Version dated 07.2025
www.arnold-fastening.com

ARNOLD®
BlueFastening Systems



Cleancon®

Technical cleanliness in connection technology

- Significantly higher operational reliability
- Better mounting security
- Less wear and tear
- Longer service life
- Higher quality
- Lower potential for complaints
- Fewer failures of functionally and safety-related components

min.

Particle contamination with CLEANPAC®



CLEANPAC®

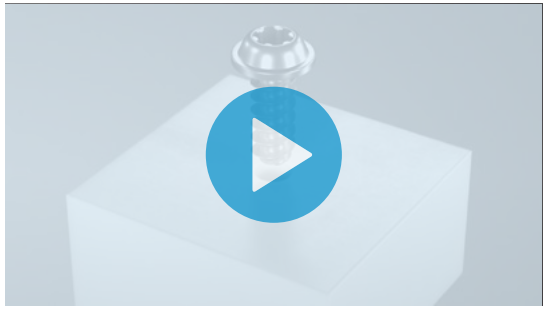
The CLEANPAC® effect

Position-fixing packaging concept

↘ We developed CLEANPAC® to ensure that the parts arrive at your premises as clean as when they left our clean room.
This innovative packaging ensures that the items inside do not move relative to each other during transport. This prevents subsequent particle contamination. CLEANPAC® fixes the finely cleaned parts in their position. Based on the onion skin principle, customized packaging is possible around the antistatic inner packaging.

ARNOLD® BlueFastening Systems

Cleancon®
Greater safety through ultra-fine cleaning



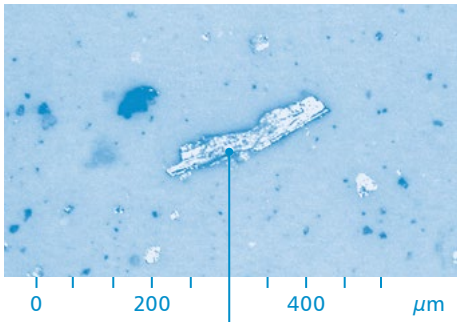
On the trail of dirt particles!

ARNOLD TV PRESENTS ARNOLD TV PRÄSENTIERT

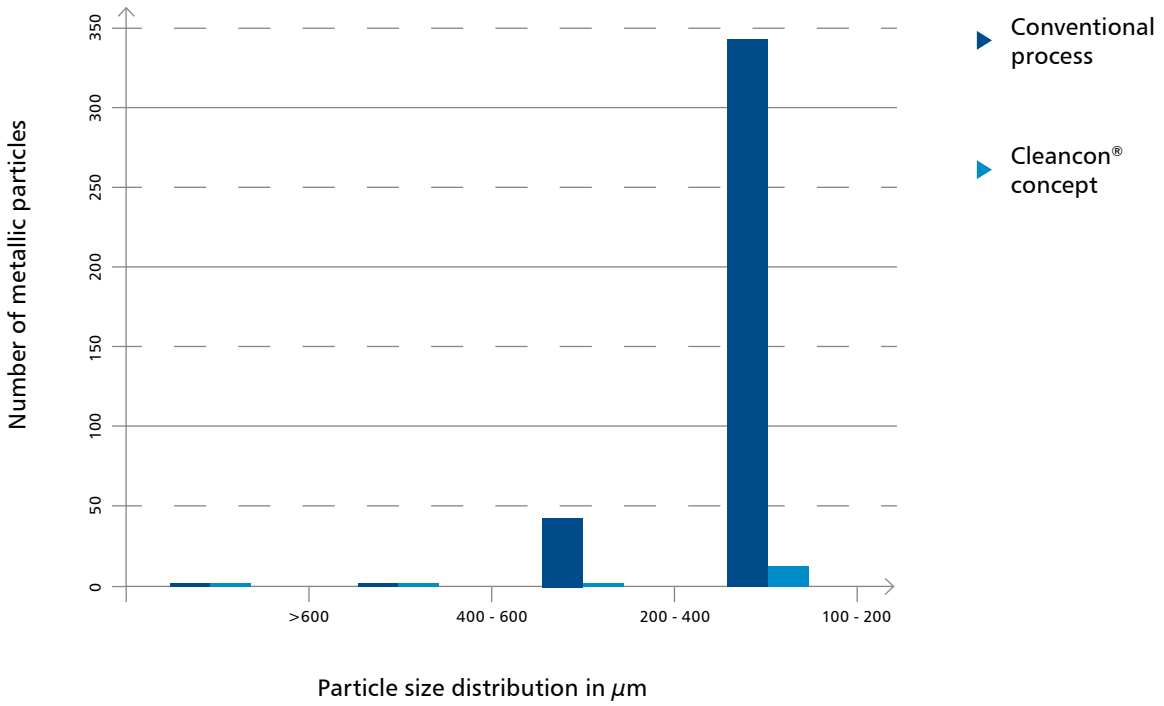
For clean connections: Our solution against particles

Your electronic and hydraulic components are particularly at risk of contamination from microscopic particles. These particles are produced during every conventional manufacturing process. Especially in modern small and compact components, they can lead to the failure of entire systems. To meet your requirements for significantly higher operational reliability, we have developed a special manufacturing process that ensures technical cleanliness in the production of connecting elements.

Microscopic impurities must be identified and eliminated.



Cleancon®
Technical cleanliness starts here



Cleancon® drastically reduces particles

The number of metallic dirt particles in the sizes 100–200 µm and 200–400 µm is significantly higher in conventional processes than in ultra-fine cleaning processes based on the Cleancon® concept.

Step by step to perfect cleanliness



01. Requirements profile

- Definition of limit values
- Environmental considerations
- Surface specifications
- Test specifications
- Packaging requirements



02. Production

- Cleaning processes during production



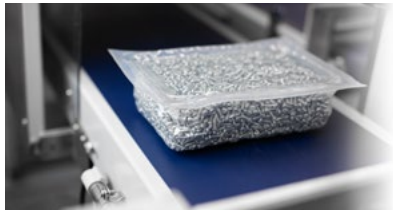
03. Clean room

- Fine cleaning
- Sliding coating (optional)
- Packaging



04. Cleanliness analyses according to VDA 19.1

- Customized extraction process
- Analysis of particle size distribution & gravimetry

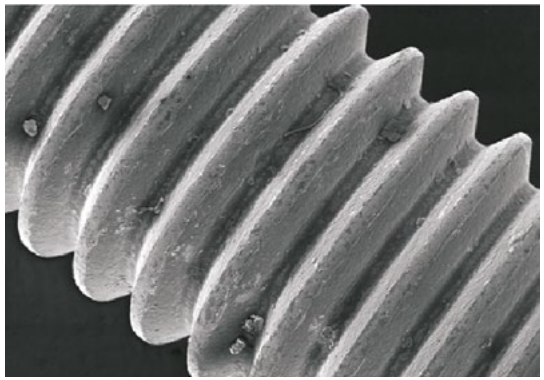


05. Clean packaging

- Position-fixed, multi-layer packaging
- Customizable outer packaging

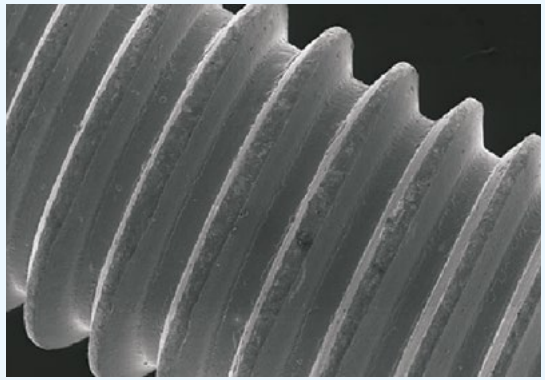
Cleancon®
1:1 comparison

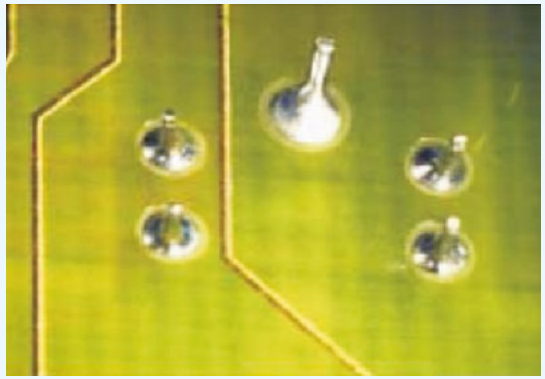
Without fine cleaning





With Cleancon® ultra-fine cleaning

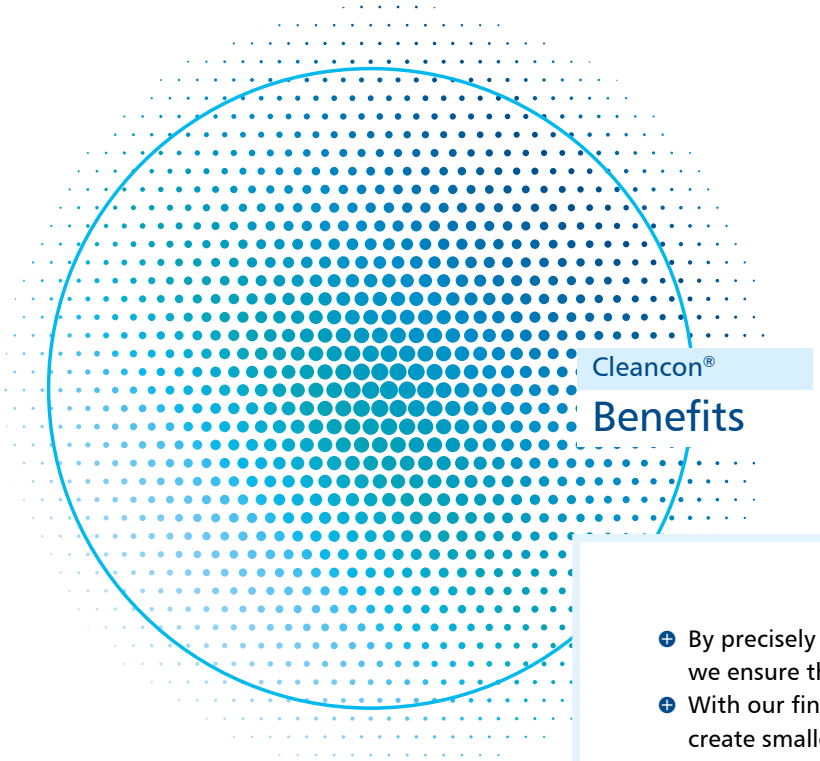




The dirt particles (left) are clearly visible under the electron microscope.

Contaminated connecting elements lead to dirty applications (left), right: a technically clean circuit board screw connection, finely cleaned with Cleancon®.

Cleancon®
brings you clear advantages



Cleancon®
Benefits

- By precisely tailoring our services to your requirements, we ensure the cost-effectiveness of your project
- With our finely cleaned connecting elements, you can create smaller structures and thus achieve higher power density. This allows you to take full advantage of the opportunities offered by component miniaturization
- Since our Cleancon® parts are of significantly better quality, there are fewer complaints for us and for you.

In addition, you benefit from impressive improvements:

- Longer service life for your hydraulic, mechanical, fluid, or other systems thanks to less wear and tear
- Fewer failures of your functionally and safety-relevant components, e.g., your electronic controls

Cleancon®
Technical cleanliness in connection technology



Cleanroom services: cleaning, coating, packaging

Our goal is to meet even the highest technical cleanliness requirements with Cleancon®. That is why we have designed a special manufacturing process that ends with the ultra-fine cleaning of connecting elements in a specially designed clean room. Since we carry out both the optional sliding coating and clean packaging in the clean room, there is no need for downstream process steps that could jeopardize the cleanliness level achieved.

Here we provide the following services for you:

- Ultra-fine cleaning of the manufactured fasteners using state-of-the-art plant technology
- Optional: Application of a lubricating coating immediately after the fine cleaning process
- Clean transport packaging



Our test lab provides you with certainty

Prior to the fine cleaning process, we worked with you to agree on the cleanliness values and thus define the requirements. We can verify and validate the results in our own test laboratory. There, we have access to comprehensive, state-of-the-art testing equipment that allows us to perform cleanliness analyses in accordance with VDA Volume 19.1. Using a customized extraction process, we can analyze fasteners, in particular for:

- Particle size distribution by light microscopy
- Gravimetry

ARNOLD is committed as an expert

At the request of the automotive and automotive supply industries, the Fraunhofer Institute for Manufacturing Engineering and Automation IPA in Stuttgart founded the industry association “MontSa” to discuss issues relating to the optimization of clean assembly. As a manufacturer and service provider in the field of joining technology, ARNOLD plays a key role in this context in investigating screw fastening technology from the perspective of clean assembly.

ARNOLD has been actively involved in the revision of VDA 19 and is actively shaping the upcoming regulations.



ARNOLD®
BlueFastening Systems

The ARNOLD GROUP

www.arnold-fastening.com

Wherever customers need us.

ARNOLD – this name is internationally renowned for efficient and sustainable fastening systems at the highest level.

With a foundation of many years of expertise in the production of intelligent fastening systems and very complex extruded parts, the ARNOLD GROUP has developed over a number of years into a comprehensive supplier and development partner for complex fastening systems. With our positioning of "BlueFastening Systems", this development process will continue under a united and harmonised structure. Engineering, services, fasteners and functional parts, together with feeding and processing systems, all from a single source – efficient, sustainable and international.

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