with VMH® hot air by 3-fold digital control
- ClosedLoop recycling of cleaning and rinsing fluid
- Comfortable one-push button operation
- Short cycle time (e.g. 15 min. for stencils)
- 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)
- Automatic exchange for rinse water including pump out unit
- Variable DI- / VE-water mixing and blending unit
- Automatic re-dosing from 25 l detergent and 5 l additive container
- Only 80 x 150 cm floor space required



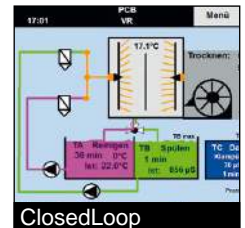
Stencil loading



PCB loading



PS300 2HY



ClosedLoop



Re-dosage

# POWERSPRAY FOR MAINTENANCE CLEANING

## PSB400 series - Simply clean tools

For any maintenance and parts cleaning task in electronic production



### MAINTENANCE CLEANING

In the electronics production process a great variety of tools is permanently contaminated with different residues. The systems of the **kolb** PSB400 series clean solder carriers, ESD-boxes, PCB storage racks, masks, machine parts and other small parts from flux, oil, dust and grease.

#### The main features of the PSB400 series:

- Two tank combi system with ClosedLoop processing
- Comfortable one-push button operation
- Fully automatic 3step process
- Optional 4step process with DI-rinsing
- Process and service intervals PLC controlled
- Event issuing and software control via touch screen
- SPC data recording and importing by scanner possible
- Heater for Tank A (cleaning cycle) as an option
- DI-/VE water mixing and blending unit as an option
- Automatic re-dosing from 25l detergent and 5l additive container as an option
- Exchange for rinse water and pump out unit as standard features
- All safety relevant devices are standard features in the basic system configuration
- Footprint 1,6 to 3 m<sup>2</sup>

**Kolb** systems of the PSB400 series are real „all rounders“ for maintenance and parts cleaning due to their flexible machine configuration.

Likewise flexible are the possibilities of use of rinse and cleaning fluids: The optimal adapted cleaning medium can be used as ready-mix (RM ReadyMix) or via the optional re-dosage unit as a concentrate (CN Concentrate).

#### PSB400 H50

Capacity: 7 solder carriers up to 560 x 490 mm or up to 2 baskets, PolyPower pressure unit, compression drying  
Process chamber: W 540 mm, H 590 mm, D 570 mm

#### PSB400 H70

Capacity: 11 solder carriers up to 700 x 620 mm or up to 3 baskets, PolyPower pressure unit, compression drying  
Process chamber: W 700 mm, H 710 mm, D 720 mm

#### PSB400 H90

Capacity: 28 solder carriers up to 710 x 450 mm or up to 4 baskets, horizontal spray rotors, compression drying  
Process chamber: W 700 mm, H 710 mm, D 720 mm



Solder carriers



Machinery parts



PSB400 H70



PSB400 H90



Solder carriers



ESD boxes

# CONDENSATION TRAPS & PARTS CLEANING

## AF20 and AF30 - Dip and drum cleaning

For condensation traps, machine parts, small parts & bulk good



### — MAINTENANCE CLEANING —

In the fully automatic **kolb** AF20 and AF30 systems the goods are cleaned, rinsed and dried in one single process chamber, which is empty during the loading and is pressure flooded with fine filtered cleaning fluid from a separate tank through a PLC controlled process. After the goods are cleaned with the pressure flooding AirFlow® technology, the likewise filtered rinsing media, e.g. water, is pumped into the process chamber from a separate tank. Drying is operated by a HotSpeed warm air dryer unit, integrated into the system lid.

The process chamber of the systems can be used variably for different requirements:

- The direct dip or immersion cleaning in the process chamber is an ideal process for the cleaning of condensate filters or machine parts.
- The dip cleaning in up to five in the process chamber rotating wire mesh baskets is the perfect method to wash lathe parts, milled parts or die cast components.
- The drum cleaning in an into the process chamber mounted washing drum is the optimal solution for bulk goods or even lathe parts, milled parts or die cast components.

Both systems are pre-equipped by default with a ClosedLoop re-treatment processing, provided for both the cleaning as well as the rinsing fluid and prepared for the connection to a WPCL CrossLoop system for the recycling of completely used up rinse water.

### The main features of AF20 and AF30:

- 200 l (AF20) or 300 l (AF30) process chamber
- Short cycle times
- Available with washing drum for bulk good
- Available with rotation unit for up to 5 cleaning baskets
- One-push button handling - fully automatic
- Short cycle times, high cleaning efficiency
- Load and unload into empty process chamber
- Fully automatic process: cleaning - rinsing - drying
- ClosedLoop recycling of cleaning and rinsing fluid
- Cleaning and rinsing circulation with skimmer fine filtering
- Rinsing circulation with automatic water exchange
- Filter pressure PLC controlled
- Maintenance and operation events PLC controlled
- Available with automatic re-dosage unit
- Stainless steel tubeframe base rack with rugged casing made of stainless steel
- Simple and quick maintenance



Condensation traps



Parts cleaning basket



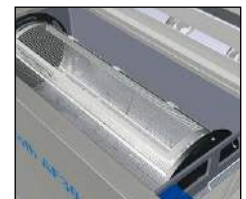
AF20



AF30



Seho filter



Washing drum

# SPECIAL CHEMICALS FROM THE SAME SOURCE

## Highly efficient, aqueous, ecologically safe

### Detergents for ultra-fine cleaning

For SMD adhesive, SMD paste, colophony and flux



**MultiEx VR-SP RM** Water based alkaline TS® Ready-Mix for e.g. PCBs, ceramic substrates, misprints, stencils, aluminum, stainless steel etc.



**MultiEx 3D RM** Water based 3-dimensional TS® detergent ReadyMix cleans DCB-substrates / PCBs, ceramic substrates, copper, nickel, aluminum, stainless steel etc.

### Detergents for fine cleaning

For SMD adhesive, SMD paste, colophony and flux



**MultiEx N7 CN / RM** Water based pH-neutral TS® broadband cleaning and rinsing detergent for stencils, misprints, aluminum, stainless steel, etc.

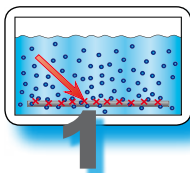


**MultiEx B11 CN / RM** Water based alkaline TS® broadband cleaning detergent for stencils, misprints, PCBs, aluminum, stainless steel etc.

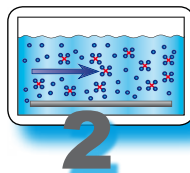


**MultiEx SC RM** Water free TS® special cleaner for photo-technical screens, stencils and PumpPrint stencils

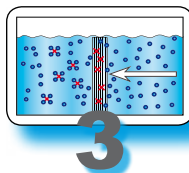
### Cleaning detergents with TS® technology



1



2



3

**Sequence 1:** Elimination of particle adhesion

**Sequence 2:** De-activation of particles

**Sequence 3:** Filtration / regeneration

### For maintenance- and parts-cleaning

For flux residues, colophony condensation, grease, etc.



**ContraFlux CN** Water based alkaline broadband cleaning concentrate for solder frames, solder carriers, machinery parts and PCB carriers (for AirFlow® systems)



**ContraFlux FM RM** Water based alkaline ReadyMix detergent for colophonium and condensats of flux management systems, stainless steel, etc. (for AirFlow® systems)

### Manual cleaners

For flux residues, colophony condensation, grease, etc.



**CF1** Water based alkaline cleaning ReadyMix for manual cleaning of SMD ovens, wave-soldering machines, carriers and machinery parts



**G50** Water based alkaline cleaning ReadyMix for manual basic cleaning of hard and old residues from SMD ovens, wave-soldering machines, machinery parts etc.



**WetWipes** Water based pH-neutral ready-to-use, detergent-soaked cleaning tissues for the manual cleaning of SMD tools



**RM24** Special agent for rinsing of sensitive metal surfaces specially for the cleaner ContraFlux FM as an alternative to water

All **kolb** detergents are eco-audit compatible, have VOC reduced formulations, no unpleasant odor and can be safely operated in the production area. They offer widespread applications, best efficiency and easy waste disposal.

Further information about these detergents as well as more special cleaners, manual cleaners and particular additives: [www.kolb-ct.com/detergents](http://www.kolb-ct.com/detergents)

# ACCESSORIES AND PARTICULAR SYSTEMS

## Clever solutions - the answer to customer demands

The options and accessories range for **kolb** cleaning systems offers - from cleaning carrier to reservoir, from storage cart to pH-value test - almost everything, which makes the cleaning process easier, faster and more efficient. Any part of this program can either be installed prior to delivery or be retrofitted at a later stage at customer site.

### Flexible carriers

Adapter washing frames for

- Frameless stencils
- PumpPrint stencils
- DEK Vector-Guards
- Misprinted boards
- PCBs
- Squeegees and scrapers



### Stencil storage cart

The stencil storage cart has a capacity of five stencils and is the optimum solution for transport and storing close to the cleaning system.

The service and storage cart can be used e.g. for placing of PCBs into LF-carriers fixed on the cart.



### ServiceCases SC300/400

for a quick and safe process monitoring of cleaning detergents.

Measured values (scale units):

- Refraction (brix)
- pH value
- Conductance ( $\mu\text{S}$ )



The **kolb** machinery portfolio includes even more products - from a basic entry model to „all in one“ systems to specialized systems e.g. for the external cleaning of cyclones, containers and tubing to turnkey rinse water treatment systems. Here you find some examples:



AF03 / AF04

Favorable entry models for the maintenance cleaning



PSB400 H70P

Rotation basket system for industrial parts cleaning



PSB100 H70 / H90

Hybrid systems for three full-fledged cleaning processes



PSB600 V85

High end system for high volume DCB cleaning



WPC100

CrossLoop recycling system for used up rinse water



WPSD 500

Special system for sewage water processing

More systems and further information: [www.kolb-ct.com](http://www.kolb-ct.com)

# PROCESS DESIGN AND SERVICE

## First class service before and after the sale

**Kolb** offers its customers service right from the beginning: precise determination of the requirement, mutual description of the demand, test of possible solutions, support with extra-disciplinary problems, etc. Upon demand in a close cooperation with its customers all tasks will be addressed and solved quickly and efficiently. This does likewise include the time after the sale of a system, particularly when it is necessary to work on further requirements or upgrade the product or the process to new cleaning tasks.



### Analysis / Laboratory

We analyze and optimize your processes: In our laboratory we can obtain and memorize necessary data quickly and easily. Our research, expertise and the information which we receive from the close cooperation with our customers will be put together to a comprehensive service and assistance offer.

Optical inspection, spectro-photometrics, ionic contamination / conductivity measurement and chemical analysis are only a few of the services our laboratory can offer.



### Demonstration center

In our Demonstration center we are able to simulate all processes of our machines at customer's location. If necessary it is possible to upgrade modify and optimize the installed options to fulfill special requirements right away.

This saves time and immediately leads to the necessary results. Here our customers find the possibility for extensive trials and analysis to determine all aspects of their cleaning requirements to find the best possible configuration including mechanics (cleaning system), medium (aqueous detergents) and process (electronics and software).



### Amortization and financing

Besides an immediate submittance of quotations we will also provide the basics for:

- Return of investment calculations
- Leasing offers



### Trainings

**Kolb** offers trainings and workshops for the optimization of the processes of our customers and their service- and maintenance teams - upon request with tailored training concepts and certificates for the participants. Trainings can likewise be executed in our demonstration center or directly at our customer's plant.



### Kolb mobile cleaning service

A specially equipped truck rolls through Europe as a mobile technology center with a machine of the customer's choice on board directly to his factory. This allows the operation of both system and detergent on-site and an immediate check of results.

Interested customers thus have the possibility to qualify the efficiency of **kolb** cleaning systems and **kolb** products with their individual requirements directly at their door step.

Like this process data and required system configurations can precisely be determined in the presence of all parties concerned with a possible investment.



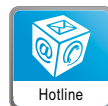
### Disposal

All detergents supplied by **kolb** can also be disposed-off by **kolb**. The products for disposal have to be classified as per their waste classification.



### Service request

You require our support? For agreements / questions via telephone you can reach us under our Hotline +49 (0)2154 / 94 79 - 44, Monday-Friday 8 am to 5 pm If you need a technician, please send us the completed **kolb** service requisition. You will find it in the manual of your cleaning system or please demand the form online under service-request.



### Hotline

Information & Sales: Monday - Friday from 8 am to 5 pm, Phone +49 (0)2154 / 9479 - 38.  
Service & Technical Support: Monday - Friday from 8 am to 5 pm, Phone: +49 (0)2154 / 9479 - 44, Mobile: +49 (0)1783 / 9479 - 44 (German) and - 22 / - 27 (English)



Intelligent energy management is what describes best our patented ENERSAVE technology which allows our cleaning systems to run with the lowest power consumption in comparison to competitor products and delivering a higher power performance. No need for high voltage installations and no need to take extra security measures - not to mention the significant savings of energy costs.



The WATERSAVE certified ClosedLoop and Cross-Loop technologies of kolb help saving water by recycling contaminated and wasted rinse fluids. All our PCB cleaning systems are equipped by default with an integrated ClosedLoop processing for cleaning and rinsing media, ensuring multiple cycles with minimum losses. Special CrossLoop processing systems help to even increase this performance.



The 5-Star SAFEGAR guarantee from kolb ensures that all safety relevant devices e.g. 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 etc. are standard with all kolb cleaning systems and are included in the machine base prices.



The kolb EASOTECH construction assures the easiest state of the art technology with the easiest possible handling on site. The process stability, speed, compactness, durability and cost-effectiveness of our systems are based upon complex engineering as well as upon comprehensive software design. All you have to do is push one button only, to make these sophisticated technologies work in their daily business.



Management System  
ISO 9001:2008  
ISO 14001:2004

www.tuv.com  
ID 9105059028

Kolb Cleaning Technology GmbH is DIN ISO certified already since almost 10 years. Regular internal examinations and audits from external consultants help us to assure our high manufacturing and quality standards.



Kolb analytic-laboratory and demonstration center

The kolb demonstration center allows you to test all kolb systems for your specific cleaning requirements. In this center as well as in the analytic laboratory and in our mobile truck demo center we are continuously running test trials for customer orders and for our new product developments.

Our company is located close to Düsseldorf with easy access by road or public transport. If you wish to get information on location we would look forward to meeting you here. Please contact us on the telephone or fax numbers mentioned below or via e-mail to arrange an appointment.

Your local kolb partner

**DAVUM**  
**TMC**

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