Preparing for Change

Like all production processes, industrial parts cleaning is subject to constant change. IST spoke with Gerhard Koblenzer, the managing director of cleaning machine manufacturer LPW Reinigungssysteme GmbH, about the driving forces behind the most recent changes, the challenges they present and the measures that need to be taken.

Gerhard Koblenzer, which of the latest industrial trends will have the greatest influence on parts cleaning in the near future?

Over recent decades, the global automotive industry has been the main purchaser of industrial cleaning systems. This key industry has been undergoing increasing changes in recent years across all the world's markets and, in particular, in Europe and China. Europe has played a leading role in developing diesel engines with low CO2 emissions and new advanced petrol engines, but it is currently struggling to overcome a number of problems. These include the issue of particulate matter, the uncertainty and lack of direction in relation to the powertrain of the future and the question of how to manage global trends, such as new production processes, digitisation and autonomous driving. At the same time, we are seeing significant growth in markets where there are increasing requirements for technical cleanliness. Alongside the medical technology, semiconductor and electronics industries, there is also growing demand in more general industrial sectors and, of course, in the automotive industry, all of which have similar requirements to the traditional markets for precision cleaning.

What are the consequences of this for the cleaning machine industry?

The current impact of the situation described above is a significant fall in demand for capital equipment, particularly in the cleaning machine industry. This is accompanied by a growing price war because of the excess supply of equipment available. This is the most important trend and, in terms of the action needed by the cleaning machine segment, it is not related only to one sector of industry. Machinery manufacturers still need specific industry knowledge and must be able to speak the right language. But that alone is no longer enough. Detailed technical knowledge of the cleaning process on the component surface is an increasingly significant consideration and, in particular, the ability to think outside the box with regard to the entire process chain in order to achieve and maintain the required level of technical cleanliness. The cleanliness of parts remains important, but the cleanliness of processes is becoming equally significant.

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"The cleanliness of parts remains important, but the cleanliness of processes is becoming equally significant," says Gerhard Koblenzer, managing director LPW Reinigungssysteme GmbH.

What direction are the markets that are important for parts cleaning moving in? What impact can we expect this to have?
The world is becoming smaller and the requirements of all the three main industrial regions (Europe, North America and Asia) with regard to the technical solutions in the field of parts cleaning are becoming more and more similar. This will lead to an increase in global competition which gives companies from the German-speaking countries, with their ability to innovate and their flexibility, the opportunity to reposition themselves on the basis of new developments and a more advanced process-based approach. This applies in particular to aqueous cleaning systems for parts with complex shapes and contaminant films or a combination of particles and films.

What adaptations do you think the manufacturers of cleaning machines will have to make in the light of changing markets and customer requirements?
Machinery manufacturers will increasingly become service providers and technical consultants. They must use their core skills to provide active support for their customers during this process of change. They will earn their income indirectly via the sale of cleaning machines or the provision of high-quality cleaning services. As a consequence, the employees of the machinery manufacturers working in development, design and production will be faced with increasing technical demands. Many people are talking about the challenges presented by the IoT and Industry 4.0, but the infrastructure that is needed in this area will be developed. Of course, it is up to the industry to supply the applications in this field. This is an important concern for the entire industry, but if we fail to focus on our core business of cleaning, anything else we do will simply be a waste of time.

What is the biggest challenge facing parts cleaning in the immediate future?
Globalisation and recruiting and training the necessary staff in all areas.

Where do you believe the greatest potential for progress lies with regard to parts cleaning, both from a technological and a production perspective?
We can make advances in parts cleaning not only by using robots or introducing new developments in the field of Industry 4.0, but most importantly by answering the new questions relating to process engineering and the requirements of the processes. We need to evaluate existing cleaning and drying procedures to determine their suitability and identify new solutions. We must also coordinate and exploit to the full the interaction between physical and chemical processes. Our cyclic nucleation (CNp) process is a versatile modular solution that can produce amazing results in combination with traditional systems and a detailed knowledge of individual industries. In the field of precision cleaning, it will only be possible to achieve the required results if the production processes are designed to meet specific requirements. This area offers huge potential for operators, machinery manufacturers and service providers and for research institutions. We need to increase the knowledge that is available within the industry.

As a machinery manufacturer, how are you preparing for the challenges that face you?
At LPW, we began investigating the requirements outside the automotive industry seven years ago. By working closely with suppliers in the semiconductor industry we acquired valuable experience of designing processes and fine-tuning cleaning machines to meet the highest standards. We were also able to gain an understanding of the upstream and downstream processes and the role of parts cleaning in the overall process as an active quality gate and to integrate this into our internal workflows. Around four years ago we turned our attention internally to the latest trends and modified our organisational structure and communication procedures accordingly. Fortunately, we were also able to develop new cleaning processes such as CNp.

What advice would you give operators of cleaning machines? How can they equip themselves to meet future challenges?
The changes that are currently underway call for them to focus on the requirements of new products and technologies. Technical cleanliness must increasingly be regarded as equally important as other traditional product properties, such as material or processing quality. Achieving and maintaining technical cleanliness must be seen as a quality-related cross-disciplinary function. As a result, machine operators need appropriately trained and certified staff. Managers with responsibility for fluid management and quality assurance must play a greater role in planning processes. If technical cleanliness and cleaning technology are regarded not just as an interim operation but as a key process task, they lose a great deal of their complexity.

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