

AUTOMATED PARTS CLEANING PARTS CLEANING WITH ROBOTS

REQUIREMENTS

In some processes, our equipment can be integrated into the process chain semi- or fully automatically. This is successfully used, for example, in the production of solar elements, flanges, connecting rods and in pipe cleaning, where robots are also used in some cases.

Tubes, for example, can be cleaned very effectively with the aid of a nozzle ring and a device from the 2000 series, which achieves a correspondingly high throughput.

The requirement for a high degree of automation in industrial parts cleaning does not necessarily imply the use of complex cleaning systems with high investments – in some cases it can also be realized in quite simple ways.

OUR SOLUTION: LOW PRESSURE HOT CLEANING AS SPACE SAVING AND LOW-COST CLEANING ALTERNATIVE

ph-cleantec provides solutions that fulfill a high degree of automation while making do with little space.

The proposed technology is based on our low-pressure hot cleaning equipment. The high cleaning performance of the systems is achieved by hot water with a temperature of up to 95°C and a pressure of up to 7.5 or up to 14 bar. The output can be distributed to several nozzles and thus reduced to approx. 3 bar per nozzle. This low pressure ensures that there is no damage to the workpieces, and that there are no splashback effects, so that the system does not require any special housing.

The components can be brought to the cleaning station via simple transport systems and, after cleaning, move on to the next processing steps. Depending on the geometry of the parts, the actual cleaning cell can be very compact.

In a specific case, where connecting rods had to be cleaned in a series production, our unit was converted for continuous operation. The spray guns were replaced by ring nozzles actuated by a slow solenoid valve. The cooling lubricant of the machine tool was used for cleaning. This was circulated, with correspondingly optimum lubrication and corrosion protection properties and minimal costs for procurement and disposal.

Integration into the automation system was achieved by means of a simple control technology, whereby the cleaning device was integrated into the control technology of the system.



Simple parts cleaning system on the basis of low pressure hot cleaning technology

OUR SOLUTION: ROBOTS WITH LOW PRESSURE HOT CLEANING METHOD

Alternatively, a robot can handle the parts or the nozzles. In this case, the robot can work in a dry cell which is connected to an adjacent wet cell via a revolving door or similar device. The actual parts cleaning takes place in the wet cell with a ph-cleantec device, e.g. a 1000 SR.

The parts are placed by the robot on a turntable, rotated through the revolving door under the spray jet, and turned back again after cleaning and cleared away. In such a set-up even robots that do not meet the IP65 requirements can be used.

The cleaning technology can therefore be integrated into existing automation systems with minimal effort.

The process water can be treated using our special sedimentation process and recirculated.



Low pressure hot-cleaner with robot

YOUR ADVANTAGES

- Efficiency/quality: Fast and thorough cleaning. With the right spray accessories, in combination with a robot if necessary, problem-free cleaning even of complex surfaces.
- No damage: Thanks to low pressure, no damage to sensitive parts.
- Extremely flexible thanks to various nozzles; can be used for all types and sizes of (metal) components.
- Simple conception ensures manageable investment with shortest realization time.
- Space-saving system that can be easily integrated into existing layouts.
- Full integration into existing parts transport system.
- Cleaning of parts also possible with cooling lubricant from the machine tool - thus optimum lubrication and corrosion protection properties.
- No splashback, no clouds of droplets, no aerosols; expensive housing can thus be avoided.
- Occupational safety and environmental protection, chemicals: Little or no chemicals required; this protects the environment, increases occupational safety and reduces costs.
- Recycling of process water via special sedimentation process and waste water filtration.
- Overall: Extremely low investment and hardly any running costs, but high efficiency and quality.

SEE ALSO

The video cleaning with robots shows how such systems could work in practice.

[Video cleaning with robot](#)