



# MEDICAL

Safe manufacturing for  
safe products

**ARBURG**

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# HERE'S TO YOUR HEALTH!

Traceable and precise production –  
with a reliable partner.

Plastics are used universally in medicine. They are durable, sterilisable, biocompatible and offer excellent insulation. The number of possible applications is growing, because new treatment methods are constantly being developed to improve our lives. For manufacturers of medical products, however, there is only one thing that ultimately matters: continuous quality. This is where ARBURG can help you – with high-quality technology and comprehensive advice for the entire range of materials and processes. You can rely on us!

**WIR SIND DA.**



Source: Horst Scholz GmbH + Co KG

Clean production: focus on the product, patient and user right from the planning phase.

## AT A GLANCE

// Clean, reproducible and economical production is a prerequisite for high-quality medical products. In ARBURG you have a partner who always sees the entire process. We understand our business – with production that takes all applicable standards into account. We work with you to develop your perfect solution concept – and if you wish, we can also find new ways to add value. //

### Highlights

- Clean room-compatible technology
- Practice-oriented digitalisation
- Individual system solutions
- Industrial additive manufacturing
- Comprehensive service range

## Ensuring safety

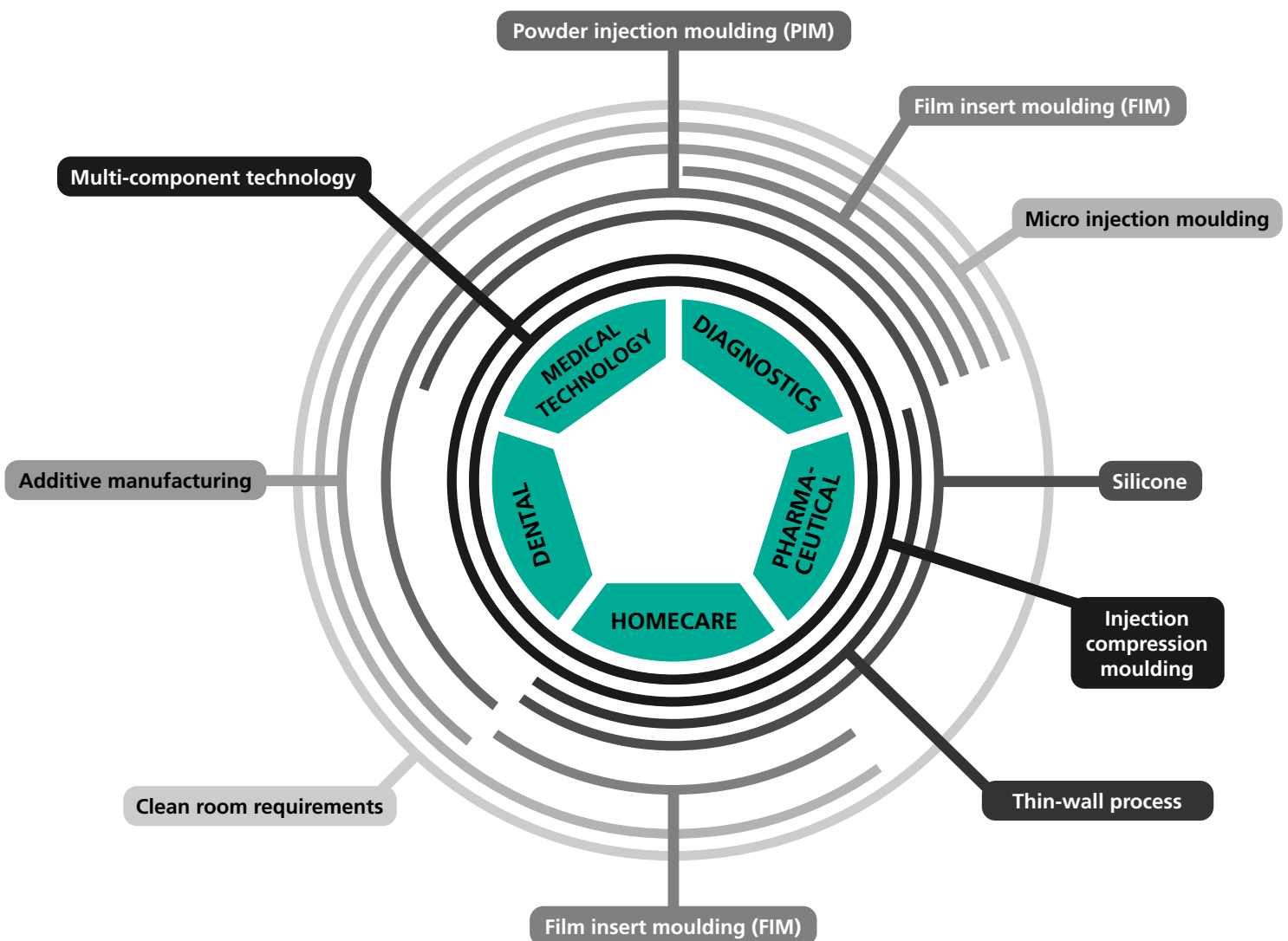
Which guidelines apply to sterile packaging of pharmaceutical products or to accessories for genetic diagnostics? To make a product successful, the correct implementation of all relevant standards and guidelines is important – right from the start. As your competent partner, we consider all relevant guidelines for a specific process validation, so that you have reliable and economical control over every project.

## Enabling innovation

Medical progress constantly requires new production concepts. Whether it is silicone microvalves produced in a clean room or additively manufactured individual implants made of resorbable material. Our interdisciplinary team will support you with expert advice when it comes to implementing demanding processes. Our extensive portfolio enables you to manufacture using the most innovative production solution and to master the most demanding tasks.

## Economical production

High-quality materials are used for applications on or in the body of a patient. The basis for economical and efficient processing of sensitive materials: perfectly coordinated processes and smart machines that autonomously monitor important components. Our intelligent after-sales services enable you to plan your service in advance with detailed proof of calibration.





# WELL THOUGHT THROUGH: PRODUCTION CONCEPTS

// In the medical sector, manufacturing safe products is literally vital. In addition, subjects such as circular economy are becoming increasingly urgent. Our solution is to combine high-quality technology with transparent processes. ALLROUNDER high-end injection moulding machines, combined with smart control management and comprehensive digitalisation, form the basis for continuous high-quality, value-adding production that also takes environmental aspects into account. //





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6000  
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## Qualified injection moulding technology

Low-emission technology in combination with application-specific additional equipment on our ALLROUNDERS can be adapted to clean room conditions. In order to provide seamless certification, we can offer you individually tailored

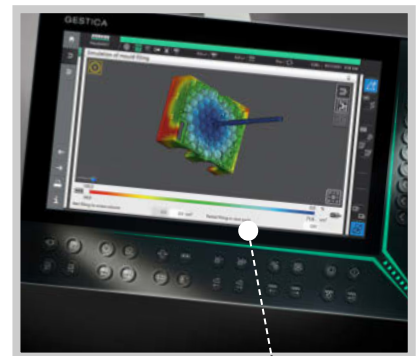
- comprehensive validation documentation
- precise calibration of all components and documentation
- regular re-validation as part of a service contract

## Digitalised processes

A smooth production process is important in order to fulfil requirements for traceability and part quality while maintaining consistently high productivity. Practical assistance packages and other tailor-made Industry 4.0 components actively support you in this regard. The connectivity of our ALLROUNDERS enables the comprehensive provision of process parameters. The result: complex processes become transparent and are seamlessly documented.



Perfectly clean ALLROUNDERS in stainless steel design are ideal for demanding clean room requirements.



Supports validation processes: aXw Control FillAssist visually displays the interaction of parameters.



Further information:  
Clean room technology brochure

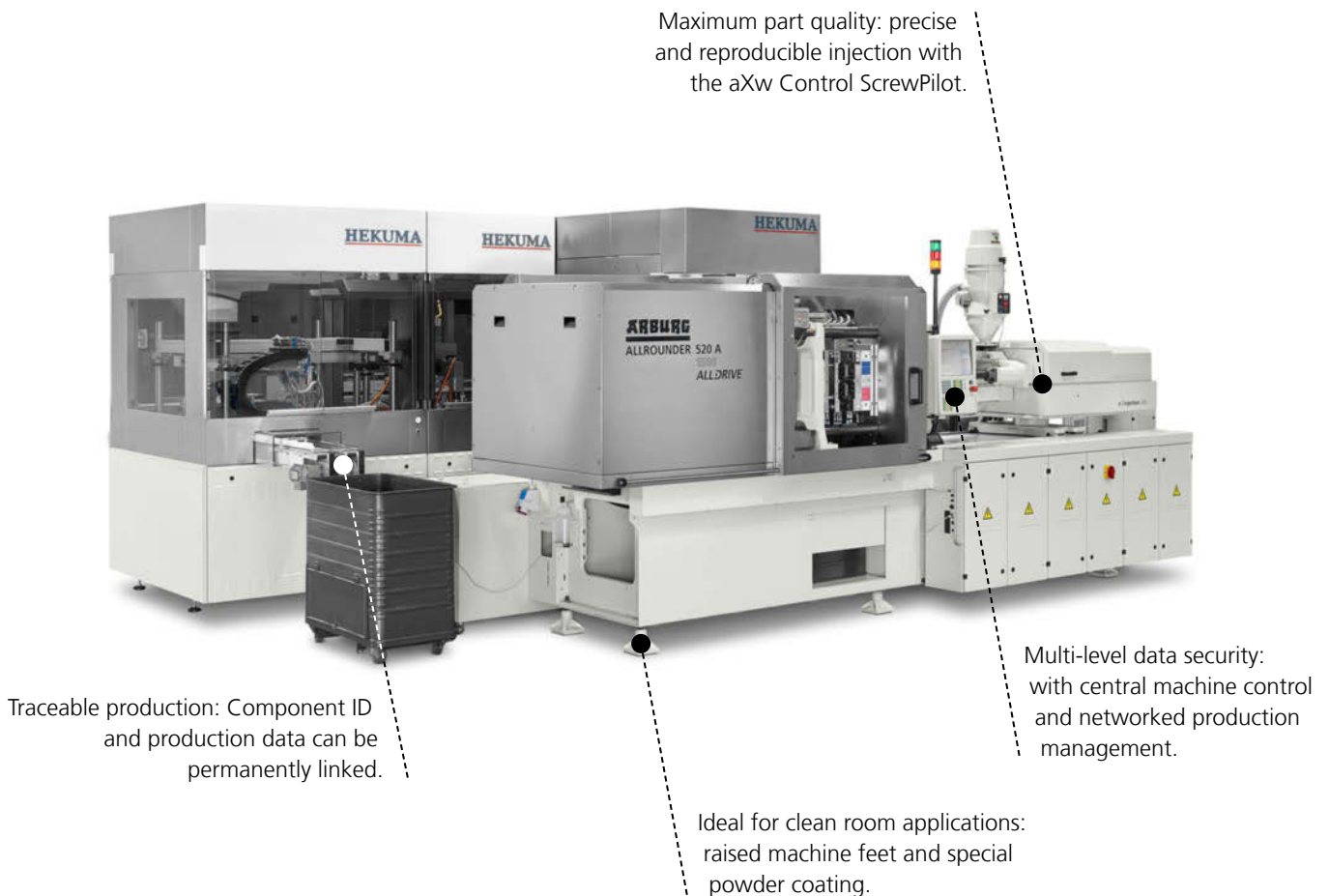


## Individual system solutions

Manufacturing for the medical and pharmaceutical industries requires that all key process data (shot-by-shot traceability) be stored and linked to the end product (UDI). Our turnkey systems will take over the planning and implementation of demanding production tasks, including data management. This means that you will have a single contact person who takes care of all aspects.

## Efficient production management

How can you respond economically to shorter product life cycles and dynamic market requirements? Our ARBURG host computer system (ALS) offers you all the features you need for the efficient organisation and flexible optimisation of your production processes. You can act rather than react – with up-to-date production data and standardized documentation of your production processes.



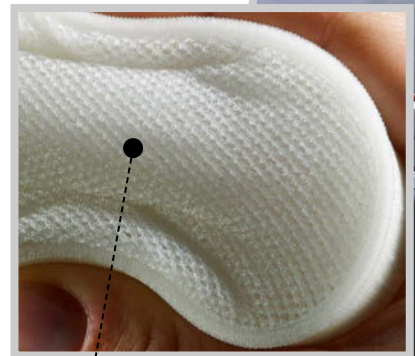
**i** Further information:  
arburgXworld brochure

# UNIQUE APPLICABILITY: PLASTIC FREEFORMING

// With ARBURG Plastic Freeforming (APF), we have developed a completely new approach to the additive production of medical components. A large number of medically approved standard granulates can be processed into three-dimensional functional components. The process also allows hard/soft material combinations to be realised, creating new possibilities that are as individual as human beings! //

## The basis – perfect technology

The freeformer, our open system for additive manufacturing, allows you to manufacture components from a variety of qualified materials. The materials are processed in the same way as in injection moulding – a new technology with no new certification. Its low-emission and compact design allows the freeformer to be integrated into clean room environments.



Controlled additive manufacturing: honeycomb structures made of FDA-certified 32 Shore A soft material can be produced in the stainless steel build chamber with circulating air mode.

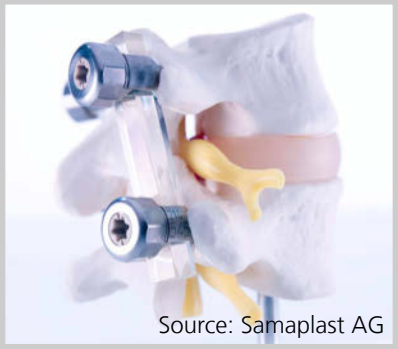
**i** Further information:  
freeformer brochure







Prostheses made on the freeformer: bionically constructed elements and joints manufactured in a single step.



Source: Samaplast AG





# EVERY PRODUCT IS DIFFERENT – BUT YOUR PROCESSES REMAIN CONSTANT.

## **Flexible**

Additive processing of medically approved plastics? Once defined, process settings contain all parameters. Biocompatible, sterilisable and implantable reference materials are documented in our material database especially for medical technology. Our freeformer comes equipped with several discharge units as standard—ideal for manufacturing processes using various colour and material combinations, such as hard/soft combinations. Alternatively, one component can also be used to create supporting structures.

## **Customised**

Additively manufacture implants from patients' CT scans? We have developed our freeformer as an open system so that each individual process step can be precisely adapted to your requirements.

## **Automated**

Additive manufacturing in a complex production environment? Made possible by direct communication between freeformer and peripheral equipment, such as robotic systems. Additional advantage: the additive manufacturing process is documented in a fully traceable manner.

Individual and without the need for a mould: Additive manufacturing of components using data from patient scans.

# PRACTICAL APPLICATIONS

// Achieving top performance every day – by manufacturing labs-on-a-chip, silicone masks, dental drills or additively manufactured implants. With our technology and competent advice, you can be sure that your order will be implemented without errors, even under the strictest demands. This will enable you to produce medical and pharmaceutical products using innovative and bio-based materials, digital process management and our comprehensive after-sales service. And always with energy-saving and economical processes! //

Cap for microswitches  
Micro injection unit processes non-postcuring LSR at 0.072 gram shot weight.



Durable components for hearing aids: precise overmoulding of electronic components.

Pre-filled syringes made of COP material: Flawless overmoulding of inserts and perfect transparency with every shot.



Source: SiO2 Medical Products, Inc.

Fresnel lenses for examination lamps: precise injection compression moulding of ultra-fine structures.



"Ready-to-use" lab-on-a-chip: complex assembly injection moulding using two components.



More than 2,500 dosage cups per hour: low-emission production with perfectly coordinated high-performance technology.



**i** / Further information:  
Turnkey projects brochure



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captivating, entertaining.

**ARBURG GmbH + Co KG**  
Arthur-Hehl-Strasse  
72290 Lossburg  
Tel.: +49 7446 33-0  
[www.arburg.com](http://www.arburg.com)  
[contact@arburg.com](mailto:contact@arburg.com)

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