

Cleaning Systems

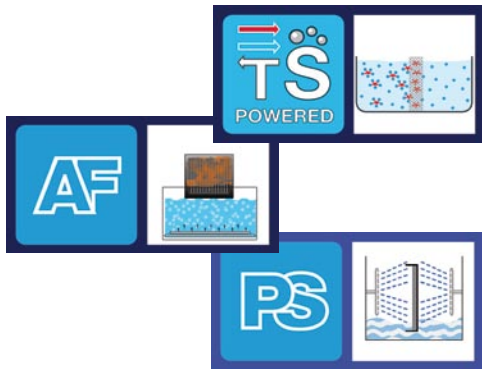
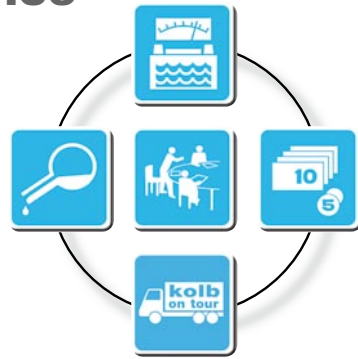
for Electronic Manufacturers

NEW



Engineering

**Process-design
& Service**



Technology development

Cleaning chemistry



CLEANING TECHNOLOGY

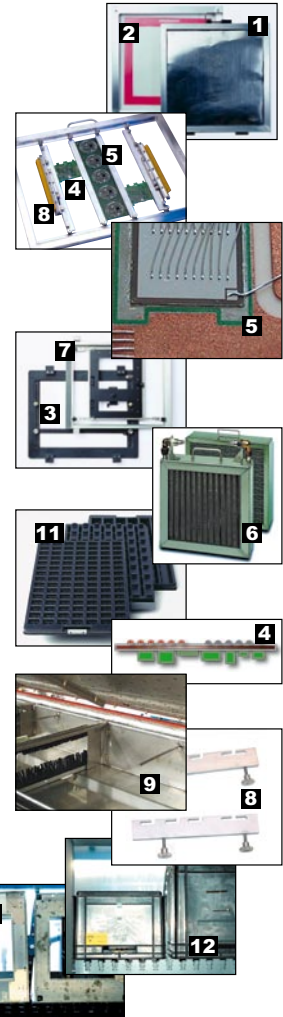
NOTES

CLEANING IN ELECTRONIC PRODUCTION

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

Segment	Goods to be cleaned	Contamination				
		SMD-Adhesive	SMD-Paste	Flux (Colophonium condensation)	Flux (Colophonium residues)	Dust / oil / grease
FINE-CLEANING	Screen/PumpPrint-Stencils ¹ ₂ ₃	X	X			
	Solder carriers / masks ³				X	X
	Misprints (PCB's) ⁴	X	X		X	
	PCB ass. / DCB's / Hybrids ⁵				X	X
MAINTENANCE-CLEANING PARTS-CLEANING	Condensation traps (Filter, radiators from convection reflow ovens) ⁶			X	X	X
	Reflow oven (Process zone) ⁷				X	X
	Solder-frames ⁷				X	X
	Squeegees, scrapers ⁸	X	X			
	Machine parts (Flux unit, sheet metal, pumps, etc.) ⁹			X	X	X
	Process chamber (Soldersystems) ⁹			X		X
	PCB-storage racks / trays ¹⁰ ₁₁				X	X
	ESD-boxes / container ¹²				X	X
	Other machine parts ¹²	X	X	X	X	X

Applications



The up to date cleaning requirements:

- Reproducible quality
- Flexible versatile systems
- No extra safety area required
- Production tools can be reused quickly
- Ecological safe process
- Aqueous cleaning detergents
- Cleaning fluids that clean fastly and thoroughly without residues

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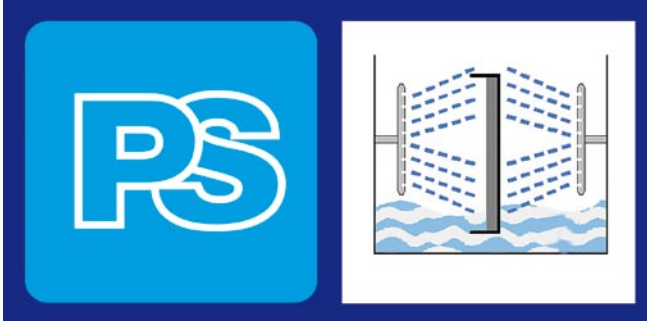
START-UP PRO'S FOR FINECLEANING

1-chamber single-function systems PS03 and PS31

Stencil cleaning in short cycle times. High process stability at a very good price

FINECLEANING

The PowerSpray® cleaning principle



For surface cleaning and the optimum cleaning of apertures / perforations of stencils and PCB's: **PS** systems with **PowerSpray®** technology, using mobile spray devices, high volume pressure and aqueous cleaning detergents, requiring no extra safety area.

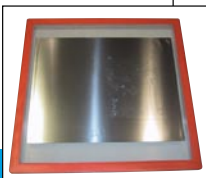
Best possible cleaning of stencils today is the prerequisite for a reproducible quality in electronics and solar cell production. The trend is the installation of highly automated, quick, cost-saving yet efficient and reliable processes. The development of **kolb PS03** and **PS31** systems with **PowerSpray®**-technology take this into consideration even for smallest applicable quantities.

PS03 and PS31 in short:

- 2-tank-system with one communicating detergent
- Fully automatic looped 3Step (PS03) or 2Step (PS31) process
- Short process time (typical: 15 mins), depending on contamination and detergent
- Space saving air-lock door, small footprint (< 1m²)
- Stainless steel made with all process sections made of electrolysis-resistant materials
- Positioning close to the screen printer possible
- Processes and filter saturation PLC controlled
- **Closed loop.** No water or water disposal connection
- For cleaning products up to 31,5" x 37,5" / 800 x 950 mms

Further information: www.kolb-ct.com

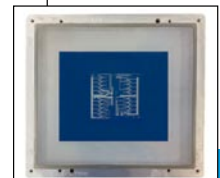
Cleaning system PS03
for screen-stencils, PumpPrint stencils or solder carriers
Fully automatic
Warm air drying with VA super-charger
Low maintenance cost, short cycle times



Stencil



Cleaning system PS31
for screen-stencils, solder frames, misprints (small quantities)
Fully automatic
Compressed air drying
Low investment and running costs



Screen

NOTES

THE SPECIALISTS FOR FINECLEANING

PS07 and PS07 twin - From stencil to misprint

For screen-stencils, PumpPrint-screens, misprints and solder carriers

FINECLEANING

Efficient cleaning of stencils (in electronics and solar cell production) is not only a prerequisite of a reproducible quality in production but is likewise important to guarantee shortest possible standstills. According to lean personnel management the industry expects state of the art high quality systems, which are nonetheless easy-to-handle, fast and guarantee process stability. The **kolb** PS07 and PS07 twin incorporate all these features. With today's solvent-free aqueous detergents with hardly any unpleasant odors, the systems ensure highest efficiency and allow a widest possible process window.

Both systems are technologically almost identical. However the PS07 twin has a double loading opportunity (2 stencils in one cleaning cycle) and is therefore optimally applicable for large-scale production. Extremely short cycle times (average for SMD-paste contaminated stencils: PS07 app. 12 mins, PS07 twin app. 7 mins) ensure a quick return of the cleaned stencil to the production.

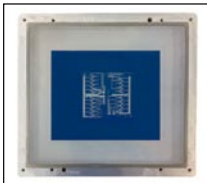
The PS07 and PS07 twin in short:

- Fully automatic 4Step process with cleaning, MediumWipe®, rinsing and drying with a volume high pressure spray rotor system (all rights reserved)
- Products up to 32" x 29" / 820 x 736 mms (PS07)
- Products up to 35" x 32" / 900 x 800 mms (PS07 twin)
- PLC-controlled process and service intervals
- One button handling - **fully automatic**
- Long bath-operating life (= low maintenance cost) due to separate tanks and circuits
- Double tank system with fully separated aggregates for each process
- Automatic re-dosing of detergents possible
- Water-free operation possible: Instead of water, a suitable detergent can be used for the rinsing due to the double tank system
- Made of stainless steel, process relevant sections are made of electrolysis resistant elements
- Installation close to the production possible
- Noise < 70 dB (A)
- Doors with inspection glass into the illuminated process chamber

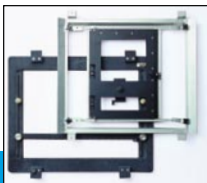
Further information: www.kolb-ct.com



Screen stencils



Screen



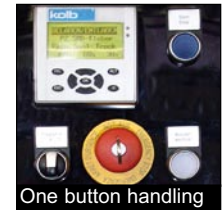
Solder carriers



PS07 twin



PS07



One button handling



Easy maintenance

NOTES

THE HIGH-END SYSTEM FOR ALL PURPOSES

PS09 - Universal system for highest requirements

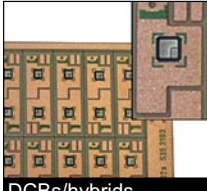
For PCBs, DCBs, hybrids, misprints, PumPrint-stencils, solder carriers and many more

ULTRA FINECLEANING



Assembled PCBs

The PS09 is a multifunctional high-end system, which not only solves sophisticated finecleaning tasks but also delivers best ultra-finecleaning abilities in the fields of PCBs. According to requirements this „all in one“-system is the optimum completion of a high value adding production chain.

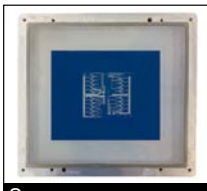


DCBs/hybrids

The **kolb** PS09 universal use cleaning system is equipped with PS pressure spray (PowerSpray®) technology in an innovative multiple-process chamber, which allows for short cycle times with excellent cleaning results. Whether it is waterbased cleaning of PCBs, DCBs or DCB-hybrid substrates, or screen-stencils or PumpPrints, or carriers or masks: The PS09 can deliver best results for all those purposes.



Screens/stencils



Screen



Solder carriers



Technology and functionality are comparable to the **kolb** PS07, built for standard ultra finecleaning tasks.

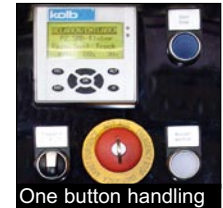
The PS09 in short:

- Fully automatic 4-7Step process with cleaning, MediumWipe®, rinsing and drying with a volume high pressure spray rotor system (all rights reserved)
- Products up to 29,5" x 33,5", 750 x 850 mms
- PLC-controlled process and service intervals
- Long bath-operating life (= low maintenance cost) due to separate tanks and circuits
- Integrated X-Power unit
- Integrated twin-elevator for both DI-clear rinsing and compressed AirJetDryer
- Double tank system with fully separated aggregates for each process - cleaning, rinsing.
- Automatic re-dosing of detergents possible
- Made of stainless steel, process relevant sections are made of electrolysis resistant elements
- Installation close to the production, no special protection
- Noise < 74 dB (A)
- Space saving hemispherical hemispherical sliding door with inspection glass into the illuminated process chamber

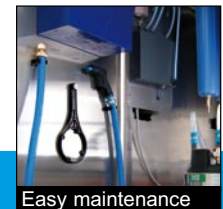
Further information: www.kolb-ct.com



Twin-elevator



One button handling



Easy maintenance

NOTES

HIGH-VOLUME PCB-CLEANING

PSB600 - System with three closed cycles

For PCBs, DCBs, Hybrids and Misprints - compact and energy efficient.

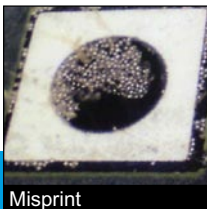
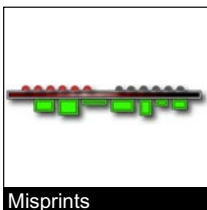
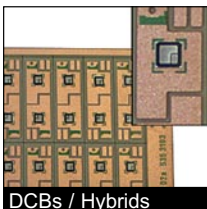
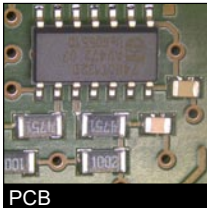
— **ULTRA FINECLEANING** —

The **kolb** PSB600 is a very compact and energy efficient high volume batch-cleaner with integrated high-end process cycles for ultra-fine cleaning tasks which today are part of the value adding chain.

There are many reasons for the global cleaning of PCBs: Preparing for further work processes like bonding, sealing, varnishing, a perfect optical characteristic or fault recovery / value retention of misprints.

kolb PSB600 automatically monitors and controls the designated quality in a 6step process. Especially the cycle time and quality of the DI/VE water rinsing process is controlled and auto monitored via conductance value definition of the ionic contamination.

Duration and grade of drying is monitored separately from the time pre-selection by monitoring the moisture residue.



NEW



The PSB600 in short:

- Fully automatic 6step process cycle: Cleaning, rinsing (tap water), DI-rinsing, DI/VE water cascade processing, DI clear rinsing-2-N, drying with VMH hot air technology.
- Capacity: App. 3 m² or 104 to 176 Eurocards depending on structure and raster.
- Extremely compact: (D80 x W120 x H160 cm) and with energy efficient technology.
- Water conserving three tank circuitry system with separate solenoid pumps and fine filters.
- 4-stage fine filter system 10µm (on demand up to 1µm).
- Degree of dryness monitored by gauging of moisture residue.
- Clear rinsing quality gauged and controlled by backflow contaminations residues.
- Water exchange for rinsing and DI water integrated as well as pump lift.
- Asynchronous three stage spray rotor system avoids spray shadows.
- Process and service intervals SPS controlled and monitored.
- Process control and entries via 5,7" color touch-screen with password levels (Industry-PC with Windows CE).
- DI water cascade processing, re-dosing for 25 l resource container, 5 l additive and heater for cleaning tank as further options.
- Loading in ergonomic and variable VA cleaning baskets - ESD-safe.
- Made of stainless steel, process sections made of electrolysis resistant elements.
- Installation close to the production possible. No special protection necessary.



Further information:
www.kolb-ct.com



NOTES

READY FOR ALL CLEANING TASKS

„Allrounders“: 1-chamber systems PS 04 and PS41

Batch systems for any maintenance and parts cleaning task in electronic production.

MAINTENANCE CLEANING

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, ESD-boxes, PCB storage racks, solder frames and others will permanently be contaminated with SMD-adhesive, SMD-paste, flux, greases, oil, fat, dust and other residues.

The **kolb** PS04 and PS41 have been designed for highest possible operator comfort, easy handling and high flexibility regarding the system configuration. Real allrounders for all requirements of maintenance and parts cleaning. The systems work either with a tap water connection or as closed loop units.

The PS04 and PS41 in short:

- 4Step PowerSpray unit with magnetic coupled pumping system and filtrated warm air drying (patented technology)
- Fully automatic closed-loop 4Step process; cleaning, MediumWipe®, rinsing and drying with high-volume 3-sprayrotor system
- Short cycle times (app. 20 mins) depending on detergent and degree of contamination
- Chamber dimensions PS04: W 850 / H 580 / D 750 mms
- Chamber dimensions PS41: W 450 / H 630 / D 1000 mms
- Space saving air-lock door with inspection glass into the illuminated process chamber
- PLC-controlled process and service intervals
- 3-stage double fine filter system (25µm) for cleaning as well as for rinsing
- Water-free process possible: the double tank closed-loop system allows the use of a detergent for rinsing instead of tap water
- Integrated pump-out unit for the rinse tank
- Tailor-made product fixtures for the process chamber
- Made of stainless steel
- Exhaust control with motor driven automatic flap valve
- Sewage water preparation to fulfill legal requirements PS 04
- Auto-redosage possible
- Simple maintenance
- Installation close to the production possible
- Noise < 70 dB (A)
- Loading cart and more options and accessories available

Further information:
www.kolb-ct.com



Solder carrier



ESD boxes



Storage racks



Re-dosage



Water prep. PS04



Loading cart

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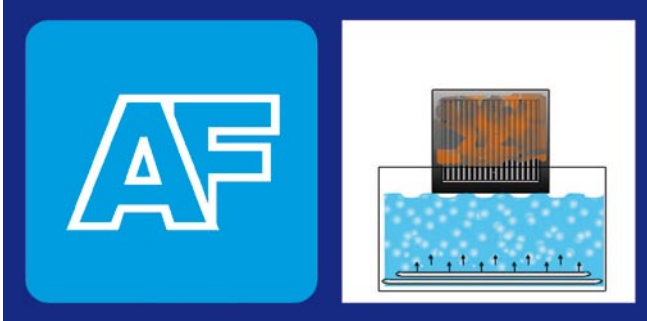
SOLDER FRAMES AND CARRIER CLEANING

Plug & Work systems AF04 and AF03

For solder-frames, carriers and condensation traps with very short cycle times

MAINTENANCE CLEANING

The „AirFlow“ (AF)-Cleaning principle:



For superior requirements in maintenance cleaning: **AF** flood-immersion systems with **AirFlow**®-technology, where 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.

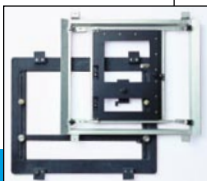
The **kolb** cleaning system AF04 operates in a three chamber mode, which allows for extremely short cycle times, working in parallel through the processes of cleaning, rinsing and drying in a minimum timespan. The **kolb** AF03, is a very favourably priced small AirFlow®-system for condensation traps, solder frames and many more. With cleaning and rinsing tank and drip tray. A very modern and efficient alternative to old fashioned manual cleaning.

The AF04 and AF03 in short:

- Customizing of solder-frame and carrier fixture possible
- Low running costs for the cleaning systems
- Low maintenance
- High economic efficiency
- Special system sizes on demand
- High cleaning efficiency: cycle time only 15 - 20 mins
- Drying with HotSpeed dryer (only AF 04)
- No exhaust required
- Process chambers made of electrolysis resistant elements

Further information: www.kolb-ct.com

Cleaning system AF04
System with cleaning, rinsing and drying chamber
Capacity: 6 to 9 solder-frames size up to 610 x 470 mm
Ready to connect (plug & work).



Solder carrier, -frame



Cleaning system AF03
Small two chamber system for 2-6 solder carriers and condensation traps including drip tray and storage cabinet
Ready to connect (plug & work)



Rehm filter

NOTES

FOR SOLDER FRAMES AND FILTERS

AF15 - Fully automatic one chamber dipping system

Cleaning (pressure flow round), rinsing (pressure flow round), drying (warm air)

MAINTENANCE CLEANING

In electronic manufacturing clean production tools are the basic requirement for high quality production standards. Solder frames and carriers from selective soldering machines have to be cleaned on a regular basis, to ensure functionality with the necessary quality. Up-to-date reflow-soldering systems very often have flux management systems (cooling unit, filters, heat exchangers, containers / plates) which during operation will be subject to contamination (flux / colofonium). Thorough cleaning helps to regain proper functioning.

In the fully automatic **kolb** AF15 dipping system the goods are cleaned, rinsed and dried in one single process chamber, which is empty during the loading (no contact to the detergent). After placing frames or filters into the chamber it is pressure flooded with fine filtered cleaning fluid from a separate tank through a PLC-controlled process.

After the goods are cleaned with the successful AirFlow®-technology, the likewise filtered rinsing media, e.g. water, is pumped into the process chamber from another separate tank. After the goods are pressure rinsed and the rinse media is pumped out they will be dried through a HotSpeed warm air dryer unit, integrated in the covering cap of the system.

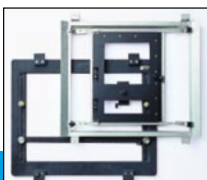
The AF15 in short:

- Customizing of solder-frame and carrier fixture possible
- Loading and unloading in an empty process chamber
- High cleaning efficiency
- Short cycle times
- Fully automatic process: cleaning - rinsing - drying
- Cleaning circulation with separate fine filtering
- Rinsing circulation with separate fine filtering
- Rinsing circulation with automatic water exchange
- Filter pressure PLC controlled
- Maintenance and operation events PLC controlled and displayed
- Rugged casing made of stainless steel
- Process relevant sections are made of electrolysis resistant elements
- Security shut-down with open cleaning module
- Plug & Work system (connect, fill, start)
- Optional heater for cleaning and rinsing
- Optional exhaust control with motor driven automatic flap valve and optional reservoir
- Optional auto re-dosage of detergent

Further information: www.kolb-ct.com



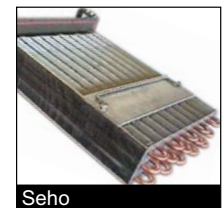
Soldering masks



Solder carrier, -frame



Rinsing filtercircuit



Seho



Rehm filter

NOTES

FLUX MANAGEMENT CLEANING

Modular systems AF08 and AF09

For solder carriers, condensation traps and external containers / cyclones, tubings

MAINTENANCE CLEANING

Up-to-date reflow-soldering systems very often have flux management systems (cooling unit, filters, heat exchangers, containers / cyclones, plates, tubing) which during operation will be subject to contamination (flux / colofonium). Thorough cleaning helps to regain proper and reliable functioning.

The AF08 und AF09 modular systems now offer Plug & Work (connect, fill, start) machinery with high cleaning efficiency and short cycle times. In addition AF09 systems allow, using the new **PulseFlow**[®] cleaning technology, the cleaning of external containers and tubing. The PulseFlow[®]-unit uses via PLC-controlled valves the detergent contents of the AirFlow[®]-unit for the cleaning and rinsing of external containers and tubing. All systems can be installed close to the production.

The AF08 and AF09 Single in short:

- 2-stage cleaning detergent, supersedes rinsing and active drying
- Skimmer filtration, pre-equipped for external exhaust
- 3-stage filtration
- Rugged casing made of stainless steel
- Process relevant sections made of electrolysis resistant elements
- Automatic cage lift system for easy loading and unloading

The AF08 and AF09 3Mod and 4Mod in short:

- Two technologies (AF & PF) in one system (AF09 only)
- Cleaning module 1 - cleaning
- Cleaning module 2 - only AF08 and AF09 4Mod (for different cleaning goods or different detergent)
- Rinsing module for rinsing with water
- Drying module with fourfold warm air / HotSpeed unit
- Chamber dimensions: W 900 / H 450 / D 319 - 610 mms
- Skimmer filtration, pre-equipped for external exhaust (Modules: Cleaning)
- Permanent 3stage cascade-filtration (Modules: Cleaning, Rinsing)



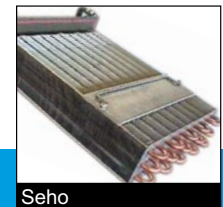
AF08 3Mod

- PLC control and monitoring of cleaning process and maintenance intervals
- Filter pressure controlled by PLC and pressure differential display
- Short cycle times
- Security shut-down with open cleaning module
- Noise: < 65 dB (A)

Further information:
www.kolb-ct.com



Soltec



Seho



Rehm-cyclones



AF09 Single



Rehm filter

NOTES

Treatment systems for DI-water and waste water

Supply for cleaning systems before and after the cleaning process

CUSTOMISED

A closed rinse water circuit can be mandatory depending on the signed task of a cleaning system. As a general rule these are systems for cleaning of assemblies (PCBs / DCBs / hybrids) or also for maintenance cleaning (solder frames / carriers etc.).

Kolb DI250 is a fully integrated rinse DI-DS-water preparation system. The use of process water / DI-DS-water is indispensable for the rinsing loops of cleaning systems used for the cleaning of PCB / DCB / hybrids. Already with a consumption of >100 liters of process water / DI-DS-water with a conductivity of < 5µS such water quality should be - for economical reasons - produced using a reverse-osmosis technology.

Kolb DI250 has a buffer container of 250 liters capacity and is able to supply several pre-connected cleaning systems. As option this buffer container can be equipped with a heater and a circulation pipeline. **Kolb DI250** operates in four stages: 1. Softening unit, Reverse-osmosis unit, Desalination unit (tank 1, 250l), DI / DS-water buffer (tank 2, 250l).

The DI250 DI-DS-water preparation in short:

- Fully-automatic process
- PLC-controlled process- and maintenance intervals
- Integrated pump-out system concentrate to the sewerage network
- Reverse-Osmosis plant 200l/h, extendable to 400l/h
- UV-treatment double loop
- Fine filtration in all process loops
- Automatic double desalination with brine buffer tank
- Maintenance access easy through door in the system front side
- Stainless steel construction of the housing



Kolb AA500 is a fully integrated rinse water treatment system to which multiple rinse water circuits from several upstream cleaning systems can be connected. With the AA500 system rinse water with a too high heavy metal content of lead, tin, silver and copper will, including pH-value regulation, be purified to such an extent that it complies with statutory provisions and thus can be discharged into the public sewage network.

AA500 rinse water treatment in short:

- Fully automatic process cycle
- Collecting tank for 500 litres
- PLC-controlled process and service intervals
- Integrated pump-out system to the sewerage network
- Automatic dosage of the suspending agents
- 7 filter stages as well as several absorber cartridges
- Process container 2 and 3 each with 500 litres tanks
- Maintenance access via front doors
- Stainless steel construction of the housing
- Footprint element 1 and 2 incl. reservoir:
Width = ca. 4.020 mms, depth = ca. 1.600 mms,
height = ca. 1.720 mms, height incl. exhaust / status light = ca. 2.264 mms

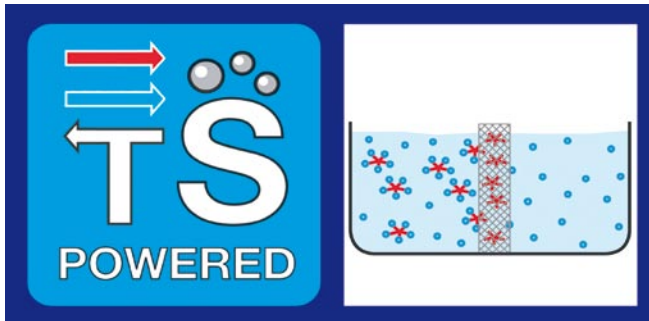
Further information: www.kolb-ct.com



NOTES

High efficiency, aqueous, ecologically safe

The TernarySequence® (TS)-Technology



The TernarySequence (TS) denominates a technology developed by **kolb** which makes it possible to equip quality detergents with an extremely high ability of regeneration in process 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. The technology allows the contamination particles to intermix homogenously with the detergent, which then can be regenerated, without the need for a phase mixing first, with only one simple filtration step necessary. Likewise TS-cleaning detergents can virtually be used in every cleaning system with different technologies and with a basic filtration only.

Detergents for fine- & ultrafine-cleaning

For SMD adhesive, SMD paste, colophonium and flux.

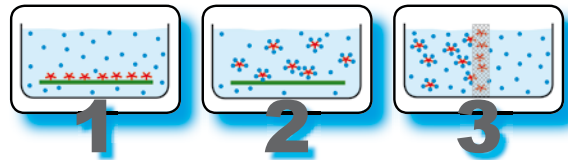


MultiEx N8 CN Water based pH-neutral broadband-cleaning concentrate for stencils, misprints, PCBs, aluminium, stainless steel etc.



MultiEx VR RM Water based alkaline ReadyMix for e.g. PCBs, ceramic substrates, misprints, stencils, aluminium, stainless steel etc.

TS® Technology powered detergents



Sequence 1: Elimination of particle adhesion

Sequence 2: De-activation of particles

Sequence 3: Filtration / Regeneration



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



MultiEx B11 CN / RM Water based alkaline broadband-cleaning detergent for stencils, misprints, PCBs, aluminium, stainless steel etc.



MultiEx A12 RM Water based alkaline broadband-cleaning ReadyMix for mounted PCBs, misprints, solder frames/solder carriers, machinery parts, magazines, aluminium, etc.



MultiEx GC RM pH- neutral cleaning ReadyMix cleans particularly SMD-glue (GlueCleaner) from stencils, as well as silver and aluminium-paste from screens.



MultiEx 3D RM Water based 3-dimensional detergent ReadyMix cleans DCB-substrates / PCBs, ceramic substrates, copper, nickle, aluminium, stainless steel etc.



WipeEx SA 120 Water based pH-neutral cleaning ReadyMix for the automatic under-screen cleaning in screen printers with fleece.

NOTES

High efficiency, aqueous, ecologically safe

The ISO EN 14001 environment-management system obliges manufacturers to reduce energy consumption and waste as well as to minimize pollution. As a result of special tests and experiments **kolb** is able to offer aqueous cleaning detergents and additives, which are cleaning process optimized and meet today's and future demands of efficiency and ecological standards. Your advantages:

- High efficiency
- No unpleasant odor
- No explosion proof area
- Can be placed in the production area
- Wide spread application
- CFC's and CHC's free
- Easy waste disposal



For maintenance- and parts-cleaning

For flux residues, colophonium condensation, grease a.m.m.



ContraFlux CN Water based alkaline broadband cleaning concentrate for solder frames, solder carriers, machinery parts, aluminium, stainless steel etc. (for AF®-systems)



ContraFlux BC CN Water based alkaline broadband cleaning concentrate for solder frames, carriers, magazines, machinery parts, aluminium, GRP, PCVs, etc. (for AF® and PS®-systems)



ContraFlux FM RM Water based alkaline ReadyMix cleaning detergent for flux management systems cleaning stainless steel, aluminium, etc.



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



CF 1 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 machinery parts from SMD-ovens, wave-soldering machines, machinery parts etc.



INOX VA Stainless Steel Cleaner Water based pH-neutral cleaning ReadyMix for manual cleaning of stainless steel with a cloth.

Special additives for **kolb** detergents

For optimization and disposal



AntiFoam Water based pH-neutral silicone-free foam regulator for **kolb** cleaning detergents. Surface active single-compound antifoaming agent which can be rinsed residue-free.



DIS 10/4 Water based pH-neutral additive (dispersieradditive). Cleaning enhancer for the cleaning of flux and colophonium.



EL50 Water based neutral silicone-free air extracting and antifoaming agent. Efficient with foam built-up due to contamination in the detergent / water mixture.



pH Reducer Waterbased neutralising concentrate. Reduces the pH-value of a saturated detergent or rinse water to a level of approx. 6-8 and thus enables an environmentally friendly disposal.



WaterStabilizer Water based pH-neutral stabilizer. Extends the life span of the rinse water by 5 to 10 times to preserve the rinse water.

NOTES

Clever solutions - the answer to customer demands

The accessories of the **kolb** cleaning systems originate mostly from consultation with our customers who see cleaning as a part of an optimized efficient production process. Below is a small excerpt of our program:

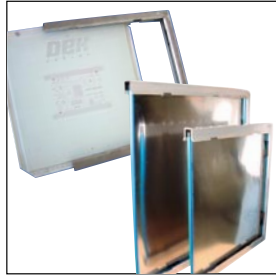
Cleaning Carrier

for cleaning frameless printer screens / stencils.



Universal Carrier

for cleaning incorrectly printed PCB's, squeegees and scrapers.



Adapter-washing frame

- PumpPrint screens
- DEK Vector-guard



ServiceCase SC100

to test with special refractometer correct mixture rate of regenerative cleaners.

ServiceCase SC200

for the completion of the process control.

The **kolb** accessories program offers a wide range of options and parts; from handling systems, reservoirs, cleaning frames to pH-value tests which make the cleaning process easy, clean and quick. Any part of this program can either be installed prior to delivery or retrofitted at customer site.

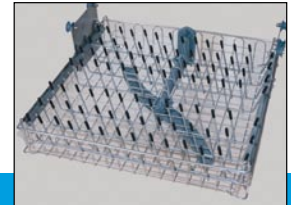
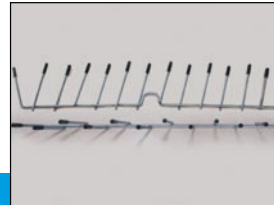
Service storage cart

Used as service area e.g. for placing of PCBs into LF-carriers fixed on the cart. The width is adjustable. The storage space accepts 11 stencils / LF-carriers and has 6 separate storage compartments for all kinds of parts.



Cleaning baskets

ESD safe slide-in baskets and dividers for the **kolb** PSB600. The dividers can be arranged in such a flexible way that the maximum amount of PCBs can be cleaned within one cleaning cycles.



NOTES

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-discipline 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 product improvements or incorporate new requirements into the concept.



Analysis / Laboratory

We analyse 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 or laboratory can offer.



Demonstration Center

In our Demonstration Center we can simulate all processes of our machines in 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 in extensive trials and analysis to determine all aspects of their cleaning requirements to find the best possible configuration including mechanics (cleaning system), medium (aqueous detergent) and process (electronics and software).



Amortisation 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 its 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 customers plant.



Kolb Mobile Cleaning

A specially equipped transporter rolls through Germany and Europe as mobile Truck Technology-Center with a machine of the customers's choice directly to his factory and allows the demonstration of both system and detergent on-site. Interested customers thus have the possibility to verify 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 a.m to 5 p.m. 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 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 - german: +49 (0) 1783 / 9479-44, Mobile - english: +49 (0) 1783 / 9479-22.

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