
Press release

Purity down to the submicron level

Toolcraft expands process expertise with High Purity Cleaning

Georgensgmünd (D), 29.09.2026: Where even the smallest particles and residues can affect the functionality of a component, technical cleanliness becomes a critical prerequisite for reliable processes. Particularly in sensitive industries such as semiconductor manufacturing, space and satellite technology industries, contamination in the micro- and submicron range can impair the functionality of sensitive components. Toolcraft AG, a manufacturer of high-end precision components based in Georgensgmünd, Germany, is therefore expanding its process expertise to include a broad range of high purity cleaning processes.

From customer requirements to a new technology

The development of High Purity Cleaning began several years ago in response to specific customer requirements, which made it clear that the demands placed on the technical cleanliness of components are continuously increasing. This led to the approach of expanding the company's in-house manufacturing capabilities with a controlled cleaning and packaging process.

"High Purity Cleaning is increasingly becoming an integral part of the manufacturing and quality chain, particularly wherever even the smallest residues can impair subsequent functionality," explains Markus Miehling, Head of Quality Assurance and Technical Cleaning at toolcraft AG.

In September 2024, the official groundbreaking ceremony took place at the company's site in Georgensgmünd. The new building covers approximately 3,000 m², including around 550 m² of ISO Class 6 cleanroom space. The installed systems accommodate components measuring up to 1,500 × 1,700 × 1,500 millimetres and weighing up to 1,200 kilograms. This allows Toolcraft to clean even large and heavy components under controlled cleanroom conditions. With the new facility, Toolcraft is adding a process step to its manufacturing capabilities that is particularly relevant for components subject to stringent technical cleanliness requirements.

Cleaning under controlled conditions

High Purity Cleaning gently and precisely removes microscopic particles, films and residual material from sensitive surfaces without leaving any residues behind. To achieve this, Toolcraft combines wet-chemical and physical processes and precisely adapts them to the materials, geometries and purity requirements of each component. The range of services includes vacuum dry cleaning followed by residual gas analysis (RGA), ultrasonic cleaning in immersion tanks, as well as processes for cooling-channel cleaning and high-pressure cleaning.

Toolcraft closely monitors relevant environmental parameters such as temperature, humidity, pressure and particle concentration throughout the cleanroom process. This ensures consistent and reproducible purity conditions for downstream processes, such as assembly and packaging.

Press release**Highest purity standards for sensitive applications**

Applications for High Purity Cleaning include semiconductor manufacturing, optical payloads, sensors and cameras, infrared and UV instruments, as well as components for space telescopes. According to toolcraft AG, all cleaning processes and inspection procedures undergo validation and are traceable. They also meet the requirements of ASTM E595, a standardized test method developed by NASA to measure the outgassing behaviour of materials under vacuum conditions. As a member of the German Industrial Parts Cleaning Association (Fachverband industrielle Teilereinigung, FiT), the company also continuously aligns its processes with the latest developments and standards in industrial cleaning technology.

Integration into existing manufacturing processes

"We always develop our technologies with the requirements of tomorrow in mind. High Purity Cleaning combines highly precise cleaning with controlled process conditions and opens new possibilities for the most demanding applications. This represents another important building block in our technological development and creates the conditions we need to continue managing complex manufacturing tasks across our process chains in the future," says Christoph Hauck, Member of the Executive Board for Technology and Sales at toolcraft AG.

The new facility in Georgensgmünd provides the spatial and technical infrastructure required to expand the range of services offered by the Middle Franconian manufacturer of high-end precision components. It adds another process-critical capability that sustainably strengthens and future-proofs Toolcraft's vertical integration.

We would be pleased to receive a copy!

Captions

C 1: ISO Class 6 cleanroom at Toolcraft

C 2: Purity down to the submicron level

C 3: Wide range of high purity cleaning processes

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Press release**About toolcraft**

The medium-sized family-owned company, located in Georgensgmünd and Spalt, was founded by Bernd Krebs in 1989. toolcraft is a pioneer of forward-looking technologies, such as additive manufacturing and the construction of customised turn-key robotic solutions. As a provider of comprehensive solutions, toolcraft covers the entire process chain, from the initial idea to manufacturing, quality assurance and testing in the areas of CNC machining, additive manufacturing, injection moulding and mould making. Its clients include market leaders in the semiconductors, aerospace, medical technology, optical, special machinery manufacturing, motor sports and automotive industries. Building close working relationships with collaborative partners as well as universities, other institutions of higher education and research centres is an important part of its corporate philosophy.