

Ecological washing center in innovative cooperation

Process stability through cleaning

Lean management, focus on sustainability, automation, digitalization and industry 4.0 – the Siemens equipment plant in Erlangen has been a pioneer when it comes to making developments and processes efficient. Recently, this also includes an internal solution for maintenance cleaning and wastewater processing in order to avoid long transport routes and to reduce hazardous waste.

» kolb CLEANING TECHNOLOGY GmbH, Willich & Siemens factory, Erlangen

Up to 1,000 product variants of Sinumerik CNC controllers and Simotion motion control systems as well as Sinamics frequency converters are developed and manufactured in Siemens Erlangen. A portfolio that requires flexibility, but above all process stability. Part of this process stability is, among other things, also achieved by thorough cleaning of the tools and the production equipment. The right cleaning process can prevent production failures and additional costs. "Siemens technologists take a holistic view of production processes", says Siemens project manager Peter

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Maintenance cleaning for condensate filters

For more than 30 years, cleaning systems from kolb CLEANING TECHNOLOGY GmbH in Willich, Germany, have been used in the various Siemens plants and reliably handle a wide variety of cleaning tasks and, as a fully-fledged production step, help to guarantee the stability of the manufacturing. As the inventor of aqueous system cleaning in the electronics industry, among other things, kolb complies with both the economic as well as ecological requirements of Siemens.

Therefore, when searching for the perfect cleaning system for maintenance cleaning of the condensate traps of eight Soltec reflow ovens at the Erlangen equipment plant, the decision for the manufacturer and partner for Peter Weiland was made quickly: kolb!

In the kolb AF75 system, the cleaning good is cleaned, rinsed and dried in one process chamber.

The fully automatic AF 75 single-chamber cleaning system is specially designed for the volume cleaning of components from flux management systems from reflow ovens



Bild: kolb



The condensate filters from the reflow ovens are loaded into a washing basket and lifted into the empty process chamber by a crane, so that there is no manual contact with the cleaning medium. After inserting the cleaning goods, the chamber is filled with fine-filtered cleaning detergent from an external 1,000 IBC container. After that the cleaning good is cleaned with the patented AirFlow process from kolb.

The rinsing medium, e.g. water, is pumped from a second container in a closed-loop process, also filtered, into the process chamber where it rinses the material to be cleaned. The Closed Loop process is an integrated circulation process for multiple use of the cleaning detergent and the rinsing water, so that consumption and operating costs are significantly reduced. Drying takes place via a 3-fold hot-air drying module, integrated in the process chamber cover.

Economic and environmentally responsible process water treatment

In addition to the AF75's standard water and media saving technologies, Siemens gave kolb the task of integrating a water management system into the process for environmentally friendly and cost-effective indirect discharge of the rinse water into the public sewer system.

The module uses a process developed and patented by kolb for metal precipitation from alkaline rinse waters with high dissolved or undissolved heavy metal contents such as lead, tin, silver and copper.



The condensate traps of eight Soltec reflow ovens are cleaned by the kolb cleaning system, saving costs and resources



Bild: kolb

kolb Sales Manager Germany Bert Schopmans (left) and Siemens Project Manager Peter Weiland (right) agree on the win-win situation.

After previously run-in processes, the WPSD-IU treats the rinsing water of the cleaning system in such a way that it can be indirectly discharged in compliance with the legal requirements and limit values (§ 151, Attachment 40 WHG, paragraph 7a, Water Resources Act).

After the installation work on site at the Erlangen plant, the kolb system successfully started up in May 2021. In April 2022, just under a year later, the detergent was due for replacement for the first time.

"Thanks to the long cooperation, we knew that we could rely on kolb in all aspects. Whether it's special requests for machine configuration or our requirements for the most environmentally friendly solutions possible, the cooperation is always productive and efficient," says Peter Weiland.

kolb's Sales Manager Germany, Bert Schopmans, also smiles: "Siemens' tasks are always a challenge for us. In a positive sense. This way, we too can constantly question and improve the demands placed on our systems. A win-win situation."

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IN A NUTSHELL

For the maintenance cleaning of condensate traps from several reflow ovens, Siemens Erlangen factory found the perfect solution in a fully automatic single-chamber cleaning system.