

Guide to German

Medtech Companies



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Guide to German Medtech Companies



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Guide to German Medtech Companies

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Editorial

Confidence in challenging times

Rarely are short, medium and long-term outlooks as divergent as they currently are in Germany's medical technology industry. For 2022 - i.e. in the short term - the industry expects a nominal 3.5 per cent increase in turnover to 37.7 billion euros, according to the latest figures from the industry association Spectaris. "However, this is not a reason for joy," says Marcus Kuhlmann, head of it's Medical Technology section. "The ability to compete and innovate, and thus the existence of many smaller and medium-sized medical technology manufacturers, is definitely at risk at the moment." Why is that? Supply chain disruptions, the controversial EU Medical Devices Regulation and rising material, energy and logistics costs are increasingly putting a strain on business. For the coming year, the association expects growth to be even "weaker". The industry generates two-thirds of its turnover abroad. In the first half of 2022, exports to Asia fell by 3.7 per cent, mainly because of the Corona lockdowns in China. Exports to North America increased by 8.5 per cent. The industry association expects four per cent growth in exports for the year as a whole, and three per cent nominal growth in the domestic market. The number of employees is expected to rise by three per cent to 159 000.

According to the latest economic survey by the Ifo Institute, however, most companies in the medtech sector expect the business situation to deteriorate in the next six months. 90 per cent reported production being hampered by material shortages, 40 per cent by a shortage of skilled workers – all factors that will also have a negative impact in the medium term. The war in Ukraine and the energy crisis it has triggered will not go away any time soon either. But the very diverse, rather mediumsized medical technology sector has also proven to be very resilient in the past. Entrepreneurial will and skills have been able to make up for many an external burden.

In the long term, the prospects for medical technology are still bright. In the coming decades, the world population is expected to rise from 8 to 10 billion people. As the climate catastrophe shows us, that is far too many for our planet. But until the number of humans decreases significantly, the populations in many countries will first age. And in old age, people are more often dependent on help - this increasing basic need plus the constant medical progress are brilliant general conditions, especially for the researching and developing medical technology industry. The 8th edition of the Guide to German Medtech Companies, which you – dear readers – are holding in your hands, offers a well-founded insight into the diverse corporate landscape of medical technology in Germany.



Andreas Mietzsch Publisher



Christian Böhm Sales & Marketing

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Event Partners



Arab Health Dubai 30.01.-02.02.2023 http://www.arabhealthonline.com

Medlab Middle East Dubai 06.- 09.02.2023 https://www.medlabme.com/en/home.html

MD&M West Anaheim 07.-09.02.2023 https://www.mdmwest.com/en/home.html

expomed eurasia Istanbul 16.-18.03.2023 https://expomedistanbul.com/en/

Medical Technology UK Coventry 22.-23.03.2023 https://www.medicaltechnologyuk.com/

Kimes Seoul 23.-26.03.2023 https://kimes.kr/eng/

DMEA Berlin 25.-27.04.2023 https://www.dmea.de/en/

Microtec Südwest Clusterkonferenz Freiburg | 15.-16.05.2023 https://www.microtec-suedwest.de/

CABSAT 2023 Dubai 16. - 18.05.2023 https://www.cabsat.com/

MedtechLive with T4M Nuremberg | 23.-25.05.2023 https://www.medteclive.com/

Hospitalar Sao Paulo 23.-26.05.2023 https://www.hospitalar.com/en/home.html

EPHJ Geneva 06.-09.06.2023 https://ephj.ch/en/

MD&M East New York 13.-15.06.2023 https://www.advancedmanufacturingeast.com/en/home.html

Moulding Expo 2023 Stuttgart | 13.-16.06.2023 https://www.messe-stuttgart.de/moulding-expo/

FIME Miami Beach 21.-23.06.2023 https://www.fimeshow.com/en/home.html

Asia Health Bangkok | 12.-14.07.2023 https://www.medlabasia.com/asiahealth/en/home.html

Medlab Asia Pacific Bangkok | 12.-14.07.2023 https://www.medlabasia.com/asiahealth/en/home.html

Medtec China Shanghai | TBD https://www.medtecchina.com/en-us/

Medical Technology Ireland, Galway 20.-21.09.2023 http://www.medicaltechnologyireland.com/

Medic West Africa Lagos | 11.-13.10.2023 https://www.medicwestafrica.com/en/home.html

Africa Health Johannesburg 24.-26.10.2023 https://www.africahealthexhibition.com/en/home.html

Formnext Frankfurt am Main 07.-10.11.2023 https://formnext.mesago.com/frankfurt/de.html

Medica Dusseldorf 13.-16.11.2023 https://www.medica.de/

Compamed Dusseldorf | 13.-16.11.2023 https://www.compamed.de/

SPS 23 Nuremberg 14.-16.11.2023 https://sps.mesago.com/nuernberg/de.html

The German Medtech Industry: Inflation drives pessimistic outlook

The Ukraine war - related global economic slowdown and the officially declared end of the COVID-19 pandemic will lead to a reduction in global government health spending. Spending will fall in real terms in 2023. predicts the London-based Economist Intelligence Unit (EIU). This will significantly affect medtech companies that develop and market in vitro diagnostics, medical devices, and digital health solutions. The EIU expects public and private healthcare spending to rise by 4.9% in nominal US-dollar terms in 2023, propelled by higher costs and wages. However, spending will fall in real terms as it fails to keep pace with inflation. EUI analysts estimate that in 2023 we will see a similar pattern as in 2022, meaning that 2023 will be the second successive year of a declline in real-term funding. According to the EUI healthcare outlook 2023, the gap between spending and costs will be most acute in Europe, where the medtech sector had €150bn in revenues in 2021 (27.3% of global sales), €36.4bn of which were from German medtech companies, according to figures of MedTech Europe published in Q2/2022. Although healthcare spending is declining, the German medtech firms expect their sales to increase by 3.3% this year (see page 8).

Regulatory challenges

In addition to the dramatic increase in production costs due to the war-related energy crisis, the European medtech industry – and with it Germany as the undisputed No. 1 in terms of jobs, annual turnover, and exports of medical technology products (see figures pp. 8–10), is facing challenges due to the expected impact of stricter legal regulations at EU level and thus increased expenditures for companies. In particular, the EU Ecodesign Regulation, the tightening of legal regulations in the course of the creation of an the EU Health Data Space (EHDS), and delays in the certification of medical devices according to the Medical Devices Regulation MDR should be mentioned here.

The European Green Deal and the European Circular Economy Action Plan (CEAP) are successively expanding product requirements in the European internal market to include ecological aspects. Future obligations under the EU Ecodesign Regulation include environ-



mental life cycle assessments, minimum recycling rates for materials, reparability, and the publication of certain information in the form of a digital product passport. Manufacturers face the task of evaluating these new requirements at an early stage and implementing them within their companies.

EU Regulators are also set to monitor the use of health data more strictly in 2023 than before. From maintaining electronic medical records to launching online health apps, the digitisation of the healthcare sector will remain a key trend in 2023, according to the EIU. However, concerns over the protection of health data will increase. The EU aims to invest €220m by 2027 in the development of the EHDS, a cross-border digital platform through which people can control their electronic health data. The aim is to ensure data privacy, building on the EU's General Data Protection Regulation, while making the bloc's data more interoperable and accessible. The UK has a similar action plan. Such initiatives are likely to be copied elsewhere, after the World Health Organisation (WHO) pledged to partner with the EU in 2023 to carry out the plan. The industry association Spectaris also sees the future field of AI applications

endangered by the European Commission's draft Artificial Intelligence Act. The AIA contains a far-reaching catalogue of potential specifications for medical devices, manufacturers, and users. According to Spectaris, the EU Commission's objective of creating innovation-friendly framework conditions for AI in the EU is "clearly undermined": AI-driven solutions are classified as high-risk technology and thus their development is being delayed in comparison to the rest of the world.

According to the German Medical Technology Association (BVMed), new figures from the European Commission on the EU Medical Devices Regulation (MDR) show that even after more than five years of implementation, the MDR regulatory system still does not have sufficient certification capacities. Specifically, BVMed calls for an extension of transition periods that will end next year and the abolition of the existing sell-off period for already certified products by 2025. The association is particu-



larly concerned that while 8,120 applications have been accepted (by October 2022) and 1,990 MDR certificates issued, 23,000 certificates still need to be transferred before the transition period expires - more than three quarters of the certificates (17,000) expire in May 2024. According to BVMed, the processing time for 82% of the certificates is between 13 and 18 months, for 18% even between 19 and 24 months. "Unless immediate action is taken, Europe faces a scenario in which a large number of existing medical devices will not be recertified in time and therefore run the risk of disappearing permanently from the market," says a letter coordinated by the European umbrella organisation MedTech Europe. Due to a significant increase in the cost and personnel involved in the certification of medical devices, manufacturers are being forced to withdraw safe and proven products from the market. A supply bottleneck is already emergingas a result. Because more and more companies (80%) see the MDR as a brake on innovation, many are currently seeking initial registration of new products in the US because the market is twice as large as the EU market and reimbursement conditions seem more attractive. Switzerland recently sent a signal and now also accepts FDA-approved medical devices.

Pessimistic outlook for 2022

Following signs of modest growth of German companies in 2021, an industry survey published by BVMed in November 2022 gives a pessimistic outlook. Overall 2021 key figures showed that most of the 13,450 German medical technology companies, 93% of which are SMEs, weathered the COVID-19 pandemic better than expected, particularly developers of solutions to prevent, monitor, or treat COVID-19 related diseases. In addition, trends such as digitisation and artificial intelligence had an economic growth impact on medical technology companies in 2021, as did the general trends of an ageing and more health-conscious society. For 2022, however, 50% of the BVMed member companies expect a decrease in the sector's growth curve. Due to dramatic cost increases, the profits of medical technology companies in Germany will decline. Only 11% of medtech companies expect profit increases this year, while 62% expect a worsening of the profit situation.



Last year only 42% were so pessimistic. The innovation climate index of the medtech sector has sunk to a historic low of 3.6 on a scale from 1 to 10, according to the industry interest groupBVMed.

While companies reinvested around 9% in research and development in 2021, only 18% of the companies surveyed said they would also increase their investments in Germany as a production location this year. For just under half, the level of investment will remain unchanged. The companies consider (personalised) cardiology and oncology to be the most innovative research areas.

Despite dramatically rising costs and a great shortage of skilled workers, the BVMed companies created additional jobs. 40% of the companies surveyed stated that they had increased the number of employees compared to the previous year, while 43% kept the number of jobs stable.

Strong contribution to the economy

However, the current problems are just temporary, as the medical technology industry in Germany remains an important cornerstone of the German economy. And policymakers know that they must solve the up-coming regulatory challenges even in times of climate change, war, or whatever crises arise, in order to keep innovation in the EU and to secure tax revenues in its member states.

Germany's more than 1,450 companies with over 20 employees provide over 154,000 jobs. In addition, a further 12,500 small companies and retail companies can be counted, with more than 210,000 employees. The German medical technology industry is strongly characterised by medium-sized companies. Almost 900 companies have fewer than 50 employees.

For years, global developments such as the ageing of Western societies and globalisation have led to an increase in chronic, genetic, and epigenetic diseases, the treatment of which requires innovations in medical technology. Healthcare costs, the pandemic, and the war in Ukraine (where many phase III trials have been conducted for cost reasons and because of faster recruitment/better treatment adherence) have produced alternatives to randomised clinical trials, partly through remote patient monitoring. Last year, the German Society of Cardiology and three other scientific associations dealing with cardiovascular diseases presented a position paper calling for the rapid mobilisation of public funds similar to those currently invested in cancer research. The stated goal is to diagnose, treat, and thereby prevent up to 90% of cardiovascular diseases at an early stage. These have long led the statistics for global cause of death. This is to be achieved by creating an infrastructure for tele- and e-medicine applications, remote patient monitoring, the digitisation of decentralised clinical trials initiated by investigators, and the sharing of medical data. In four years at the latest, AI tools will reach the market to find patterns in the blood that can predict in seconds and with high precision previously fatal diseases such as acute coronary syndrome. heart failure, or the development of arteriosclerosis and prevent them before they manifest.

Not only emerging markets in Asia, Middle East, and Africa are attractive destinations for German companies, but also established health systems such as in the US and EU countries. With their high innovation standard, German manufacturers are well positioned to drive this development and maintain their leading position in the global medtech market if the regulatory framework is quickly adapted to the companies' needs. Germany currently accounts for 12% of global medical technology exports, with 38.5% going out to EU countries, 18.5% to the US, and 18.1% to Asia. The most important sales markets as of 2021 are the US (€4.83bn), China (€2.34bn), the Netherlands (€1.82bn), France (€1.76bn), and the UK/ Italy (€1.30bn each).

Outlook for Germany and the World

Market research specialist Frost & Sullivan predicted at the beginning of 2022 that the global market for medical technology would grow by 7.8% in 2022 and by a further 7.5% in 2023, reaching a value of \$536bn. This optimistic scenario is now classified by Frost & Sullivan as rather unlikely due to the unfavourable environment. An interesting indicator for tracking innovation within the medtech industry is the number of patent applications. In 2021 medical technology ranked second in terms of applications filed with the European Patent Office: 15,321 (+1%) of the total of more than





188,600 applications were in this field. With 1,426 applications, Germany still ranks second behind the USA (5,865 applications) and ahead of Japan (981 applications).

Our Cooperation Partners

New business through innovation in Germany

Germany Trade & Invest is the economic development agency of the Federal Republic of Germany. The company helps create and secure extra employment opportunities, strengthening Germany as a business location.

With more than 50 offices in Germany and abroad and its network of partners throughout the world, Germany Trade & Invest supports German companies setting up in foreign markets, promotes Germany as a business location and assists foreign companies setting up in Germany.

Medical technology-specific information and support includes:

- > Market research and industry reports
- > Financing and incentives options
- > Tax and legal information
- > Regulatory and reimbursement information
- Matchmaking with industry and science
- > Site selection

Readers of the Guide to German Medtech companies are invited to contact GTAI should they need any support on their way to becoming established in Germany. This publication is of great value to companies looking to find out who's who in the German medical technology sector as well as seeking partners in Germany. GTAI's expert team is ready to assist your search for joint-research and contract manufacturing-project candidates across the country.

Advantage Germany

German medical technology is cutting edge. Hundreds of companies - nearly all of them small or medium-sized - produce medical technology innovations across the entire spectrum of products. Many specialise in very specific fields of applications or types of products.

While these companies may focus on niche markets, they are often world market leaders in their respective fields. Moreover, they continuously strive to improve their existing products: one in three products on the market has been developed within the last three years, with companies investing around nine percent of turnover in R&D.

Close cooperation between Germany's manufacturers and hospitals, universities and a plethora of research institutes helps the country maintain its internationally unparalleled competitive edge. R&D projects in the medical technology sector can also count on numerous types of financial support in the form of grants, interestreduced loans, and special partnership programmes.

Germany is home to more than 30 medical technology cluster networks. Their goal is to achieve continuous innovation in R&D – as well as in manufacturing – by connecting companies, hospitals, universities, and other research institutions.

Dedicated cluster management teams help obtain funding for joint R&D projects, provide shared facilities, and organise educational training programmes for their members. A detailed overview of the cluster networks can be obtained from GTAI. Individual company requests are welcome.



GTA GERMANY TRADE & INVEST



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Health Made in Germany

Germany is one of the world's most important providers and exporters of healthcare products and services. The country's innovative medical products set international standards for quality, safety, and reliability. German manufacturers and service providers in all health and life sciences segments attract overseas customers and partners and deliver leadership in healthcare innovation.

HEALTH MADE IN GERMANY is the export initiative for the German healthcare industry. It supports international companies and organisations that are interested in establishing contact with potential German partners and suppliers. Set up by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), the initiative bundles expert market intelligence for easy industry access. One of the initiative's main goals is to promote the German healthcare sector through international networking activities for the mutual benefit of international partners and German companies alike.

HEALTH MADE IN GERMANY does this by providing proactive support (including market and regulatory insight), introductory services, and networking platforms including trade events at home and abroad. The initiative serves four major industries active in the international medical market: pharmaceuticals, medical technology, medical biotechnology, and digital health care.

HEALTH MADE IN GERMANY also works closely with 16 major German industry associations and is part of the BMWK's MITTELSTAND GLOBAL umbrella program for small and medium-sized enterprises. The initiative is ideally placed to provide access to German healthcare market information and to help overseas businesses identify potential German partners.

The HEALTH MADE IN GERMANY initiative is implemented by Germany Trade & Invest, the economic development agency of the Federal Republic of Germany, on behalf of the BMWK.

For more information: www.health-made-in-germany.com

Our support for your business:

- > We publish market briefs, in-depth market studies and company directories of the German healthcare industry and its different sectors.
- > Our calendar is regularly updated with the latest industry events in Germany and overseas.
- > We provide free access to 3,500+ German healthcare companies with our online database. Detailed company profiles and direct contact information help international businesses to identify potential suppliers and partners in Germany
- > We take part in leading healthcare trade fairs all over the world, organise networking events, and enjoy ongoing dialogue and exchange with international health policymakers.
- > Visit www.health-made-in-germany.com for more information about the German healthcare industry and all HEALTH MADE IN GERMANY activities.





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BVMed – The German Medical Technology Association

BVMed represents over 250 manufacturers, distributors and suppliers in the medical technology industry, as well as providers of medical aids and homecare. Among the members of the association are 20 of the largest medical device manufacturers worldwide in the consumer goods sector.

We support our members by helping to shape laws, policies, regulations and standards, and by providing information and outreach. Our services in summary:

Organization

We offer our members a platform for constructive dialog and joint shaping of framework conditions for the industry in more than 80 strategic and technical working committees.

Advice and information

Our experts support our members in legal, regulatory, political and business issues through personal discussions, information networks, training courses, seminars, conferences, brochures, newsletters and digital media. Furthermore, BVMed communicates the importance of medical technologies for healthcare through campaigns and public relations.

Representation

We represent the interests of the medtech industry visà-vis political representatives at EU, federal and state level, vis-à-vis the Federal Joint Committee, the umbrella organization of statutory health insurers and other health policy actors. This is done at parliamentary hearings as well as consultations with the federal government, committee meetings, boards of trustees, commissions, background discussions and other discussion formats.

Network

BVMed regularly conducts exchange formats on a wide range of topics with the players involved in healthcare. For example, with health insurance companies, the medical profession, hospitals and nursing care, purchasing associations or patient representatives.

Association statistics

Good market statistics are worth their weight in gold. They provide orientation, show trends, and help companies to further develop business ideas.

:::BVMed







Dr. Meinrad Lugan All members of the BVMed Board at: bvmed.de/vorstand

Dr. Manfred W. Elff Deputy Chair (BIOTRONIK)

BVMed therefore compiles market statistics in a wide range of product areas with the help of a trustee office. To make the individual statistics more meaningful, we involve not only our members, but all interested parties.

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International affairs

BVMed is an active founding member of the European trade association for the medical technology industry MedTech Europe and works closely with the US association AdvaMed.

German Medtech Market: More than 250,000 jobs

The medical technology sector is an important part of the healthcare industry.

- > Medtech companies employ over 250,000 people in Germany.
- > Our industry is strongly characterized by small and medium-sized enterprises. 93 percent of medtech companies employ fewer than 250 people.
- > And the industry is an important driver of medical progress. On average, medtech companies invest around 9 percent of their sales in research and development.
- > German medical technology is very successful on the global market. The export ratio was around 66 percent in 2021. Sales are more than 36 billion euros.



For more information: BVMed - Bundeverband Medizintechnologie e.V. Reinhardstr. 29b 10117 Berlin, Germany info@bvmed.de → www.bvmed.de

MEDICAL TECHNOLOGY in the German Industry Association SPECTARIS

SPECTARIS represents the interests of around 400 member companies in Germany, with four sector-specific associations in the areas of medical technology, optical technologies, and analytical, biological, laboratory and consumer optics. Through its political activities, public relations, and industry marketing, the association gives its members a voice, formulates new responsibilities, and opens up new markets. This ensures the international competitiveness of German industry in these sectors.

Core services

Lobbying | Industry Marketing – SPECTARIS promotes industry interests through our communication channels in politics, economics, science, and the media.

Market Research | Statistics – SPECTARIS creates substantial economic advantages through its national, European, and global market reviews and industry data. Technology Consultation | Research Promotion – SPECTARIS' technological guidance guarantees access to monetary support programmes.

International Marketing | Promotion of Exports – SPECTARIS offers guidance on the global market and supports its members in securing international contacts.

In the medical technologies sector, SPECTARIS represents around 130 German capital goods and auxiliary aid companies who mostly produce high-tech products and have a pronounced export orientation. The member companies cover an extensive research and applications environment which includes medical products for diagnostic and surgery purposes, supply systems, and anesthesia and intensive care devices. The association also represents manufacturers of ophthalmic devices, large and small sterilisers, medical functional room equipment, respiratory home therapy, rehabilitation aids, and orthopedic technology.

The SPECTARIS trade association Medical Technology provides its members with support and information in various business areas and topics. In particular: financing, hygiene and processing, compliance, regulatory affairs, market access, research funding, and public affairs.



Chairman: Dr. Martin Leonhard, KARL STORZ SE & Co. KG; Vice-Chairman: Friedrich Schmitz, SCHMITZ u. Söhne GmbH & Co. KG; Vice-Chairman: Thorsten Weide, Drägerwerk AG & Co. KGaA

Global demand for German medical technology

- > High significance of the European market: 39% of German medical technology exports go to countries within the European Union, a further 14.5% to the rest of Europe
- > North America continues to be an important trade partner
- > Demand is growing in Asia, particularly from the People's Republic of China
- > €36.41 billion turnover (2021), domestic turnover: €12.21 billion, overseas turnover: €24,20 billion
- ➤ European medical technology industry: >66,000 companies, €107 bn turnover, 600,000 employees



For more information: Marcus Kuhlmann Head of Medical Technology Phone +49-30-414021-17 Fax +49-30-414021-33 kuhlmann@spectaris.de SPECTARIS. German Industry Association for Optics, Photonics, Analytical and Medical Technologies Werderscher Markt 15 10117 Berlin, Germany → www.spectaris.de

VDMA – Working Group Medical Technology Your network for success

The VDMA represents more than 3,500 German and European companies of the mechanical engineering industry. The industry stands for innovation, export orientation and medium-sized businesses. The companies employ around four million people in Europe, more than one million of them in Germany. Mechanical and plant engineering represents a European turnover volume of around 800 billion euros. With a net value added of around 270 billion euros, it contributes the highest share of the entire manufacturing sector to the European gross domestic product.

Production technology & components for medical products in focus

In the VDMA the fusion of machinery engineering and medical technology is manifold and offers tremendous potential for the future. The Working Group Medical Technology represents suppliers, manufacturers of production equipment, and all industry sectors active in the interdisciplinary field of medical technology within a joint platform. The Working Group is especially focused on pooling the heterogeneous interests of its members and providing an information platform for the companies, offering the opportunity to share and access relevant information.

With its huge network, the Working Group Medical Technology is in a position to recommend experts and to assist its members with fundamental issues. It offers market information for German and foreign markets, a comprehensive list of suppliers for the industry, activities for standardisation, and representation of political interest. Regular expert meetings and working groups provide information on various topics, including laws and regulations, production technology, components, and markets.

Another essential part of our activities is the substantive and organisational support of medical technology events through content or strategic partnerships and participation at national and international fairs: as one of the main supporters of the new medical technology fair **MedtecLIVE with T4M**, through a joint stand at Compamed and three German pavillons in China (Medtec China), Ireland (Medical Technology Ireland), and in the USA (MD&M West).

Assistance with research and development

Medical technology is an innovative and dynamically growing sector. Around one third of its sales are generated with products that were launched on the market less than three years ago. In order to constantly renew and expand their product ranges, manufacturers and suppliers invest huge efforts in research and development. Close cooperation among everyone involved – from research and development to the supply sector and the manufacturers of medical products - is extremely important in making sure this investment pays off. To aid this cooperation, VDMA's Working Group Medical Technology provides its members comprehensive support in developing partnerships and collaborations. For example, research institutes gain the opportunity to present their developments for medical technology to interested companies at roadshows. In addition, we regularly bring doctors and hospitals together with engineers to discuss the future challenges facing medicine and to help to drive new developments forward.



Working Group Medical Technology



For more information: Diethelm Carius VDMA – Working Group Medical Technology Lyoner Str. 18 60528 Frankfurt am Main d.carius@vdw.de → www.vdma.org/medtec

Forum MedTech Pharma e.V. – Europe's largest network for innovations in healthcare

In the development of innovations, cooperation agreements are an important factor for giving companies as well as research institutions a competitive edge over their rivals. This is one of the reasons why Forum MedTech Pharma e.V. was founded. Since then, the organization acts as a hub between research, business, clinics, and politics. Forum MedTech Pharma e.V. establishes networking platforms for all players in the healthcare sector, promotes cooperations between the different stakeholders, provides contacts as well as information and education on the latest trends and innovations.

- > Our motto: Shaping the future of healthcare together
- > Independent network for innovations in healthcare
- Approx. 500 member from industry, science and clinics from 10 countries

Our mission

Forum MedTech Pharma e.V. focuses on networking, creating cooperations and knowledge transfer. As an incubator for innovations in healthcare, we stimulate and moderate future topics and trends in the healthcare industry with various activities. Together with medicine, science and industry, we define solutions for a sustainable and healthy future. Our main topics are: Digitalization, Artificial Intelligence, Robotics, Regulatory Affairs, Sustainability, Market Access and Care.

Focus areas and projects

Within its main topics, the organization focuses on networking projects, a variety of events, and individual services. Attending exhibitions such as MEDICA with a joint booth, which offers small and mediumsized companies the opportunity to present their innovations in a targeted manner. Further focus areas are networking activities as well as a wide range of courses to further the education of our members and network.

- Innovation support through networking and knowledge transfer
- > Expertise in subjectfocused events, projects and services
- Customized topics adjusted to the needs of our members and clients

National Community Portal Medtec Online

On behalf of the German Federal Ministry of Education and Research, we and our project partners have created a new type of platform for exchange, cooperation and innovation in the field of medical technology at medteconline.de. Medtec Online stimulates discussions, encourages networking and supports the transfer of ideas into projects. The Medtec Online community portal is freely available to everyone from the healthcare and medical technology sectors. Register at www.medteconline.de and network with other players of the community. www.medteconline.de

The network

With approx. 500 members, Forum MedTech Pharma e.V. is one of the leading cooperation networks in Europe. Its members – 70% companies, 12% research institutes, 8% hospitals, 7% associations and insurance funds, 3% law firms and lawyers – reflect the diverse nature of medicine and healthcare. Along with Germany, the association has members in seven other European contries, as well as in Australia and Japan. In the 25 years since it was founded, Forum MedTech Pharma e.V. has welcomed over 32,000 delegates at more than 290 conferences and events. The speakers at the conferences support Forum MedTech Pharma e.V. with their knowledge – just like the entire board of directors, chaired by Professor Dr Thomas Armin Schildhauer.



For more information: Forum MedTech Pharma e.V. Am Tullnaupark 8, 90402 Nuremberg, Germany med@medtech-pharma.de → www.medtech-pharma.de

IVAM – The International Microtechnology Business Network

The IVAM Microtechnology Network unites people who are excited about key enabling technologies and the way these technologies shape our daily life and our future. As an international business network and technology marketing expert, IVAM creates trustful international connections between developers, manufacturers, and users of high-tech products. The focus is on small and medium-sized enterprises and their needs as well as on representation of their interests. IVAM was founded in 1995 and is one of the most experienced and efficient high-tech industry networks in Germany. *"Climate crisis, pandemics, digitisation, collapse of the healthcare system, or demographic change: No matter what challenges await us in the future – microtechnology is part of the answer!"*

(Dr Thomas Dietrich, CEO)

Microtechnology is the driver of ever-accelerating change

Microtechnology and related key enabling technologies like MEMS, nanotechnology, photonics, and advanced materials have significantly accelerated innovation in the late 20th and early 21st century. These technologies have affected, improved, or fundamentally changed many areas of society, industry, and the economy – either by improving known products and processes or by triggering entirely new, previously unthought-of applications.

Many technologies that emerged in the 1990s, when IVAM started operating, have long since reached maturity. Consequently, technology suppliers today require support in marketing and finding customers. There is a growing need to access international markets. IVAM acts as a driver for innovation and offers well-founded orientation in the high-tech landscape and provides valuable know-how, e.g. through expert groups or studies on strategic questions concerning target markets, funding opportunities, application trends, or innovation management.



Business support worldwide

Medical technology has been the most profitable market for microtechnology suppliers in recent years. IVAM provides visibility to the technologies and products of its members: at international exhibitions and conferences as well as in virtual space via online meetings, online profiles, technical papers, blogs and podcasts, and other publications. Being found at the right time, in the right environment by the right customers: IVAM helps the sale of innovative high-tech products by supporting networking, contact building, and internationalisation, as well as supporting professionals on the career market.

IVAM has established joint trade fair areas at some of the most important medical supplier trade shows worldwide, such as COMPAMED (DE), MD&M West (US), Medical Manufacturing Asia, MMA, in Singapore, and China International Medical Equipment Fair, CMEF, (CN). In order to push business opportunities even further, IVAM arranges B2B meetings where innovative companies can exchange experience, discuss business ideas, and kick off joint projects.



For more information: IVAM Microtechnology Network Joseph-von-Fraunhofer-Str. 13 D-44227 Dortmund info@ivam.de → www.ivam.com

Life Science Nord – Home of Health Innovation

Cluster Profile

The Life Science Nord Cluster in the federal states of Hamburg and Schleswig-Holstein embraces over 600 biotechnology, pharmaceutical and medical technology companies, clinics and research institutes. About 52,800 employees work in the health industry of Northern Germany*.

In medical technology, Life Science Nord is one of the strongest regions in Germany. Particular features of the cluster are the broad business base and the complete value chains from basic and applied research to clinical studies and the marketable end product.

The outstanding, close cooperation between researchers, clinicians and industrial partners in many fields is reflected in innovative products, projects and technologies.

More than 280 Members, one Common Goal

The cluster management organisation Life Science Nord was set up by the Northern German federal states of Hamburg and Schleswig-Holstein to develop the cluster into a leading international life science network. The cluster agency Life Science Nord Management GmbH and the association Life Science Nord e.V. work together as one to achieve that goal.

More than 280 regional companies and institutions from the industrial healthcare sector are active members of Life Science Nord. All members benefit from numerous competitive services and activities to promote regional networking, exchange experience and know-how, and jointly represent the life science sector of the two northernmost German federal states on a national and international level.

In 2021, Life Science Nord was awarded the Gold Label of the European Cluster Excellence Initiative for the third time in a row.

What Life Science Nord offers

- Comprehensive support in initiating innovative projects, arranging contacts to experts and providing know-how
- Fast and uncomplicated access to regional, national and EU funding programmes
- Admitting members to the network and helping them position themselves within the Life Science Nord Cluster
- > Extensive opportunities for collaboration within an international industry network
- Participation in leading international and national industry trade shows
- Providing data on business and technological capabilities in medical technology, biotechnology and pharma in Northern Germany
- Providing the latest information on developments in business and science
- Access to platforms on which the cluster players can exchange information and which support the dissemination of new developments in the cluster. This also includes the online newsletter and the Life Science Nord magazine, both of which can be subscribed to via the website free of charge, as well as promoting cluster related news via social media networks.



For more information: Life Science Nord Management GmbH Falkenried 88 20251 Hamburg, Germany Phone +49 40 593 62 61-0 info@lifesciencenord.de → www.lifesciencenord.de

MedicalMountains – a strong network for a successful future

Baden-Württemberg is one of the leading locations in the medical technology sector. Its attractiveness reaches far beyond the country's borders. The district of Tuttlingen alone counts a concentration of more than 400 enterprises of the sector. For this reason, the region is also known as the "World Centre of Medical Technology". For many years, tradition and innovation have gone global from here.

Nonetheless the strongly regulated market and an intensely competitive environment raise permanent challenges for the sector. That is why a well-focused management of continuous advancement and an innovative network are an indispensable basis for long-term global success.

Success factor innovation – ideas that build bridges to the future

We are MedicalMountains: A cluster initiative for the medtech industry based in the heart of the World Centre of Medical Technology.

Shareholders of the MedicalMountains GmbH are the Schwarzwald-Baar-Heuberg Chamber of Commerce and Industry, the Tuttlingen District, the NMI Natural and Medical Sciences Institute at the University of Tübingen, the Surgical Mechanics Guild Baden-Württemberg, the Hahn Schickard Society for Applied Research, the Chamber of Crafts Constance and the city of Tuttlingen.

Our particular interest is to strengthen innovative capacity and long-term competitiveness, both for single companies as well as for the entire medical technology business cluster.

For this purpose we actively represent the interests of medtech enterprises on a political level, encourage innovation and technology transfer by directing work groups or R&D projects, organise training seminars and other informative events, and provide support for other service topics such as internationalisation or common marketing activities, amongst others.

MedicalMountains – more than just a loose affiliation of companies

The companies of the cluster consist of more than 90% small businesses and mid-sized companies, making the importance of the network even more crucial now than ever before. The medical sector is experiencing constant change and increasing competition worldwide. For companies of any size, collaboration and exchange with regional partners brings immense knowledge and a lead in technology – as well as enhancing the appreciation of the location for the region itself. MedicalMountains brings order to this natural, mutual structure. Future-oriented, prudent management is the basis for effective, constructive and farsighted developments in medical technology.

In collaboration with a growing network of industry, research institutions and government policies, the cluster initiative MedicalMountains actively represents the interests of medtech enterprises. The focus of the cluster initiative is to promote growth, strengthen competitive advantages, and increase the sector's international visibility even further. For this purpose MedicalMountains provides a platform for regular dialogue and technology transfer. It brings forward innovation by initiating directed project works, promotes qualification of specialised staff, and advises on subsidies or the opening up of new foreign markets. Our way of working is based on a close collaboration with the companies of our network.





For more information: Yvonne Glienke CEO MedicalMountains GmbH

Katharinenstr. 2 78532 Tuttlingen +49-7461-9697-211 glienke@medicalmountains.de → www.medicalmountains.de

Cluster of excellence – Medical Valley EMN

The Medical Valley European Metropolitan Region Nuremberg (EMN) Association is an internationally leading innovation ecosystem in the area of healthcare management.

Highly specialised research institutions, international leaders, and many growing companies are active here. They cooperate closely with world-renowned health research institutions in order to jointly *find solutions for the challenges of healthcare today and tomorrow*.

This extraordinary concentration of players, combined with the international market and competitive position of individual players, plus the unique infrastructures and services, allows ideas to be turned into products, processes, and services more quickly.

The Medical Valley EMN currently has more than 250 members from business, science, healthcare, networks, and politics and has been contributing to the further development, coordination, and marketing of this ecosystem since 2007.

The nationally and internationally outstanding position of this economically strong region was additionally strengthened in January 2010 when it was *designated as "Leading-Edge Cluster" for medical technology by the Federal Ministry of Education and Research (BMBF)*. In April 2017, Medical Valley, in cooperation with the Zollhof Tech Incubator and the Health Hackers, was named one of twelve national "*Digital Hubs*" by the Federal Ministry for Economic Affairs and Climate Action (BMWK) – the only one that focuses exclusively on health. Furthermore, Medical Valley EMN is a member of the consortium of EIT Health. With a budget of up to €80m p.a. for the next 7 to 15 years EIT Health is currently one of the biggest health research programmes worldwide.

In 2019 the dmac – Digital Health Application Center was founded in Bamberg. dmac is another essential hub in the Medical Valley ecosystem and offers support and expertise for companies on their way to the digital healthcare of today and tomorrow.

In 2021, with the founding of the Institute for Healthcare Robotics and Automation, short IFOHRA, another component of the Medical Valley Center Bamberg followed.



IFOHRA accompanies hospitals and other healthcare providers in the technological transformation process, and supports manufacturers of innovative automation solutions in gaining access to the German healthcare market.

Since September 2022, the Medical Valley Academy has bundled the expertise from the network and offers online and e-learning courses for first-class knowledge transfer on all aspects of healthcare.

Contact the cluster for more information:



uropäische Metropolregion Nürnberg

Medical Valley EMN e.V Anna Werner Phone: +49-9131-91617-48 / +49-159-06778755 E-mail: anna.werner@medical-valley-emn.de

Marco Wendel Phone: +49-176-32073960 E-mail: marco.wendel@medical-valley-emn.de → www.medical-valley-emn.de

microTEC Südwest – High-tech solutions for health

Our cluster

The leading-edge cluster microTEC Südwest e.V. is the competence and cooperation network for intelligent microsystems technology solutions for Europe and the contact for microsystems technology in Baden-Wuert-temberg. The cluster has set itself the task of expanding Baden-Wuerttemberg's internationally impressive position in the field of microsystems technology.

The cluster currently has about 120 members covering up the complete range from startups, to small and medium-sized enterprises, up to large enterprises, research institutions, and universities as well as further institutions.

Mission and topics

The mission of microTEC Südwest is the stimulation and promotion of cooperations in microsystems technology, utilising synergies and leading to economic dynamics. Our focus is on health (Smart Health) and production (Smart Production). Further activities address topics such as Smart Home, Smart Energy, and the Internet of Things.

In five different expert groups, microTEC Südwest bundles its expertise in order to jointly produce innovations in the field of microsystems technology.

Smart health

The expert group in vitro diagnostics aims to promote the transfer of technology and knowledge between research and industry in the field of in vitro diagnostics, including e.g. the application focus of decentralised testing/point-of-care diagnostics. Topics of the latest expert group meetings include e.g. Big Data for Next Generation Sequencing, telemedicine, and patient self-tests.

The expert group micro medical technology focuses on the development of useful and safe products in the field of micro medical technology. It is thus committed to the research, development, approval, and reimbursement of these products, more specific diagnostic procedures, more effective therapies, and aids for rehabilitation



suitable for everyday use. Topics dealt with in the group include e.g. artificial intelligence at active implants, market trends, and minimally invasive diagnostics.

microTEC Südwest has been involved in different medical technology projects. An outstanding example is the project 3D Bio-Net, in which a 3D-bioprinter, suitable for multimaterial printing has been developed. Excellent results have been achieved in printing human tissues together with blood vessels. In addition, it was possible to print tailor-made and perfused microfluidic chips (for kidney & skin). This is an essential success in the development of persistent and vital organ models.



For more information: microTEC Südwest e.V. Emmy-Noether-Str. 2 79110 Freiburg im Breisgau, Germany → www.microtec-suedwest.de

BIOCOM

Video Production

Our videos tell stories. The people behind research and development come to life. We combine the essence of film – tension, atmosphere, emotion – with the precise information of science communication. Our unique videos facilitate access to the life sciences while at the same time attracting attention and imparting knowledge.

BIOCOM AG | Jacobsenweg 61 | 13509 Berlin | Germany Tel. +49 (0)30 2649 21-0 | service@biocom.de | www.biocom.de

Participants of the Guide to German Medtech Companies 2023



| BALLUFF | BRNTLEON www.bantleon.de | Biesterfeld Continetatione in Solutions | Blaser. |
|-----------------------------|--|---|--------------------------------------|
| GROUP" | EPflex 🕜 | 🔅 eurofins | FAULHABER |
| HOBE micro" | (<mark>ph ноrn ph</mark>) | HUGO BECK We package your world | IFOHRA Indexembler Indexembler |
| Komet | | MAPA | WI MIKRON TOOL |
| ODU | Oemeta The Coolant People | Quality and Experience - since 1971 | PI |
| SABLES BOOK | SANNER Protecting Health. | SCHEUERMANN + HEILIG Performing Perfection | SCHNEEBERGER VIEW FORMOUT |
| | Transline Translation – key to understanding. | TRUMPF | TYROLD |
| WIRTHWEIN MEDICAL | | ZEISS Seeing beyond | ZELTWANGER |

HORIZON EUROPE

With more than 35 years of experiences in the life sciences, BIOCOM ensures skilled management and targeted communication for projects such as the EU Framework Programme for Research and Innovation.

Communication & dissemination: strategy development, digital & print communication, public relations, website development, film & animation, social media

Memorable experiences: biobased product exhibitions, innovative workshops, hands-on labs

Stakeholder & public engagement: networking hubs, living labs, public dialogue formats

Capacity development: communication trainings, educational toolkits

Analysis & consulting: country and market studies, evidence-based policy advice

Interested?

For more information, just head to www.biocom.eu/comdis or contact Christin Boldt at c.boldt@biocom.eu



Profiles of German Medtech Companies



Name > acad group GmbH

| Address/P.O. Box | > | Gutenbergstr. 26 |
|-----------------------|---|-----------------------|
| Postal Code/City | > | 91560 Heilsbronn |
| State | > | Bavaria |
| Contact Person | > | Alexander Kalusche |
| Telephone | > | +49-9872-953390-0 |
| Fax | > | +49-9872-953390-1 |
| Email | > | kontakt@acad-group.de |
| Website | > | www.acad-group.de |
| Social Media | > | 🛙 in 🗸 🖸 |
| Number of Employees | > | 45 |
| Founded (year) | > | 1991 |
| | | |

Areas of Activity > | Housing solutions for medical devices | Development and manufacturing of small series | Production tooling | Prototyping for product development | Replacement of cost-intensive components by injection moulding parts

External > | Ardo medical AG

- Collaborations | B. Braun Melsungen AG
 - BrainLAB AG
 - essentim GmbH
 - I iSYS Medizintechnik GmbH
 - | Medtronic plc
 - SOMNOmedics GmbH

acad group GmbH for success

The whole development process from just one source – this has been acad group GmbH from Bavaria since 1991. Our medical section is built from acad systems and acad prototyping. Creative designs, intelligent execution, certification, assessment, and optimisation are steps in a typical product development cycle. prototyping und systems work together hand in hand to execute the subprocesses that play a key role in completing a project efficiently and effectively.

acad systems for product development of medical devices

Our innovative housing solution is ideal for the development and manufacturing of small series. We can help you bring your ideas to market quickly, even with a low production volume. acad systems develops innovative housing solutions to make this possible. We start series from 100 up to 2,000 pieces. We also procure all vendor components, secure validation and evaluation, and support you in converting your idea to high-volume production.

Overview of the business concept of acad systems:

- development of innovative housing solutions for medical devices
- integration of embedded systems through close cooperation with software and hardware development
- > small series productions up to 2,000 pieces
- > toolmaking with plastic components
- inexpensive in-house manufacturing of plastic components

Member of





ACAD GROUP







acad prototyping for plastic parts in rapid moulding

Your ideas are our projects because we make your ideas real. Prototyping is driven by improvement. Prototypes are the ideal way to achieve product approval and safeguard the development process through extensive testing. Prototypes also help to determine where further development is needed. The processes available for manufacturing a prototype will depend on how far along it is in the process of development and the security measures required. If you need a prototype that is rigid enough and stable enough to be a series product and want to test the capabilities of the injection moulding process, original production material and injection moulding technology will be your best option.

Overview of advantages of acad prototyping for customers:

- > high level of protection during product development
- reduction of risk involved in changing production tooling
- quick availability of prototype components in original rigidity/stability
- > low costs for tooling and revisions
- > representation of alternative geometries from one tool
- > optimisation of gating

Symbiosis of development and component production in plastic injection moulding

The Stealth Autoguide from Medtronic plc in Dublin, Ireland, is a robot-supported positioning system for cranial procedures. It consists of a control unit for the control system and a robotic unit for positioning. The casing components are injection moulded at acad group GmbH, painted, printed, and delivered to the USA for final assembly.

With our expert services we are your partner for medical devices and the production of injection moulding preseries and small series.



Name > Anteris medical GmbH

| Address/P.O. Box > | Münchner Straße 47e |
|-----------------------|-----------------------------------|
| Postal Code/City > | 83607 Holzkirchen |
| State > | Bavaria |
| Contact Person > | Dirk Kreder |
| Telephone > | +49-8024-4686-652 |
| Email > | info@anteris-medical.com |
| Website > | www.anteris-medical.com |
| Social Media > | in ベ |
| Number of Employees > | 29 |
| Founded (year) > | 2014 |
| | |
| Areas of Activity > | Combination products |
| | IVD and other medical devices |
| | ISO 13485 certified QMS |
| | Technical documentation |
| | Global product registration |
| | Compliance and quality management |
| | support |
| | |
| External > | Acad group |
| Collaborations | ARQon |
| | Assay.works |
| | Baymar Solutions |
| | Biopharma Excellence |
| | Latini Group |
| | Matrix Requirements |
| | Medizone |
| | Sourcia |
| | ZebraSci |
| | |

Request for > | Medical Device Firms

Further Collaborations | Verification and Validation Testing Providers | Pharmaceutical CMOs

We support our customers in their medical device challenges during development, through registration, and beyond.

Success results from connection – the connection of ideas, expertise, and experience. Anteris medical was founded in 2014 and supports the pharmaceutical, bio-tech, and medical-device industries globally by managing the development of combination products, medical device products, and in-vitro diagnostics.

Our broad competencies cover compliance and regulatory affairs, combined with innovative, resource-efficient solutions for compliant development and technical documentation, as well as marketing and sales expertise. We are life sciences and engineering professionals with dozens of years of experience in CE marking, 510(k) submissions, notified nody opinions, combination product submissions and quality systems regulations in all major markets. Let's connect!

Anteris medical associates come from the life sciences and medical device engineering worlds – and thrive at navigating the interface between the two.

> Combination Products:

One pillar of anteris medical's project portfolio is the support of drug-device combination products. Anteris medical has key competencies in project management, regulatory affairs, and quality system consulting for autoinjectors, pens, and needle-safety devices.

> Medical Devices and IVD:

Anteris medical also has extensive knowledge with medical devices (classes I/II/III) and IVD medical devices (classes A-D), including medical device software, and supports customers during every phase of the product lifecycle.

> Tools:

Managing technical documentation is key, especially in the fields of requirements engineering and documentation. Anteris medical can offer tailored and effective tools to make sure your DHF documentation is always up to date.

ANTERIS MEDICAL







- tachysCP: the unique and unrivalled anteris solution for the development of combination products. The tool comes fully packed with a predefined catalog of requirements and risks specific for combination product development.
- Matrix Requirements Medical: the bedrock of tachysCP and our absolute recommendation for the development of any medical device or IVD. Matrix Requirements Medical is the epitome of instant and intuitive use and flexibility, ensuring true assistance at any level of complexity.
- > We are also experienced in the implementation of many other tools available in the market.

Effective project management throughout the entire product lifecycle: keeping projects on time, within budget, and in compliance with ISO 13485 and 21 CFR 820.

- > Concept:
 - > Structured, user-centered concept development
 - Innovative requirements management reduced burden of documentation and improved traceability
 - > Patient preference studies
- > Design:
 - > Partner network for industrial design, mechanical design, hardware and software design
 - > Supplier evaluation, management and audits
- > Design Control
 - > Establishment of EU- and US-compliant development processes and documentation
- > Risk Management
 - Implementation of risk management processes in accordance with ISO 14971
 - > Moderation of risk-management meetings
- > Human Factors
 - Usability engineering and local support for US or EU handling studies
- > Clinical Development
 - Creation of clinical evaluation according to MED-DEV. 2.7.1 by qualified individuals
 - > Identification and analysis of relevant clinical data
 - > Clinical Investigations



Name > Aristotech Industries GmbH

| Address/P.O. Box > | Im Biotechnologiepark |
|-----------------------|-----------------------|
| Postal Code/City > | 14943 Luckenwalde & |
| | 12247 Berlin |
| State > | Berlin-Brandenburg |
| Contact Person > | Jens-Erik Wegner |
| Telephone > | +49-3371-40640-200 |
| Email > | service@aristotech.de |
| Website > | www.aristotech.de |
| Number of Employees > | 130 |
| Founded (year) | 2006 |
| | |

Areas of Activity > Contract manufacturing for medical devices | Implants and instruments | Logistics | Material/Product testing | Project management | Worldwide servicing

AristoTech – we bring your design to life

AristoTech Medical Forgings and Services specialises in contract manufacturing of orthopaedic devices and medical products, implants, and instruments worldwide.

Based near Berlin, Germany, the company supplies OEM companies with standard and customised medical devices that meet ISO guidelines for safety, quality, and efficiency.

AristoTech Industries offers expertise from design and development, engineering, and product testing through finished goods manufacturing to logistical services as cost effective solutions.

This distinctive expertise allows the company to realise innovative projects beyond the ordinary; products can be designed according to individual customer requests in order to support quick and efficient market entry. Whether tooling or finished parts, each item undergoes continuous, rigorously intensive inspection in AristoTech's in-house laboratory. To guarantee the best possible quality, the highest standards of measurement and inspection are applied according to ISO 13485 standards – all *Made in Germany*.

Standard generic product designs for:

- > HIP stems
- > HIP cups
- > Screws
- > Bone screws
- > Bone plates

can be chosen off the shelf, saving costs and time for processing customised tools.



German manufacturer of medical & orthopedic devices

Forging Precision machining Design Engineering Packaging/ precision cleaning Finishing Cleanroom Sterile Packaging Quality certified EN 13485 FDA registered Logistics







>> Discover more:

ARISTOTECH

AristoTech's expertise includes hip stems, acetabular shells, femoral heads, knee & shoulder components, osteosynthesis plates, as well as foot & ankle devices and bone screws.

Depending on the customers requirements, the company supplies semi-finished, finished, packed, and/or sterile products, as well as offering all logistical services.

State-of-the-art machining technologies include closeddie forging and bone in-growth coating, with 3D metal printing in the near future.

AristoTech has long-term, global experience in manufacturing medical devices and processing all kinds of implants.

This expertise, and a highly qualified engineering team, offer cost-effective, German-made medical solutions to the world.



Name > B Medical Systems

| Address/P.O. Box > | 17 Op Der Hei |
|-----------------------|-----------------------------------|
| Postal Code/City > | 9809 Hosingen |
| Country > | Luxembourg |
| Contact Person > | Julian Precht |
| Telephone > | +352-92-0731-1 |
| Email > | julian.precht@bmedicalsystems.com |
| Website > | www.bmedicalsystems.com |
| Social Media > | 🖧 🎔 in 🗅 🖸 🚮 |
| Number of Employees > | 400-500 |
| Founded (year) > | 1979 |
| | |

Areas of Activity > | Vaccine Cold Chain | Medical Refrigeration | Blood Management Solutions

Who is B Medical Systems

B Medical Systems is a global manufacturer and distributor of medical cold chain solutions. The company is the global market leader in the vaccine cold chain and is a recognised innovator in the medical refrigeration industry. The company manufactures and distributes medical refrigeration solutions such as refrigerators, freezers, contact shock freezers, ultra-low freezers, and transport boxes for medical-grade storage and transport purposes across the world. All products are Class I or Class II(a) certified medical devices as per EU MDR regulations. B Medical Systems is part of Azenta Inc. and has subsidiaries in the USA and India.

A wide range of medical refrigeration solutions

Alongside its product lines for the Vaccine Cold Chain and the Blood Management solutions, B Medical Systems develops medical refrigeration solutions for research laboratories, universities, biobanks, pharmacies, and hospitals. The Pharmacy and Laboratory Refrigerators are designed to store vaccines, medicines, and samples at a temperature range of 2°C to 8°C, Laboratory Freezers can ensure a reliable storage at temperatures ranging from -41°C to -20°C, and Ultra-Low Freezers can easily reach temperatures between -86°C and -20°C. All these products have integrated remote monitoring and alarm systems allowing the safe storage of the specimens. Moreover, the high-quality materials used ensure better longevity and easy hygiene control, while the excellent storage capacity and modularity of the units allow the customers to make the best use of all the space available.

Reliable transport solutions

B Medical Systems also provides transport solutions for the safe transport of vaccines and biological specimens. The model ranges include five passive transport boxes with different storage volumes and one active transport refrigerator working with a compressor. These models are ideal for intensive use with many transport applications across various temperature ranges (-80°C to +8°C), even under difficult ambient conditions.
B MEDICAL SYSTEMS



Reliable solutions to store your samples and products





Ultra Low Freezers



Transport

Boxes

°B Connected

Monitoring Software



Freezers

Laboratory



Pharmacy Refrigerators



Impact across the world

Throughout its over 40 years of experience, the company has created innovative solutions to store and transport pharmaceuticals, blood components, vaccines, etc. across the world safely and reliably. Its commitment to supporting health institutions, governments, and NGOs has not only saved innumerable lives but helped entire communities develop and prosper.

The company's products are essential to clinical and research institutes, as their great reliability and efficiency ensure that any biological requiring cold storage can indeed be stored safely at its intended temperature. As modern medicine becomes more complex and very often requires the use of unstable compounds or produces thermosensitive solutions, B Medical Systems' medical cold chain equipment provides the peace of mind scientists and healthcare workers need in their day-to-day life.

Moreover, as the established market leader in the Vaccine Cold Chain for the past 40 years, B Medical Systems has provided equipment to support its partners in vaccinating more than 350 million children in developing countries. Through its long-lasting relationships with global humanitarian organisations such as UNICEF, the WHO, Gavi, Health Ministries, etc., B Medical Systems has installed more than five hundred thousand units across 140+ countries across the world for safely storing and transporting vaccines, medicines, blood, and other samples.

BALLUFF

Name > Balluff GmbH

| Postal Code/City > 73765 Neuhausen auf den Fildern State > Baden-Wuerttemberg Contact Person > Lukas Nagel (Key Account Manager Life Science, Germany) Martin Kurz (Strategy Manager Life Science, global) Alicia Wüstner (PR and Communications Manager) Telephone > Lukas Nagel: +49-173-288-6231 Martin Kurz: +49-7158-173-785 Alicia Wüstner: +49-7158-173-8589 Fax > +49-7158-5010 Email > balluff@balluff.de Website > balluff@com Social Media > ♪ ♥ in > (□ © Number of Employees > 3600 Founded (year) > 1921 | Address/P.O. Box → | Schurwaldstraße 9 |
|---|-----------------------|------------------------------------|
| State > Baden-Wuerttemberg Contact Person > Lukas Nagel (Key Account Manager Life Science, Germany) Martin Kurz (Strategy Manager Life Science, global) Alicia Wüstner (PR and Communications Manager) Telephone > Lukas Nagel: +49-173-288-6231 Martin Kurz: +49-7158-173-785 Alicia Wüstner: +49-7158-173-8589 Fax > +49-7158-5010 Email > balluff@balluff.de Website > balluff.com Social Media > 🖒 🛩 in X 🖙 🔄 Number of Employees > 3600 Founded (year) > 1921 | Postal Code/City > | 73765 Neuhausen auf den Fildern |
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| Social Media → 🖒 🛩 in 🌾 🖸 🖸 Number of Employees → 3600 Founded (year) → 1921 | Website > | balluff.com |
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| Founded (year) > 1921 | Number of Employees > | 3600 |
| | Founded (year) > | 1921 |

Areas of Activity > Balluff is a leading supplier of highquality sensor, identification, and image processing solutions, including network technology and software for all automation requirements

Opening up new perspectives

Balluff is a leading supplier of high-quality sensor, identification, and image processing solutions, including network technology and software for all automation requirements. Family-run for more than 100 years, the company employs 3600 employees in 38 subsidiaries with distribution, production, and development sites worldwide, all working towards your success. Together with our branches in more than 60 countries, we guarantee the highest quality standards worldwide. This is how we empower you to always receive the best for your success.

We give our all to provide top services for innovative solutions that increase your competitive edge. Our consistent digital orientation is the driver of our progress, and our expertise is the success factor for our customers. We live our motto 'innovating automation': we are automation pacesetters, developers, and technological pioneers. In open interactions with associations, universities, and research facilities, and in close contact with our customers, we create new industry solutions for automation. As a future-oriented company, we not only focus on the traditional areas of automation, but are also dedicated to developing holistic applications for an increasingly digital and connected world.

Member of







Quality standards in assembly automation

Today, modern, application-optimised assembly machines are used for the precise and error-free assembly of medical technology components. With Balluff, you can successfully implement such intelligent production and smart manufacturing. Our sensors and interface components make a critical contribution to reliability of automated assembly processes.

Efficient processes in laboratory automation

When you require automated laboratory technology for transporting and processing samples in very confined spaces, Balluff provides you with optimal solutions for all fields of application in laboratory automation – with perfect interaction between optical and other sensor technology, miniaturised electronics, and precision mechanical components. Whether you want to detect and track objects or focus on efficient liquid handling, our sensors put you ahead – as important components of automated sample feeding and removal, as well as the dosing of sample material, or the analysis of liquids.





Name > Hermann Bantleon GmbH

| Address/P.O. Box | > | Blaubeurer Straße 32 |
|---------------------|---|----------------------|
| Postal Code/City | > | 89077 Ulm |
| State | > | Baden-Wuerttemberg |
| Contact Person | > | Rainer Janz |
| Telephone | > | +49-731-3990-0 |
| Email | > | info@bantleon.de |
| Website | > | www.bantleon.de |
| Social Media | > | 6 in 🗸 🖸 |
| Number of Employees | > | Ca. 260 |
| Founded (year) | > | 1918 |
| | | |

Areas of Activity > worldwide

Annual Turnover > Ca. €111m

"QUALITY STARTS WITH ME!"

With this motto, we have been writing success stories for over 100 years. As a traditional top company in the region, we and our customers' processes are always on the move. And if we can't find a suitable lubricant, then we make one ourselves, just for you!

We are Hermann Bantleon GmbH. The lubricant specialist from Ulm. A medium-sized company with approx. 250 employees. We advise our customers on site and create individual concepts. We have specialised in offering our customers holistic product and service concepts consisting of cooling lubricants, cleaning, and corrosion protection, as well as maintenance and care of the media used.

It is precisely this holistic approach that demands close dialogue with customers, opens the way to innovations, and makes Bantleon a flexible and high-performance partner to industry. In the company's own accredited laboratory, our specialists develop and analyse products with and for the customer.

Transparency and traceability, as well as complete documentation, reflect the reliability and high quality awareness of the Ulm-based development, production, and service company.

Cooling lubricant concepts for the medical industry

Today, medical technology primarily uses materials that are difficult to machine. In addition to medical steel, magnesium, and ceramics, these also include titanium and cobalt alloys. The advantages are primarily to be seen in their safe biocompatibility and high corrosion resistance.

Today, Bantleon offers a wide range of technologies in the field of water-miscible cooling lubricants, which are also highly practical in the medical sector. Cooling lubricants with high reserve alkalinity enable very long service lives, even under adverse operating conditions. These technologies have proven their worth,

BANTLEON









for example, in the machining of titanium, steel, and cast iron. In the field of light and non-ferrous metals manufacturing, technologies with moderate pH are an excellent solution. Our many years of experience with boron-free and amine-free product strategies have been transferred here from development into reliable modern cooling lubricant solutions. In addition to applicationspecific cooling lubricant properties such as flushing and lubricating effects, foaming, and residue behaviour, there must also be technological suitability for the available water quality and the materials to be machined. Skin compatibility is confirmed in the development of Bantleon products by dermatological testing.

As a partner to the medical industry, Bantleon naturally also offers lubricant solutions in the field of cutting and grinding oils, as well as minimum quantity cooling lubricants. High performance, low consumption, good cleanability in the downstream process as well as low workplace pollution are relevant for our customers.

The use of low-mist and low-evaporation base oils with very high lubricity have proven their worth here. Synergistically acting additive systems matched to the materials are an important success factor in the respective processes.

In addition, Bantleon's specialists work closely with our customers to develop optimised cleaning and packaging solutions. You can be confident in knowing that our fluid technology is jointly developed, coordinated in the processing, monitored by a specialist laboratory, and traceable in quality.

Certification status:

ISO 9001 ISO 14001 DIN EN ISO 21469 DIN EN ISO/IEC 17025



Name > Biesterfeld Spezialchemie Biesterfeld Plastic

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|-------------------------|--------------------------------|
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| State > H | lamburg |
| Contact Person > D |)r Anna Geffken |
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| Email > a | n.geffken@biesterfeld.com |
| Contact Person > N | Aarkus Gutsche |
| (| Business Development Manager) |
| Email > n | n.gutsche@biesterfeld.com |
| Website > v | vww.biesterfeld.com |
| Social Media > i | n |
| Number of Employees > 1 | 000 |
| Founded (year) > 1 | 906 |

International distributor for the healthcare industry

Biesterfeld is one of the world's leading distribution and service companies in the field of plastics, rubber, and specialty chemicals. Founded in 1906 in Hamburg, Germany, today the group has more than 1000 employees across 50 locations in Europe, North and South America, Asia and Africa and generates an annual revenue of 1.4 billion EUR (FY 2021). The fully family-owned company operates in the business divisions Biesterfeld Plastic, Biesterfeld Spezialchemie and Biesterfeld Performance Rubber.

Everything from a single source

Thanks to extensive experience and long-standing partnerships with leading international suppliers, Biesterfeld Spezialchemie and Biesterfeld Plastics are well positioned in the healthcare industry, distinguished by:

- a team of experts, technical engineers, product and marketing managers with extensive market knowledge worldwide
- > a decentralised sales network with local contact persons, serving more than 20,000 customers in over 120 countries.
- active market development combined with high innovation capacities including sustainable solutions
- > application-based technical advice on product development and process optimisation
- > independent material recommendations
- > diverse product portfolio with customised commercial and logistical solutions
- application laboratories offering formulation development, product testing and in-house training

Competence in Quality & Regulatory

Both business divisions, Biesterfeld Plastic & Biesterfeld Spezialchemie, possess numerous certifications and quality seals, e.g. Operation Clean Sweep, ISO 9001:2015, ISCC+. Furthermore, Biesterfeld Spezialchemie operates a regularly audited, GDP-compliant, pan-european quality



Wearable medical devices are built of several unique layers



DuPont[®] Delrin[®] Moving Parts Solutions Celanese[®] Crastin[®] Housing Solutions

Dymax[®] Electronics Encapsulation

Dymax[®] Needle-to-Hub Bonding

Dymax[®] Edgebond

Dymax[®] Battery Reinforcement

Dymax[®] Wire and Flex Tacking

Dymax[®] Assembly Bonding

DuPont[™] Liveo[™] Silicone Skin-Adhesives management network, which is centrally managed from the Hamburg-based headquarters and involves central warehousing and logistics. Together with our extensive knowledge of industry-specific regulations we are able to provide added value regarding quality & regulatory topics for our customers and partners.

Your partner for medical device development

The global wearable medical device market is expected to grow rapidly in the next years due to a number of factors, e.g. increasing geriatric population, alarming prevalence of chronic diseases and growing fitness and health awareness.

Not least due to the pandemic, medical wearables are seeing rapid consumer adaptation. Self-optimisation, data retrieval, and outpatient-care are deeply rooted in the growing desire to track our health. In order to get a share of this highly competitive market it is of great importance to set standards already in the process of selecting the best raw materials.

At this early stage of product development, Biesterfeld is your competent partner, guiding you through every step of the process.

Depending on your requirements, we offer a broad and innovative product portfolio:

- DuPont[™] Delrin[®] POM-Homo for moving parts
- Celanese[™] Crastin[®] PBT for housing parts
- > DuPont[™] Liveo[™] silicone skin adhesives for device attachment to the skin
- Dymax[®] MD UV-curable adhesives for assembly bonding, electronics encapsulation and edge bonding



Name > Blaser Swisslube GmbH

| Address/P.O. Box | > | Eichwiesenring 1/1 |
|---------------------|---|-----------------------------|
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| State | > | Baden-Wuerttemberg |
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| Telephone | > | +49-711-900-73-0 |
| Email | > | germany@blaser.com |
| Website | > | www.blaser.com |
| Social Media | > | in 🖸 🖸 🖪 |
| Number of Employees | > | Global: around 600 |
| | | In Germany: 40 |
| Founded (year) | > | Blaser Swisslube AG: 1936 |
| | | Blaser Swisslube GmbH: 1995 |
| | | |

Areas of Activity > The Swiss application expert Blaser Swisslube turns manufacturers' metalworking fluid into a key success factor – a Liquid Tool.

Metalworking fluids in medical technology – a success factor

Machining the materials used in medical technology is very challenging. Cutting cobalt chrome, stainless steel, and titanium leads to above-average tool costs. The influence of metalworking fluids on the results of the machining process is greater than one might assume. Choosing the right metalworking fluid can have a major leverage effect and improve productivity and economic efficiency, as well as machining quality.

A thorough on-site analysis

Tramp oil entry, metal release, and aging change the properties of the metalworking fluid. Do these changes mean that the cleanliness and biocompatibility tests originally performed are still valid at all? A holistic view of the given processes is called for here.

Changing a process specification, i.e., also the metalworking fluid, is a major effort. But doesn't a potential tool cost reduction of around 25 to 50 per cent justify this effort?

Tool life optimisation potential

In a series of machining tests in our in-house Technology Centre, Blaser Swisslube analysed the influence of metalworking fluid on tool life.

The evaluations revealed that the tool life for identical machining processes can differ up to fourfold by selecting the best possible metalworking fluid.

What demands does the medical industry place on metalworking fluid?

- > No raw materials that pose risks or should not be used
- > Safe and effective cleaning processes
- > Consistent quality
- > Durable products with no or few changes that are announced predictably and verifiably in good time
- > Stable and high-yielding production processes
- Long tool life and therefore the lowest possible tool costs





BLASER SWISSLUBE



Meeting all these requirements with the ideal metalworking fluid must be the aim of every metalworking fluid supplier. It is their duty to make every effort to understand the applicable requirements and to provide maximum benefit through the metalworking fluid used and the accompanying services. This also includes the desire to innovate together.

Blaser Swisslube and the Liquid Tool[™]

To be in a position to also bring groundbreaking innovations to market in the future, Blaser Swisslube operates a highly qualified and modern R&D department. New products are developed and tested here. The in-house Technology Centre is there to provide support. This internal cutting and grinding testing allows Blaser Swisslube to extensively test and evaluate its metalworking fluids prior to their market launch.

Blaser Swisslube develops, produces, and markets high-quality metalworking fluids. Medical technology customers around the world use these metalworking fluids to manufacture implants and medical devices. With a team of application experts, customised services, and excellent products, the Swiss family-owned Blaser Swisslube helps manufacturers fully capitalise on the potential of their machines and tools and turn the metalworking fluid into a key success factor – a Liquid Tool.

cicor

Name > Cicor Group

| Address/P.O. Box | > | Gebenloostrasse 15 |
|---------------------|---|--------------------|
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| Country | > | Switzerland |
| Telephone | > | +41-71-91373-00 |
| Fax | > | +41-71-91373-01 |
| Email | > | info@cicor.com |
| Website | > | www.cicor.com |
| Social Media | > | Ƴ in X 🖸 |
| Number of Employees | > | 2,200 worldwide |
| Founded (year) | > | 1966 |

Areas of Activity > | Electronic manufacturing services | Engineering and test engineering | Tool design and fabrication | Plastic injection molding | Box building | Printed electronics | Hybrid circuits | Printed circuit boards

Annual Turnover > CHF 239m (2021)

Cicor Group – your technology partner

The Cicor Group is a globally active provider of full-cycle electronic solutions from research and development to manufacturing and supply chain management. Cicor's approximately 2,200 employees at twelve locations in Europe and Asia are serving leaders from the medical, industrial and aerospace & defence industries. Cicor creates value to its customers through the combination of customer-specific development solutions, high-tech components, as well as electronic device manufacturing.

Customised solutions

Cicor works together with customers to develop innovative products and offers solutions that meet the needs of the market, reflect the latest trends, and convince through their application. Cicor's broad portfolio of innovative technologies, services, and global production capacities offers the right solution for even the most demanding requirements, such as high-tech and high-reliability applications. Thanks to a focus on consistent quality and maximum traceability, rapid prototyping, flexible choice of materials, miniaturisation, as well as development and assembly services, Cicor is able to meet the requirements for medical devices by using new ideas and cutting-edge solutions. Cicor supports its customers starting in the planning stage and provides the best outsourcing solution, tailored to the specific needs. Cicor is your technology partner over the entire product lifecycle, from product development through series production to after-sales service.

One-stop shop for electronics and precision plastics solutions

Cicor is an EMS provider with an international footprint and a broad range of production capabilities in printed circuit board assembly, system assembly and box building, control cabinet construction, cable assembly, and in the areas of tool design and fabrication as well as precision plastic injection moulding. Cicor offers complete outsourcing solutions for the development and manufacturing of complete electronic devices and systems. As a company with global operations in Switzerland, Germany, Romania, Singapore, Vietnam, Indonesia, and China, Cicor employs its synergies to offer solutions based on long-term know-how.

CICOR GROUP



Innovative power through technological expertise

As a leading manufacturer of sophisticated microelectronics and high-quality substrates, Cicor is able to provide a broad range of products and services of the highest standards. In the area of microelectronics, Cicor offers state-of-the-art assembly and packaging technologies under clean room conditions. In the field of substrate manufacturing, Cicor is characterised by the production of highly complex rigid, rigid-flexible, and flexible printed circuit boards and substrates using thin-and thick-film technology. Cicor works closely with its customers to develop and manufacture sophisticated products, ranging from prototypes to large-scale serial production. Cicor also offers a high degree of process stability, consistent top-quality, and absolute delivery reliability.

Sophisticated implants

Cicor manufactures complex circuits of various materials and realises ultrafine structures, which can be less than 0.02 mm thick despite having a high functional density. Using CiP (chip in polymer/plastic) technology, the overall thickness of chip packages can be reduced to between 60 and 100 μ m. State-of-the-art technology makes it possible to manufacture multilayer circuits from biocompatible materials or stretchable components in conjunction with multilayer technology on flexible substrates.

Printed electronics

The unique printing technology used, enables a wide range of conductive, non-conductive and biocompatible materials to be printed on a wide range of substrates and forms. In addition, new opportunities exist for interconnect technologies that can lead to performance improvements and cost optimization.

The integration of the circuits into three-dimensional surfaces often eliminates the need to use an additional substrate. Compared to the methods used today to produce such three-dimensional circuit carriers, the technology chosen by Cicor offers a significantly wider variety of printed and printable materials. Devices for medical, aerospace and IoT applications can be significantly reduced in size by using this technology.

<u>c</u>loudflight

Name > Cloudflight

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| State | Schleswig-Holstein |
| Contact Person | > Eric Thomas |
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| Fax | +49-431-67072-29 |
| Email 2 | eric.thomas@cloudflight.io |
| Website 2 | > www.cloudflight.io |
| Social Media | › fi in 사 🖸 🖸 |
| Number of Employees | > 1000+ |
| Founded (year) | > 2019 |

Areas of Activity > | (medical) software engineering

- | (medical) software development | cloud architecture and development
- artificial intelligence
- | user interface design
- user experience design
- | eCommerce solutions
- consulting
- | mobile apps development
- smart production development

Member of



Our Profile

Cloudflight provides individualised, future-oriented digital solutions for your medical devices, health solutions, processes, and business models. Tailored specifically to your needs, our services unlock new potential and differentiate your business from the competition.

The award-winning, holistic systems we create for our market-leading clients rest on up to five solid columns:

- Artificial Intelligence: Leveraging domain-specific expertise in Natural Language Processing, Process Mining, and Ontological Modelling, our AI solutions offer significant workflow improvements, e.g. via automated data extraction and Decision Support Systems. By focusing on explainable AI implementations, we support medical professionals in making informed decisions.
- > User Experience and User Interface Design: Supporting users in completing a task at hand is what makes a product successful. Our User Experience Designers make sure that our developments fit seamlessly and safely into existing workflows, present relevant information at the correct time, and help users to achieve their goals. And they look beautiful, too!
- Embedded Engineering: From miniaturised wearables to sophisticated imaging devices: our Embedded Engineering Team realises software that operates smoothly and stably.
- > Mobile: The range of applications for mobile solutions covers dedicated health apps, asset management, device control, and several other complex use cases. Our team for Mobile Engineering implements these across different platforms.
- Cloud & Platforms: Tele-Health, new business cases (X-as-a-Service), centralised data collection, and analysis: software platforms based on the public or private cloud have become an important factor in the health industry. Our experts help to build and run your next-level software platform while ensuring adherence to highest compliance and data protection standards.

CLOUDFLIGHT



Our agile and interdisciplinary project teams, consisting of medical advisors, software specialists, quality engineers, and UX/UI designers, cover every step from ideation to product launch and operation.

With more than 950 skilled IT strategists, consultants, data scientists, cloud specialists, designers, and excellent software architects working from 21 locations in 5 countries, Cloudflight is one of Europe's leading full-service providers in the field of industrial digital transformation with competencies ranging from artificial intelligence, cloud native, embedded software development and human-machine interface design (HMI) to cognitive systems and eCommerce solutions.

QMS and norms:

DIN EN ISO 13485 | QMS – Requirements for regulatory purposes DIN EN 62304 | Medical device software – Software lifecycle processes DIN EN 62366 | Application of usability engineering to medical devices

DIN EN ISO 14971 | Application of risk management to medical devices



Name > Cochlear AG

| Address/P.O. Box > | Peter Merian-Weg 4 |
|-----------------------|--------------------------------|
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| State > | Switzerland |
| Contact Person > | Customer Service |
| Telephone > | +41-61-205-82-04 |
| Fax > | +41-61-205-82-05 |
| Email > | customerserviceCH@cochlear.com |
| Website > | www.cochlear.com/ch |
| Social Media > | 🗗 y in 🖸 🖸 |
| Number of Employees > | Almost 4500 |
| Founded (year) > | 1981 |

Areas of Activity > Implantable hearing solutions

Member of



Cochlear is the global leader in implantable hearing solutions, providing cochlear implants and bone conduction implants. For 40 years, Cochlear has been connecting people all over the globe to the world of sound. Inspired by his father's struggles. Professor Graeme Clark developed the world's first multi-channel cochlear implant to help treat hearing loss. Since then, Cochlear has provided more than 700,000 implantable devices, helping people of all ages to hear. Cochlear continuously strives to develop new technologies and innovations for all recipients - whether they received their implant today or many years ago. Participating in over 100 collaborative research programmes worldwide, Cochlear has invested more than AUD\$2 billion in research and development to date. Cochlear aims to support cochlear implantation becoming the standard of care for people with severe to profound hearing loss, and offers bone conduction solutions for conductive hearing loss, mixed hearing loss and single-sided deafness. Cochlear commenced operations in 1981 as part of the Nucleus Group, and was listed on the Australian Securities Exchange (ASX) in 1995. Cochlear is a Top 50 ASX-listed company with annual global revenues of >AUD\$1.5 billion. Cochlear's global headquarters are on the campus of Macquarie University in Sydney, Australia with regional headquarters in Asia-Pacific, Europe and the Americas. With a significant international footprint. Cochlear sells its products in over 180 countries and has a global workforce of more than almost 4,500 employees. Cochlear strives to help people hear - aiming to provide them with a lifetime of hearing through the best possible support. Hear now. And always

We transform

Impact of hearing loss

New WHO figures reveal that globally, 1.5 billion people live with some degree of hearing loss. This includes around 60 million people who live with severe or higher hearing loss.¹ Cochlear aims to support cochlear implantation becoming the standard of care for people of all ages with severe to profound hearing loss. We want to help remove barriers to best practice hearing care. We also provide bone conduction implants for people with conductive hearing loss, mixed hearing loss, and singlesided deafness.

COCHLEAR





Cochlear™ Nucleus® Kanso® 2 Sound Processor (off-the-ear)



Cochlear™ Baha[®] 6 abutment (Baha Attract)



Cochlear™ Nucleus[®] 8 Sound Processor (behind-the-ear)

Cochlear[™] Nucleus[®] Profile[™] Plus with Slim Modiolar Electrode (Cl632)

> Cochlear™ Osia[®] 2 Sound Processor

Cochlear™ Osia® (OSI200) implant

Cochlear™ Baha® 6 Max Sound Processor

> Cochlear™ Baha® abutment (Baha Connect)

Cochlear supports the World Health Assembly's (WHA) resolution 70.13, which recommends comprehensive hearing care policy actions to prevent and treat hearing loss. Collaborating for change

We're collaborating so we can provide hearing for as many people as we can, now and into the future. To do that we're seeing beyond the technology, into education, culture and society, doing what we can to influence behaviours and attitudes towards hearing loss so that everyone can hear their best. This means engaging not just professionals, but research collaborators, policy makers and communities.

Cochlear is making an investment in collaborative partnerships within the global medical research community and to be actively involved in delivering evidence-based research. This will help to better understand, address and provide access to treatment options for individuals and communities impacted by hearing loss.

Our solutions

Cochlear implants

Cochlear Limited

Cochlear implants are designed to mimic the function of a healthy inner ear (or cochlea). They replace the function of damaged sensory hair cells inside the inner ear to help provide clearer sound than hearing aids can.²

Bone conduction implants

Some types of hearing loss impact the ability of sound to travel effectively through to the inner ear. A bone conduction implant system can bypass these damaged or blocked parts of the ear and deliver sound vibrations directly to the inner ear, where they can be turned into electrical signals that are sent to the brain.

Active OS implants

The Cochlear[™] Osia[®] System is the world's first Active Osseointegrated Steady-state (OS) hearing implant. This innovative new kind of implant uses a process called digital piezoelectric stimulation. The key component in this process is a special Piezo Power[™] transducer that expands and contracts to create powerful vibrations that are sent through the skull bones to the inner ear.

References:

1 World report on hearing. Geneva: World Health Organization; 2021. License: CC BY-NC-SA 3.0 IGO.

2 Macherey O, Carlyon RP. Cochlear implants. Current Biology 2014: 24; 18 (R878-R884).

. Cochlear™ Baha[®] implant



Name > CONZE Informatik GmbH

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| Magnus Theile |
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| www.conze.com |
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| 12 |
| 2009 |
| Cloud Frontends Deskton Software GIII |
| |

| Embedded Device GUI | Facelift / Redesign | GUI Performance Optimisation | Custom GUI-Controls | Migration of old GUI technologies | Digital Health Applications / Mobile Apps | Cloud-Transformation | Prototypes for evaluation | Design Management | Technology Consulting | C++, C#, .NET, WIN UI, MFC, WPF, UWP, Qt, ASP.NET Core, Angular, **Electron, React Native, Flutter** | CI/CD tools, such as build servers and docker containers.

External > | University of Siegen

Collaborations | Brancheninitiative Gesundheitswirtschaft Südwestfalen e.V. | Forum MedTech Pharma e.V. | German UPA e.V. | Bundesverband IT-Mittelstand e.V.

Member of



Healthcare, your perfection. Software, our passion.

CONZE Informatik GmbH is a specialist in the development of user interfaces (GUI/HMI) of advanced devices and software systems for customers from medical technology and healthcare. To ensure a smooth placing of the medical device on the market, CONZE is certified according to DIN EN ISO 9001 and DIN EN ISO 13485 and observes relevant norms and standards such as IEC 62304 and IEC 62366. In this way, the service provider guarantees the high quality and safety standards in medical technology.

Competence from the digital workbench

As an established remote development team, the company expands the workforce of its customers. From development to project management, CONZE acts as a digital workbench for HMI departments, implementing UI/UX concepts and visual designs as the graphical user interface of the customer software. The transparent cost and performance-optimised project management keeps customers up to date on the status quo, budget, and resources at all times in the project and is available with active solution proposals. It identifies bottlenecks or even risks at the earliest stage in order to react flexibly to changing requirements and actively present an appropriate solution. Thus, the team manages the daily balancing act between process-critical solutions in medical technology, user-friendly product design, and compliance with legal regulations. This allows the consistent development of international, market-ready software solutions of high quality according to the highest standards.

CONZE INFORMATIK



HMI Development for Medical Software

ISO 13485 / ISO 9001





New web and mobile app development framework for faster time to market

CONZE has expanded its portfolio with its own framework for Digital Health Applications (DiGA). Thanks to very low initial efforts, minimal viable products (MVP) can be quickly generated, and can already be tested for market acceptance before lengthy development cycles are started. Decisions on applications, migrations, or new developments can thus be made on the basis of a quickly available and calculable feasibility. The framework has already been tested in the medical environment with the development of a digital blood pressure diary, as well as the process digitisation for the recording of electronic signatures.

Medical quality management and safety

In order to guarantee and verify the high quality and safety standards of medical technology according to MDA/FDA, CONZE's quality management is certified by TÜV Rheinland (DIN EN ISO 9001) and TÜV Hessen (DIN EN ISO 13485, Medical devices – Quality management systems; Requirements for regulatory purposes). CONZE complies with IEC 62304 (Medical device software - Software life-cycle processes), DIN EN ISO 14971 (Medical devices - Application of risk management to medical devices), and IEC 62366-1 (Application of usability engineering to medical devices).

The innovative strength of tomorrow

As a cooperation partner of the University of Siegen, CONZE is involved in the research of the Chairs of Life Sciences, Medical Computer Science, and Human Computer Interaction. In this way, the international character of the research and the flow of knowledge are expanded in the long term.

Get in touch!

Benefit from experience and knowledge in the field of User Interface Engineering. Talk to the CONZE experts about your current or future software project.



Name > CSA Group Bayern GmbH

| Address/P.O. Box | > | Straubinger Strasse 100 |
|-----------------------|---|---------------------------|
| Postal Code/City | > | 94447 Plattling |
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| Contact Person | > | Marcel Lavèn |
| Telephone | > | +49-151-188-29-506 |
| Email | > | Marcel.Laven@csagroup.org |
| Website | > | www.csagroup.org |
| Social Media | > | 🖬 Y in 🖸 |
| Number of Employees | > | ca. 2,000 worldwide |
| Founded (year) | > | 1919 |

Areas of Activity > | Product Testing Inspection and Certification | Standards Development | Global Market Access

About CSA Group

CSA Group is a global organisation dedicated to safety, social good, and sustainability. We are a leader in standards development and in the testing, inspection, and certification of products around the world including Canada, the U.S., Europe, and Asia.

Our areas of focus for testing, inspection, and certification services are the healthcare, industrial, home, and commercial industries.

Testing & certification services for the healthcare industry

Accredited as a National Certification Body (NCB) through the IECEE CB scheme and recognised by Authorities Having Jurisdiction (AHJ), we offer leading healthcare systems conformity assessment services, as well as testing and certification to leading international standards, such as IEC 60601-1, including the collateral standards and the applicable particular standards, and IEC 61010-1 with the applicable particular standards.

Our technical knowledge of medical electrical equipment and systems, and laboratory & measurement equipment, along with our knowledge of the compliance requirements in major world markets, work together to help you remove barriers to global market access.

CSA Group offers a comprehensive safety and compliance testing service offering. We offer testing and risk management evaluations throughout the product lifecycle and can offer tests for:

- > Electrical safety
- > Electromagnetic compatibility (EMC)
- > Cybersecurity
- > Interoperability
- > Wireless applications
- > Global market access
- > Coexistence testing services





Medical electrical equipment and systems

Medical electrical equipment and systems offer invaluable benefits but can also present great health and privacy risks through flawed design or malfunction. The experts at CSA Group can help you identify and resolve risks so you can safely and confidently go to market. We provide standards, testing, and certification for a wide array of medical electrical equipment and systems for:

- > Patient Monitoring
- > Diagnostic Imaging
- Medical Robotic etc.

and products such as:

- > CT Scanners
- Incubators etc.

Laboratory & measurement

Take advantage of CSA Group's healthcare industry expertise to prepare your laboratory, control, and measurement equipment for the global market with fast and reliable services.

Laboratory and measurement equipment must meet demanding standards for precision and reliability. Trust CSA Group experts to help you identify and resolve flaws so you can confidently go to market.

We provide testing, certification, and standards solutions for a wide range of laboratory, control, and measurement equipment, such as:

- > Centrifuges
- > Autoclaves
- > Mass Spectrometers
- > In-vitro Diagnostic Equipment
- > Multimeters



Name > EPflex Feinwerktechnik GmbH

| Address/P.O. Box > | Im Schwöllbogen 24 |
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| Telephone > | +49-7123-9784-0 |
| Fax → | +49-7123-9784-22 |
| Website > | www.epflex.com |
| Social Media > | 🗗 in 🤾 🖸 |
| Number of Employees > | 430 |
| Founded (year) > | 1994 |
| | |

Areas of Activity > Components for minimally invasive medicine

Annual Turnover > €38m

Member of



EPflex - better ideas, better health

We are one of the pioneers in the development and manufacture of metallic components for minimally invasive medicine.

Over the years, we have repeatedly developed solutions that have opened up completely new, previously unimagined possibilities for diagnosis and treatment. These include, among others, the world's first MRI-compatible guidewire.

Our products are high-tech precision instruments, developed and manufactured on the basis of unique knowhow and years of experience, with the aim of delivering consistently high quality.

Guide wires

Our guide wires are high-tech instruments, manufactured and developed on the basis of years of experience and outstanding expertise. We offer a wide range of stainless steel and Nitinol guide wires for a wide variety of applications – tailored to your requirements.

Nitinol stone retrieval devices

EPflex stone retrieval devices are manufactured with the highest precision and guarantee the best quality when using Nitinol. This makes us the perfect solution for urological and gastroenterological procedures.

Snares

Our snares are made of Nitinol, a superelastic nickeltitanium alloy. This ensures that the sling always returns to its original shape. Due to the use of Nitinol, our snares are particularly resistant to buckling and deformation. Snares can be equipped with a gold-coated head in order to provide enhanced radiopacity.

Stylets

EPflex stylets are manufactured individually according to your requirements. Whether ground or unpolished, coated or uncoated, we can use a large stainless steel and Nitinol wire bearing for this purpose.

EPFLEX FEINWERKTECHNIK







Packaging

Our products and components are packaged in a clean room. We make sure that the safety and highest hygiene requirements are always met.

Manufacturing competencies

- > Grinding
- > Laser welding
- > Gluing
- > Wire forming
- > Shrinking
- > Electrolytic marking
- > Laser marking
- > Sandblasting
- Coating

The medical disciplines

- > Urology
- Gastroenterology
- > Interventional cardiology
- Peripheral angioplasty and other minimally invasive procedures

Quality right from the start

We use high-quality materials, such as medical grade stainless steel or Nitinol, platinum, tungsten, and special polymers for our guide wires.

Our solutions and products are perfectly tailored to the individual needs and requirements of our customers. We are equipped with state-of-the-art technologies and production facilities. Our employees are specially trained and pay attention to even the smallest details with the highest precision. Particularly complex work steps are carried out by our experts by hand. Furthermore, we are DIN EN ISO 13485 certified.

In addition to our high-quality basic product range, we offer the opportunity to develop and implement customised solutions that are perfectly adapted to the respective specific requirements – down to the last detail. We are looking forward to hearing from you!



Name > Eurofins Medical Device Services

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| Email | > | mdsales@eurofins.co, |
| | | consulting-miunich@eurofins.com |
| Website | > | www.eurofins.com/medical-devices |
| Founded (year) | > | 1984 |

Areas of Activity > Medical Device Consulting Medical Device Testing Assembly, Cleaning, Packaging, and Sterilisation Comprehensive services for medical devices

From implants and instruments to single-use and combination products, as well as active electronic devices, Eurofins Medical Device Services provides the optimal strategy for all types of medical devices and delivers rapid turnaround times with the highest level of service and most advanced technologies.

With extensive knowledge of the commercialisation processes, regulatory requirements, and scientific trends in the medical device industry, our scientists, experts and engineers have been assisting companies, large and small, with regulatory submissions, the necessary testing, and special processing for three decades.

Our 20+ state-of-the-art facilities throughout North America, Europe, and Asia Pacific offer extensive capacities and the highest level of instrument technology, enabling us to provide the full scope of testing services required by the medical device industry.

Our Eurofins Medical Device Consulting team supports the customer with the technical documentation, the quality system (ISO 13485), and the development of individualised testing strategies for biological safety to save time and costs.

Eurofins Medical Device Testing helps you execute your testing plans and take steps to meet the requirements for marketing anywhere in the world. Our laboratories maintain quality systems compliant with cGMP, GLP, and ISO 17025, and conduct testing in accordance with ISO, ASTM, ANSI, AAMI, USP, EP, and JP standards, as well as customised test designs to fulfil the unique needs of our customers.

In addition, the customer can deliver a developed device to our Eurofins inpac experts, who find the best solutions for the cleaning, packaging, and sterilisation of the product. When performing these special processes, they take care of the validation procedures as well.

Member of









EUROFINS MEDICAL DEVICE SERVICES

Our services at a glance

- Consulting & Training: consulting for technical dossier; quality management; biological & toxicological risk assessment; reprocessing of reusables; cleaning, packaging, and sterilisation; shelf life and stability; customised training courses at a Eurofins facility or in house
- Chemical/Physical Analysis: extractables & leachables; material & product stability; dissolution; raw materials purity; particle characterisation
- Biocompatibility Testing: cytotoxicity; hemocompatibility; genotoxicity; irritation; sensitisation; systemic toxicity; implantation (standard, customised, functional); degradation studies
- Chemical Characterisation: GCMS +/- headspace, ICP, LCMS, FTIR; toxicological risk assessment; expert evaluation; inclusion of AET
- Microbiology & Sterility: sterility / sterility validations; bioburden / bioburden validations; endotoxins / endotoxin validations; antimicrobials / infection control; cleaning & reprocessing validations; bacterial identification; customised test designs
- > Packaging Validation & Seal Integrity: container closure integrity tests; sterile barrier; package & transit testing; shelf life & accelerated aging / real-time aging; label durability
- Combination Products: drug release and dissolution; chemical compatibility; stability; container & closure integrity; syringe testing
- Cleaning, packaging, and sterilisation: contract production and packaging; packaging design; production of packaging materials; cleaning; assembly; engineering; sterilisation; validation and documentation; procurement management



Name > FAULHABER Drive Systems

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|---------------------|---|-------------------------|
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| State | > | Baden-Wuerttemberg |
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| Email | > | marketing@faulhaber.com |
| Website | > | www.faulhaber.com |
| Social Media | > | fin 🖸 🖸 |
| Number of Employees | > | 2,000 |
| Founded (year) | > | 1947 |
| | | |

Areas of Activity > | Medical & Laboratory Equipment | Optics & Photonics | Robotics

Drive systems for laboratory automation

Over the years since the company's founding in 1947, drive specialist FAULHABER has repeatedly succeeded in using innovative products to develop new system solutions for a wide range of applications in many different markets. Laboratory automation and medical technology also benefit from the know-how that is today embedded into microdrives. In addition to the EN ISO 9001 and 14001 standards, FAULHABER is also specially certified for medical products according to EN ISO 13485.

Precision for cell analysis

A lot can be learned about the efficacy of new drugs already in the laboratory. This can be significantly accelerated with automated systems for precise cell analysis. (Image 1) The process involves cameras and pipettes, which are moved by brushless DC servomotors with an integrated Motion Controller. They position with micrometer accuracy, are very compact, and they also work very reliably. Their low weight and volume is another advantage in terms of use in laboratories. The brushless DC servomotors with 4-pole technology deliver high torgues and smooth running characteristics as well as low noise levels. The dynamically balanced rotor provides quiet, cogging-free operation. And as the data is processed right on the motor, there are no radiated interference signals during commutation, which are inevitable with long supply lines.

Reliable pollen monitoring

Studies predict that up to 50% of the population will be affected by pollen in the future. Possible symptoms range from hay fever and headaches to shortness of breath or anaphylactic shock. This makes it increasingly important to know when and which pollen are in the air and in what concentration. The standard instrument for this in many European countries is the so-called Burkard trap, in which pollen is collected and counted manually. But automated systems that aspire air and extract the pollen on specimen carriers can deliver results much faster (image 2). So-called pushers then move the specimens under a microscope for analysis (image 3).



MedicalMountains

FAULHABER DRIVE SYSTEMS







These pushers are powered by DC-micromotors, which are well suited for fast start-stop operations thanks to graphite commutation.

Dynamics for fast axes in laboratory automation

Since the beginning of the coronavirus crisis, the pharmaceutical industry and laboratories have been under pressure to realise the highest possible levels of automation. Miniaturised linear motor modules and axes open up new possibilities (image 4). Designed as a modular system, they are suitable for a wide range of single and multi-axis tasks in laboratory automation and the pharmaceutical industry. They are driven by small DC linear motors. These are not designed as classic "surface rotors" with carriages and guides. Instead, the forcer rod is guided within a 3-phase self-supporting coil. This design produces an exceptionally good relationship between linear force and current and high dynamics. In addition, there are no cogging torques, which makes the linear motors suitable for use in fast linear axes.

Quick travel through laboratory

In modern laboratory operations, there is no way around the use of practical automation technology that relieves the employees from monotonous tasks and eliminates sources of errors. Fully automated sample distribution systems (image 5) ideally transport the samples directly to the corresponding analysis system and also handle other tasks: the route through the laboratory can be planned and optimised based on the identification of the sample after delivery, whereby many parameters can be taken into account, e.g., the type of container, the preparation, the filling level, and of course the sequence of the individual analysis steps. Brushless DC motors ensure that the sample transport systems accelerate, brake, or stop with pinpoint accuracy, e.g., in front of the analysis stations. They are designed for high reliability and a long service life; they can thus travel many kilometers in automatic distribution systems without wear being a concern. The same applies to motors that are used for pipetting, mixing, or stirring.



Name > FGK Clinical Research GmbH

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|-----------------------|-------------------------------|
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| | edgar.fenzl@fgk-cro.com |
| Website > | www-fgk-cro.com |
| | www.fgk-rs.com |
| | www.fgk-pv.com |
| Number of Employees > | 210 |
| Founded (year) > | 2002 |

Areas of Activity > Full service CRO (contract research organisation) offering a complete range of clinical development and consulting services all over Europe and the US: | Regulatory Affairs | Project Management and Monitoring | Medical Safety | Data Management/Biostatistics | Medical Writing | eSolutions for Clinical Trials | Quality Assurance **FGK Clinical Research has two** daughter companies: "FGK Pharmacovigilance" and "FGK Representative Service". enabling us to offer our clients pharmacovigilance services including services of QPPV and PMSF management as well as legal representation for non-European customers conducting clinical studies or seeking marketing authorisation within the EU/EEA.

External > BVMA - Federal Association of Collaborations Contract Research Organisations

Company overview

FGK Clinical Research is a Europe-based CRO of an ideal size for cooperation with smaller and mid-sized medical device, biotech, or pharmaceutical companies. FGK was founded in 2002 and currently has 210+ employees – most of them located in our headquarters in Munich and our branch office in Berlin, Germany. Covering all phases and areas of clinical development, we have experience in every important medical indication, including in particular oncology, cardiology, neurology, dermatology, and gastroenterology. Broad knowledge in alternative therapies completes our expertise. Besides our services for drug development, we also help to guide all kinds of innovative medical devices through the increasingly demanding framework of clinical investigations.

We directly supervise international projects with own employees located in our German offices and our subsidiaries in the Czech Republic, Hungary, and Poland; For study sites in additional countries such as the US, we have suitable long-term partners.

Our approach to a project

The main philosophy for FGK is to prepare and conduct studies in close cooperation with the sponsor. Thus, we not only closely interact with our clients throughout the project but long beyond, as maintaining a good relationship forms the basis for long-term cooperation. Our operational team works hand in hand with all other departments involved. This also applies for the project manager, who is the central contact person delivering all required information to the sponsor. Timely approvals and efficient trouble-shooting are achieved through a combination of centralised project management and local monitoring, as well as local expertise in regulatory submissions within the country of study conduct.









Services

Regulatory Affairs

- > Consulting on regulatory topics
- Review of study documents (e.g. protocol, informed consent form, labels)
- > CTA with submission to authorities and ECs

Clinical Operations

- > Project management, primary liaison for sponsor communication, status reports, etc.
- > Feasibility, contract negotiations, site management, monitoring, etc.

Medical Safety/Pharmacovigilance

- Adverse Event Management and assessment/reporting
- Drug safety, medical monitoring and coding of medical terms
- > Pharmacovigilance also visit www.fgk-pv.com

Medical Writing

- Investigator's brochures, study protocols, ICF and subject information
- > Clinical expert reports, clinical publications, IMP and submission dossiers

Data Management

- > CRF design and review, clinical trial databases
- Data validation, processing and cleaning, external data handling, CDISC SDTM

Biostatistics and Programming

- > Study design, sample size calculations
- Statistical consultancy, analysis plan, programming and reporting
- > CDISC ADaM

Quality Assurance

- > Audits of investigator site, database and system audits, internal audits
- > SOP composition and implementation

eSolutions

> eCRF, IWRS/Drug supply, eTMF, CTMS



Name > GROB-WERKE GmbH & Co. KG

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| Email | > Stephan.Kowalski@grob.de |
| Website | https://www.grobgroup.com/en/ |
| Social Media | › in 🗸 🖸 🖸 |
| lumber of Employees | > 8,200 |
| Founded (year) | > 1926 |
| Areas of Activity | Complex metal cutting systems with |
| | focus on the automotive industry |
| | Entire assembly systems for |
| | automotive powertrains |
| | Since 2008 – Universal machining |
| | centre for supplier industry, medical |
| | industry, tool and mould industries, |
| | aerospace industry, general mechanical |
| | engineering, energy technology |
| | Since 2021: Addition of the 4-axis |
| | series |
| | Automation solutions |
| | Electromobility: Systems for stator, |
| | rotor, and electric motor assembly |
| | and for battery and fuel cell assembly |
| | Expanded cutting-edge technologies: |
| | Software development |
| | Thermal spraying technology |
| | Machining of frame structure parts |
| | Machining of chassis parts |
| Turbocharger machining Since | |
| | 2022: Presentation of the first |
| GROB Liquid Metal Printing | |
| | Machine (GMP300) from the |
| | additive manufacturing sector |
| Annual Turnover | ŧ1.500 (Forecast 22/23) t t |

Member of



Medical Mountains

GROB-WERKE: Your competent partner in the machining of medical devices

Whether implants, prostheses, or medical instruments: when it comes to medical technology products, the quality has to be one hundred percent right. The dependable and highly precise universal machines from GROB meet the high requirements of the medical and pharmaceutical sectors and guarantee the reliable manufacture of sensitive workpieces. With its state-of-the-art automation and digitisation as well as expert know-how and service, GROB meets the challenges of tomorrow with productive solutions together with its customers.

As a global, family-owned company, GROB-WERKE has been developing manufacturing systems and machine tools for more than 95 years. Its customers include the world's leading automotive manufacturers, their component suppliers, and other companies from a broad range of sectors such as aerospace, tool mould-making, and mechanical engineering. This heritage gives GROB a huge and broad experience in its portfolio, from universal machining centre to highly complex manufacturing systems, and on to manual assembly stations – waiting to be transferred to their customers' production in medical technology. GROB accompanies its customers in the optimisation of production from the machine, through the process and its automation, to digitisation.

With the G150, GROB has now a G-module that fits small working pieces. The formula for success of its innovative machine concept is the horizontal axis configuration. There is no other concept where the Z-guide is closer to the workpiece, guaranteeing an extraordinarily high stability:

- > Maximum reliability and accuracy in repetition
- Exceptionally high stock removal performance with a long service life
- > Use of short, low-wear tools
- Highest shape and position tolerances for complex components

GROB's unique axis concept and the use of torque motors as standard enable:

- Combination of operations
- > Innovative CAM machining strategies
- > Reduced impact of chips due to overhead machining



 Most efficient processing of free-form surfaces with excellent surface quality

For getting the maximum out of the working piece, customers can optimise their machining processes with GROB's 100 application engineers and commissioning engineers worldwide and use the unique advantages of the G-module. Close contact with all renowned tool manufacturers and CAD-CAM manufacturers makes it possible to combine customer processes and the highest productivity with maximum process safety!

Due to the combination of ergonomics suited to a workshop and automation capabilities, the G-Module is suitable for both a job shop environment as well as for series production. On top of that, customers can increase the potential of the machines with GROB automation solutions. GROB offers solutions tailored to medical technology, from workpiece handling and pallet handling to small production cells. The customer can be free of possible sources of error by integrating and automating other work steps.

The software application GROB-NET⁴Industry is the enabler for the digital future. Increasingly strict regulations with fluctuating batch sizes and a growing number of variants, as well as individualisation, present conventional production systems with unsolvable problems. With its GROB-NET⁴Industry software solution, GROB offers a way of productively mastering this complexity. The digital products create manufacturer- and control-independent transparency, guarantee product guality and process reliability, and automate the necessary documentation. With this, GROB closes the circle towards an autonomous, productive, and completely process-reliable production. Service is the guarantee for a long and satisfied partnership, and GROB has always seen itself as a long-term partner to its customers. For GROB, as one of the most important and oldest partners of automotive groups, excellent service worldwide, the shortest reaction times, and fair prices are a matter of fact. From 24-hour service and a comprehensive range of spare parts and training courses to professional machine maintenance and analysis: GROB's service spectrum offers customers a comprehensive range of services and is available worldwide thanks to its global production plants and service branches.



Name > HAMAMATSU PHOTONICS Deutschland GmbH

Areas of Activity > Manufacturer of components and systems

Light-powered innovation

Our mission is to benefit society through the development of technologies that capture, measure, and generate various types of light. That is why we re-invest at least 9% of our yearly revenue into research and development – to maintain cutting-edge quality across 90 types of image sensors, light sources, components, and systems with capabilities that span the spectrum from x-ray to infrared.

Sensors and emitters for visible and invisible light

We are one of the only companies in the world that develops a wide range of both light sensors, such as photomultiplier tubes and photodiodes, and light sources such as lasers, LEDs, and measurement lamps. The components we manufacture measure and generate not only visible light, but also ultra-low, ultraviolet, infrared, and x-ray light.

Components, modules, and systems

Our light sensor and light source components are also available as modules and units with dedicated circuits. These devices can be incorporated into systems we develop, such as optical measurement systems, imaging systems, and image analysis systems.

These products are used in a wide range of applications, ranging from everyday technology such as smartphones to measurement instruments that support cutting-edge academic research.

Member of

HAMAMATSU PHOTONICS



Detecting disease as early as possible

All human beings are susceptible to the risk of disease, which is why early diagnosis is crucial. Hamamatsu Photonics manufactures high-performance devices optimised for medical use, such as positron emission tomography (PET), mammography, and X-ray CT. Throughout the world, our devices play an important role in medical examinations by detecting diseases such as cancer in their early stages.

Medical and bio instruments are a major industry and these are the application for which our products are ideal. Hamamatsu's experience in this market as well as the high quality and diverse range of products we can supply, makes us the ideal long-term business partner over the entire life cycle of your products and beyond.



| Name > | HealthCapital – Cluster HealthCare |
|---------------------|---|
| | Industries Berlin-Brandenburg |
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| Social Media > | ¥ in |
| Areas of Activity > | Technology transfer between science and industry |
| | Initiation and support of networks |
| | Support for technology-orientated Startups |
| | Funding support for innovative project concepts |
| | Providing and presenting regional life sciences information |
| | Building and coordinating scientific and interdisciplinary networks |
| | |
| | Establishing contacts among experts |

from all disciplines | Organisation of events and seminars

External > | Founding member of the Council of Collaborations European Bioregions – CEBR | Member of ScanBalt | Member and contact point in Berlin for the Enterprise Europe Network (EEN)

> | Member of Global Health Hub Germany

Berlin Brandenburg ... a leading hub for life sciences and healthcare

The Berlin-Brandenburg region is Germany's "health capital" and one of the leading international life sciences locations as it is both home to the German government and the centre for healthcare industries. The region's distinction is anchored in its unique research and clinical landscape, as well as its ability to closely link the key players in the life sciences and healthcare. Medical technology, in particular, is a strong driving force within the Berlin-Brandenburg HealthCapital cluster generating innovation and growth there and beyond.

... MedTech meets Innovation

Over 350 medical technology and digital health companies are located in the German capital region. These include market leaders such as Ada Health, B. Braun, Berlin Heart, BIOTRONIK, Cerner, Eckert & Ziegler, Karl Storz, Ottobock, W.O.M. WORLD OF MEDICINE, and Zimmer Biomet. The main activities are focused on digital health, medical imaging, cardiovascular support systems, minimally invasive surgery, as well as orthopaedics. Over the last years the Berlin and Brandenburg medical device community has been marked by technological trends, which can also be observed on a global scale: personalisation and digitisation.

... Key technologies: Artificial Intelligence and Additive Manufacturing

The innovative power of the German capital region around AI is demonstrated by a significant number of healthcare startups. They are pushing the boundaries of traditional healthcare with AI solutions. There is also a very strong research landscape in the field of AI and data with several research groups at Charité, the Berlin Institute of Health (BIH), the Berlin Institute for the Foundations of Learning and Data (BIFOLD), the German Research Center for Artificial Intelligence (DFKI), and other more.

HEALTHCAPITAL



The healthcare sector is also one of the most exciting segments for 3D printing. In the future, customised prosthetics or implants could be developed by using these techniques. For an interface between awareness, concrete development processes and legislation, companies within that segment profit from business networks like Medical goes Additive as a knowledge and transfer platform.

... where startups meet grownups

With their innovative spirit and digital expertise, startups deliver fresh solutions for digital transformation in the healthcare industry. The German capital region is home to over one hundred digital health startups, and the numbers are growing each year. State-of-the-art technologies such as machine learning, artificial intelligence, and big data accelerate new applications. The regional startup ecosystem is highly self-organised and offers young pioneers a broad range of events such as meetups, barcamps, seed camps, and hackathons.

... offering service and support for players in the German capital region

The central contact and coordination office for all issues concerning life sciences and healthcare in the German capital region is the cluster HealthCapital. At the interface of business, science, and clinics, the HealthCapital cluster management drives networking and technology transfer, and supports companies interested in relocating to the region. Berlin Partner for Business and Technology and the Economic Development Agency Brandenburg (WFBB) are responsible for managing the cluster.

Meet us in 2023

DMEA, 25-27 April, Berlin BIONNALE, 16-17 May, Berlin AM Medical Days, 13-14 November, Berlin MEDICA, 13-16 November, Düsseldorf

HOBE micro®

Name > Hobe GmbH | micro tools

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|---------------------|---|------------------------|
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| State | > | Baden-Wuerttemberg |
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| Fax | > | +49-751-56092-18 |
| Email | > | info@hobe-tools.de |
| Website | > | www.hobe-tools.de |
| Social Media | > | in X |
| Number of Employees | > | 33 |
| Founded (year) | > | 1971 |
| | | |

Areas of Activity > | Micro Tooling | Solid Carbide Tools

Boundless enthusiasm for inovation

At Hobe, innovation results from motivation. Our medium-sized enterprise is perfectly dimensioned to foster an effective innovation culture. Thus, every employee is encouraged to contribute creative ideas and new solutions. As a company, we regard our clients' complex demands as welcome challenges, which we meet by delivering seemingly impossible solutions.

Our goal: optimum machining solutions for all industries

Hobe micro-tools are successfully in use worldwide, for example, in the manufacturing of medical instruments, precision mechanical tools, and electronic components. Whether as standard tools, special tools, or custom development: we offer the best machining solution for every industry and application. Our sophisticated tooling systems contribute to making our clients' production processes more efficient, with a convincing combination of innovation, product quality, and profitability.

Quality

We can thank our motivated, highly trained employees and their commitment to deliver our compelling product and service quality at all times to our clients. Accordingly, Hobe produces exclusively in Germany with development and and manufacturing all under one roof. All business processes are reviewed by a certified quality management system according to DIN EN ISO 9001 and are continuously improved. For us, quality means optimum product properties, tailor-made tool and process solutions, and a reasonable price-performance ratio.

Medical technology

The manufacture of medical devices and components requires extraordinarily powerful tool solutions. This is particularly true for materials that pose difficult machining requirements, such as titanium or stainless steel. And this is where Hobe's solid carbide micro-tools excel. Its exceptional performance guarantees the desired dimensional and shape accuracy, as well as surface quality, at all times.

Member of



HOBE MICRO TOOLS









Furthermore, selected carbide grades with outstanding wear and flexural strength ensure a long tool life.

In medical technology, meeting manufacturing precision requirements presents increasingly complex challenges. Medical components are subject to progressive miniaturisation and sophistication. On the other hand, growing cost and time pressures make higher productivity a must.

Typical examples in this field are:

Pacemaker – internal shaping of electrode components Resectoscope – tube fitting (e.g. internal shaping) and lens fitting (e.g. internal grooving)

Implantology

Human implants and prostheses require the highest quality standards. This is the only way to avoid health risks and achieve a long product life. Accordingly, extremely corrosion- and wear-resistant materials are used in the manufacture of medical devices. The Hobe micro tools range includes a wide range of SC high performance tools that are ideal for medical device production.

Hard-to-machine materials such as platinum, titanium, stainless steel, and special alloys present us with special challenges in tool development – which we gladly accept. Through intensive exchange with customers, we have in-depth process knowledge in the field of implant prosthetics and dental technology.

Characteristic examples for implantology include: Dental Implant/Dorsal Stabilisation (pedicle screw) – internal shaping (e.g. thread whirling, processing of multi-edge profiles)



Name > Hartmetall-Werkzeugfabrik Paul Horn GmbH

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| info@de.horn-group.com |
| horn-group.com |
| f in X 🖸 🖸 🔣 |
| 1,400 worldwide, ~ 950 of whom are in |
| Germany |
| 1969 |
| |

Areas of Activity > High-precision tools and accessories for radial grooving, face grooving, profiling, parting off, broaching, mirror turning, threading, machining pipes and sleeves, groove milling, slot milling, slot cutting, thread milling, polygon milling, thread whirling, brilliant finish milling, finish boring, reaming, and drilling. Additive manufacturing / 3D printing processes (selective laser melting), blanks, and wear parts.

Annual Turnover > ~ 260 million euros worldwide in 2021 ~ 189 million euros in Germany in 2021

High-precision tools from Tübingen for the whole world

In 70 countries on every continent, companies in the automotive, chemical, aerospace, medical, and tool and mould-making industries work with tools from Paul Horn GmbH. In addition to 25,000 standard tools, the family-owned company has to date also supplied more than 150,000 special solutions to its customers.

Tools for medical technology

As a precision tool manufacturer, HORN is able to meet the challenges and to constantly work on developing new tool solutions and production strategies for medical technology – from micro end mills for manufacturing sensitive titanium spinal column implants right through to precision tools for grooving aluminium cooling ribs for a pump and heat exchanger. HORN is always building on its expertise in tool technologies in the medical sector.

HORN whirling technology is proof of this know-how

Key advantages of the whirling process include high cutting rates, long threads with high surface quality, deep thread profiles, short chips, multi-threads, and minimal tool loads. However, even with all these benefits, the user has to face various technical challenges. One important aspect is the materials used for bone screws. The cutting edges of the whirling inserts are subjected to extremely high loads when machining titanium, stainless steels, and other superalloys. To counteract edge wear while maintaining the required high machining volume and short processing time, tool manufacturers need to constantly optimise the tools and processes used and develop them further.

Member of

1






HARTMETALL-WERKZEUGFABRIK PAUL HORN

JET-Whirling

With JET Whirling, HORN presents a whirling system with an internal coolant supply. By cooling the cutting edges directly, this system enables long tool life to be achieved. What's more, in conjunction with the stable whirling unit, the system achieves better surface quality on the workpiece and reduces the risk of chip build-up between the inserts. Surface quality plays a major role in the production of bone screws. Every groove or ridge can be a breeding ground for germs.

Broaching an internal hexagon socket

"Manufacturing a hexagon in titanium is relatively easy using profile broaching. Broaching in series production in cobalt-chromium, however, is virtually impossible due to its high strength and the significant tool wear," says a German user from the medical technology sector. Due to this issue, HORN engineers proposed producing the hexagon socket using the shaping method. The method offers high precision and high process reliability, as the cutting geometry and the carbide substrate can be easily adapted to the material being machined. The first tests quickly found the solution required. "The shaping tool makes it possible to produce precise fits and the surface quality is very good," says the user.

Implant 4.0

Digitalisation has also been playing an increasingly important role with implants in recent years. You can already find intelligent implants that can be controlled via an app, in pacemakers or valves for regulating intracranial pressure. We can only speculate about what the future will bring but virtually every part of the body could be controlled using an intelligent implant in the event of a dysfunction: bladder, epilepsy and brain stimulators, retina implants, dispensing systems, and artificial pancreases – the list gets longer the more scientists, doctors, and engineers you ask. As the technology advances, HORN will be there, providing the tools required.



Name > Hugo Beck Maschinenbau GmbH & Co. KG

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|-----------------------|----------------------|
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| Contact Person > | Timo Kollmann |
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| Fax > | +49-7123-87268 |
| Email > | kollmann@hugobeck.de |
| Website > | www.hugobeck.com |
| Social Media > | y in 🖸 |
| Number of Employees > | 110 |
| Founded (year) > | 1955 |

Areas of Activity > | Horizontal film packaging machines, flowpack machines, paper packaging machines, automation solutions, robots, and handling systems

Complete solutions for horizontal packaging in film and paper

HUGO BECK is a world leading specialist in horizontal film packaging machines, flowpack and paper packaging machines as well as automation solutions with the range of 3,000 to 18,000 cycles/hour. We provide a complete range of machine solutions for flowpacks, poly bags, and shrink packs as both primary and secondary packaging.

Our latest paper packaging solutions underline our commitment to the continued development of innovative machine technology and sustainable packaging solutions to help meet environmental objectives. Whether maximising production efficiencies and replacing plastic films with paper or minimising packaging materials used, our team is on hand to highlight savings that can be effectively achieved in the production of film and paper bags and shrink packs.

High-grade customised installations

While relevant for all industries, HUGO BECK's customised film packaging and automation solutions are particularly significant for the pharmaceutical and medical technology sectors. The packaging systems used, most of which are designed as high-grade customer-specific installations, guarantee the greatest possible precision of reproduction; in other words, packaging ready for sale, right from the very first product onwards. And it goes without saying that we meet the highest requirements in terms of cleanroom hygiene, documentation, and safety, while on the systems side, we achieve absolute traceability throughout the process (Track & Trace). Upon request we provide our clients with validation, qualification, and GMP certification service.

As the trend towards automation continues to increase, HUGO BECK also uses robotic systems as part of the packaging line and integrates various handling systems.



HUGO BECK











Safe and hygienic, airtight, and high-barrier packaging

The combination of air-tight, high barrier packaging and flexibility across different product sizes and bundles, makes HUGO BECK's flowpack machines ideal for applications in this area. The equipment is designed to conform to the highest documentation and safety standards. In addition, by processing a range of substrate solutions, materials such as composite and barrier films of various thicknesses, polypropylene and polyethylene mono-material, as well as Tyvek® can all be used for flowrapped primary packaging.

With flowpack machines, it is also possible to switch to paper-based packaging with a minimal sealable coating, which means that the paper still remains recyclable.

Additional functionality, such as packing under modified atmosphere (MAP), automatic film-changing devices, or the dispensing of leaflet inserts are only a few examples of user-specified options.

Upon request, all HUGO BECK packaging machines are available in stainless steel or hygienic design to meet the stringent requirements for packaging in this sector.

As an alternative to flowpack machines, we offer film packaging machines for poly bags and shrink packs. Here, the focus is more on product protection and transport, implemented as primary or secondary packaging. All types of film can be processed, including PE/PO/PP mono-material and bio films.



Name > IFOHRA GmbH

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|--------------------|--------------------------|
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| Website > | www.ifohra.de |
| Social Media > | in |
| Founded (year) > | 2021 |

IFOHRA – Institute for Healthcare, Robotics, and Automation

IFOHRA combines expertise from industry and healthcare to implement innovative and human-centred solutions that increase efficiency in the health market.

As a spin-off of Medical Valley, IFOHRA has a crosssector partner network, such as the Ostbayerische Technische Hochschule Amberg-Weiden, MSE-Solution PointOut, and more. We are also developing long-term technology plans within the 5G infrastructure and the digitisation of clinical processes. Medical Valley is one of the most dynamic ecosystems in the healthcare industry, both nationally and internationally. Its location in the European Metropolitian region of Nuremberg gives IFOHRA easy access to the vast Medical Valley Network. We bring robotics, automation, and digitisation to healthcare. As an independent institute, we analyse processes and implement individual business casebased solutions.

CMMI – Maturity model

Digitisation has now arrived on the agenda of German hospital managers – almost 90% say they have a digitisation strategy.

In cooperation with the Ostbayerische Technische Hochschule Amberg-Weiden (OTH), we have developed a CMMI maturity model to better evaluate investmentrelated decisions in hospitals. Due to the lack of time and resources, it is very difficult for hospitals to conduct internal evaluations at regular intervals, and thus high-investment decisions are often made on the basis of incomplete information. With the implementation of a CMMI process maturity model we can provide a transparent overview and thereby help hospitals derive concrete decisions based on recommendations from a scientific model.

The maturity model developed at IFOHRA and OTH is a compilation of questionnaires targeted to various hospital staff including the management, IT personnel, nurses, and doctors. These questionnaires are evaluated with a neutral grading system that can be used to benchmark against different hospitals. The situation on site is evaluated based on a comprehensive questionnaire. This evaluation method can be used in the outpatient









IFOHRA



CMMI- Maturity Model

IFOHRA Portfolio of Products

- Method for objective assessment of processes qualitative and quantitative
- · Analysis of core processes and supporting processes - benchmark-based
- Scientific research based recommendations for investment

SQCDP- Shop Floor Management

- SQCDP Method S (Safety) Q (Quality) C (Cost) D (Delivery) P (Personnel)
- Originally developed from the Toyota Production System as part of the Lean Philosophy





Vendor Managed Inventory

- Infrastructure for event-driven, automated support and monitoring of manual process steps
- · Process efficiency by reducing manual interventions and administation efforts

Market entry studies

· Support for international companies in developing their products for the German healthcare market



- Customized studies as well as easy access to our aualified healthcare network for faster growth and better results
 - Integration



and inpatient sector and offers the opportunity to show the difference between the current and possible state of care in a structured way.

The health providers will receive concrete recommendations for action and, if desired, assistance in implementing them in the daily routine of the clinic.

SQCDP – Shop Floor Management

The SQCDP method is part of Lean Management and originally emerged from the Toyota Production System as part of the Lean philosophy. By using SQCDP, hospitals can make their processes more efficient and transparent, use resources more efficiently, save time, money and improve quality all at once. For this reason, local teams are selected with the support of their local managers. They benefit from the experience of their staff, who are sensitised to identify and remedy potential problems. At the same time, this results in improved communication across different hierarchical levels. SQCDP stands for Safety, Quality, Costs, Delivery, and People, thus addressing the essential elements for managing a department or hospital. Relevant KPIs are recorded and measures for optimisation are derived.

VMI – Vendor Managed Inventory

Vendor Managed Inventory (VMI) is a method that enables automated use of the infrastructure, regulated support, and monitoring of manual processes. This establishes automated ordering and replenishment processes for consumables with suppliers through assured transparency in stocks and consumption.

The Asset-Management recognises the status and location of a medical product and informs the necessary services about its status change, while taking privacy matters into account. VMI ensures no more searching, hoarding, or inefficient inventory management.

Market-entry studies

We support international companies in developing their products for the German healthcare market. We develop customised studies and provide easy access to our qualified healthcare network for faster growth and better results.

KENDRION

Name > Kendrion Kuhnke Automation GmbH

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|-----------------------|---|--------------------------|
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| Email | > | sales-ics@kendrion.com |
| Website | > | Kendrion.com |
| Social Media | > | 🖬 🎔 in |
| Founded (year) | > | 1928 |
| | | |

Areas of Activity > | Solenoid Technology | Fluid Technology | Control Technology Kendrion Kuhnke Automation is your specialist for solenoid, fluid, and control technology and offers safe, precise, and innovative components and assemblies for many application areas.

Kendrion Kuhnke Automation is part of the Industrial Division of Kendrion N.V. and operates as the Industrial Actuators and Controls (IAC) business unit.

Solenoids & Actuators

In the development and production of solenoids and actuators, Kendrion Kuhnke Automation benefits from more than 100 years of experience and offers a broad product portfolio. This ranges from various linear solenoids, rotary solenoids, holding magnets, oscillating solenoids, and permanent magnets to optical beam shutters, different locking solenoids, and door lock systems to reliable power pinch valves, which are able to clamp even PVC tubes. Our solenoids and actuators are universally applicable and mainly used in medical technology, such as dialysis machines, imaging systems, anaesthesia and respiration equipment, cobots, dental units, and treatment & therapy equipment. Our secure locks are suitable for ambitious locking tasks and numerous applications such as centrifuges and disinfection equipment.





Valves & Fluid Control

In addition, Kendrion Kuhnke Automation is a manufacturer of smart pneumatic and fluid technology solutions and specialises in the development of custom valves, valve blocks, and pressure regulators. The portfolio consists of direct operated solenoid valves, fluid isolation valves, mechanically & pneumatically actuated valves, pilot-operated valves, and proportional valves, as well as different pressure regulators and various accessories. Precise and reliable control of liquids and gases is essential for the high quality demands of medical technology. Our valves are well-known for their high reliability, whether as a solenoid valve for e.g. pressurised air or a fluid isolation valve for e.g. dialysis fluids, as a manually or mechanically actuated valve for oxygen, or as a proportional valve for the dosing of potable water or gases. Kendrion valves can be found wherever optimum performance must be achieved within restricted space.

Learn more about Kendrion at www.kendrion.com.



A Member of Brückner Group

Name > KIEFEL GmbH

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|---------------------|---|---------------------------|
| Postal Code/City | > | 83395 Freilassing |
| State | > | Bavaria |
| Email | > | medical-pharma@kiefel.com |
| Website | > | www.kiefel.com |
| Social Media | > | in |
| Number of Employees | > | Around 900 worldwide |
| Founded (year) | > | 1945 |
| | | |

Areas of Activity > Medical & Pharma, Fibre and Polymer Packaging, Appliances

Kiefel – The right technology for medical & pharmaceutical bags and specialist products

For over 50 years, Kiefel has been providing the perfect solutions for the cost-effective and reliable production of high-quality products for the medical and pharmaceutical sector. As a supplier of advanced technology and proven machine concepts, we offer extensive competence and global experience in e.g. Radio Frequency (RF) and Thermo-Contact (TC) welding technology. With proofs of concept, we support our customers in product development on their way to success. In our Technology Centre we continuously improve processes and techniques, guaranteeing our leadership in innovation.

An extensive portfolio for your requirements

Our portfolio covers the full range from standardised devices to custom machinery. It includes fully- and semi-automatic production machines for e.g. IV, nutrition and CAPD bags, pharmaceutical containers, 2D and 3D bioprocess bags, blood bags and blood filters, urine catheter and drainage bags, and ostomy pouches, as well as for specialist products.

Our goal is to consistently create even more added value and advantages for our customers: from standard shuttle tables and tabletop filling units, to compact pouchmaking machines, to high output bagmaking lines and Form-Fill-Seal solutions.











The SOLUTIONPERFORMER – The New Generation of Form-Fill-Seal Machines

Improving healthcare and increasing the quality of life of our customers' patients are Kiefel's top priorities. Therefore, we recently launched a modular and highly efficient Form-Fill-Seal machine series with an outstanding price-performance ratio: the SOLUTIONPERFORMER KFS – for top-quality infusion, multi-chamber, or CAPD bags. Bagmaking, bag filling, and sealing are fully integrated within one unit.

This enables the production of up to 6000 bags/hour, offering an intuitive user interface, clean design, fast tool change, and much more. Even though it is a standardised system, it offers flexibility for a variety of options:

- > Single-chamber or multi-chamber bags with peel seal,
- > Single or multi-layer films,
- > Tube or port connection,
- > Single or double wound film,
- > Residual oxygen control,
- > Printing of static and dynamic data,
- > and much more.

Global service network

Of course, we are there for you even after a project has been completed. The aim of Kiefel customer service is to ensure that the very best practices apply throughout the service life of the Kiefel equipment. With our global network of highly trained service engineers, the 24/7 on-call duty option, and our digital Kiefel Portal for parts, machine documentation, and training we also go the extra mile for our customers.

Our full commitment is reflected by the maximum uptime and high residual value of your machines.



Name > Klingel medical metal GmbH Address/P.O. Box > Hanauer Strasse 5–7 Postal Code/City > 75181 Pforzheim State > Baden-Wuerttemberg **Contact Person** > Balf Petrawitz Telephone > +49-7231-6519-0 Fax > +49-7231-6519-70 Email > info@klingel-med.de info@klingel-group.de Website > www.klingel-med.de/ www.klingel-group.de Social Media 🖬 in 🛚 🖸 Number of Employees > 330 (870 group) Founded (year) > 1986 Areas of Activity > Contract manufacturer with one-stop shop service for the medical application fields: | dental (implants, abutments, instruments) | orthopaedics and trauma (implants and tools for spine, hip, knee) | endoscopy (housings, guiding parts, optical parts) | cardio(vascular) systems (micro parts for blood supply, heart valves, pacemakers) I robotic assisted surgery (endoscopic parts, housings, joints) I medical devices (sensor and light housings, parts and assemblies with mechanical function) Annual Turnover > €29,7m (€78,5m group) in 2021 External > Member of Klingel medical group with **Collaborations** its partner companies | Klingel medical metal GmbH, Pforzheim (D) | Josef Ganter Feinmechanik GmbH, Dauchingen (D) (since 2015) | Bächler Feintech AG, Hölstein (CH) (since 2019) | Puracon GmbH, Rosenheim (D) (since 2020) | Ruetschi Technology AG, Muntelier (CH) (since 2021)

Metal Precision for Medical Purposes

Since its founding more than 30 years ago, the Klingel medical metal GmbH has developed into a Europe-wide leading company in the area of precision engineering. The machining specialist manufactures high-precision, functional components from hard-to-machine materials, primarily stainless steel and titanium, in uncompromising quality and technical aesthetics. The customised products of the full contract manufacturer meet the highest standards of medical technology and other sectors, such as measurement and control technology and aviation and aerospace. The high-quality services with their long-standing core competences in precision CNC-machining are based on decades of experience and expertise in the specific characteristics of the materials. Klingel medical metal is certified according to DIN EN ISO 13485:2016 and is FDA-registered. The 330 emplovees work in compliance with certified and traceable process instructions, which are reliably documented.

Together with Josef Ganter Feinmechanik in Dauchingen, Puracon in Rosenheim, Bächler Feintech in Hölstein and Ruetschi Technology in Muntelier (both Switzerland), the company belongs to the Klingel medical group with its headquarters in Pforzheim. The "mother company" of this merger has four plants in the industrial zone "Altgefäll" with a total production area of 16,000 square meters. The unparalleled one-stop shop of the Klingel medical group with its four partners offers its customers a large selection of technologies and a wealth of experience in processing complex, hard-to-machine materials and geometries. The meticulously planned process and interface management ensure maximum efficiency and reduced throughput times. With its sustainable growth strategy, including continuous investments in stateof-the-art machinery engineering, new manufacturing technolgies, and automation, the Klingel medical group stands for long-lasting partnerships. Our customers rely on the highest quality in metal and plastics precision with minimal tolerances and maximum functionality made in Germany and Switzerland.



One-stop-shop for medical components

Klingel medical metal manufactures and finishes medical parts such as dental implants as well as orthopaedic and spine implants and tools, but also instruments and components for endoscopy, minimally invasive and robotic surgery, (cardio)vascular systems, and medical devices. Based on our high in-house competence for a broad, customised value-added service, we work on more than 200 CNC turning and milling centres and special machinery. Our highly qualified staff are experts at the conjunction of raw material specifications and process know-how for CNC machining, assembling, and surface finishing.

From small and mid-size series up to six-digit mass production quantities, Klingel medical metal produces high-precision mechanical CNC turned and milled parts, wire-eroded components, and ready-to-install and 3-D free-form components – even at short notice if required, and with packaging and logistics included.

We can establish your individual manufacturing process in our one-stop-shop system, which includes

- > Design for manufacturing /Prototyping
- Metal laser sintering
- > Machining (turning/milling/erosion)
- Injection moulding
- > Cleaning
- Surface finish (electropolishing, anodising, coating, grinding)
- > Laser welding, cutting and marking
- > Assembly, 100% inspection, sterilisation
- > (Sterile) Packaging
- > Logistics





Name > KOCH Pac-Systeme GmbH

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|---------------------|--------------------------------|
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| State | > Baden-Wuerttemberg |
| Contact Person | > +49 -7445181-0 |
| Telephone | > +49-7445181-50 |
| Email | > info@koch-pac-systeme.com |
| Website | https://koch-pac-systeme.com/ |
| Social Media | > 🖬 in 🗶 🖸 🖸 |
| Number of Employees | > Over 500 employees worldwide |
| Founded (year) | > 1969 |

Areas of Activity > Special machine manufacturer of custom blister machines as well as packaging lines featuring modular designs.

Annual Turnover > €70m

KOCH Pac-Systeme – Perfectly Packaged Diversity

"Thinking for tomorrow. Acting today." This has been the guiding principle of KOCH Pac-Systeme for over 50 years. For future-proof, modular machine solutions, custom engineered to create the perfect combination of packaging technology and design. With consistently reduced material consumption and eco-friendly packaging types, such as cycleForm[®] made of formable paper – and winner of the German Packaging Award 2021.

Consumer products, contact lenses, or healthcare: the specialists at KOCH contribute their extensive expertise to every project. Partners for high-quality packaging solutions, their offerings range from individual machines to completely integrated packaging processes with a KOCH packagingLine. For every machine solution, KOCH provides lifetime support, and a K 4.0 digital services package that boosts productivity and machine availability.

Portfolio

Whether it is a pen or a brake disc, medical implants or pharmaceutical products, monthly lenses, or eye drops. Regardless of which product from the consumer goods, healthcare, or contact lens sectors customers want to package, KOCH Pac-Systeme has the right blister machines, sustainable packaging types and solutions, cartoners, and integrated packaging lines to meet customer's needs.

KOCH is one of the five strong brands that make up the Uhlmann Group and uses the global service network and extensive know-how of the Group to deliver optimised production and packaging processes.

KOCH-PAC-SYSTEME



By your side

To design the optimal blister packaging solution, KOCH experts support the customer throughout the entire design process all the way to the commissioning of the system on site. Comprehensive services and technical support allow the efficient operation of a custom KOCH packaging machine or KOCH packagingLine.

KOCH and sustainability

The best packaging process today and in the future is smart and sustainable – a complete solution combining customized packaging technology and design. With reduced product-to-packaging ratio, optimum utilization of the machine format, and innovative processes and techniques that help you save material and make your processes even more productive. Sustainability with KOCH also stands for a variety of eco-friendly packaging types that protect the product, represent the brand, conserve resources, and achieve full recyclability.



Name > Gebr. Brasseler GmbH & Co. KG – Komet Medical

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|---------------------|---|--------------------------|
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| State | > | North Rhine-Westphalia |
| Contact Person | > | Andreas Balfanz |
| Telephone | > | +49-5261-701578 |
| Email | > | abalfanz@kometmedical.de |
| Website | > | www.kometmedical.de / |
| Social Media | > | in |
| Number of Employees | > | 1,350 |
| Founded (year) | > | 1923 |
| | | |

Areas of Activity > Contract Manufacturer with one-stop shop service for surgical disposables for bone preparation: | drill bits | saw blades | high-speed drills | fixation pins | MIS burrs | rotary instruments (diamond, carbide, stainless steel) | Dental implants, implant drills, and insertion instruments

Annual turnover → €36m (€197m group) in 2022

100 years of operation, 100% family-owned, 100% independent

Komet Medical is one of the leading independent suppliers of motor-driven surgical tools such as bone drills, saw blades, fixation pins, MIS burrs, and rotary instruments/burrs (diamond, carbide, stainless steel).

As a comprehensive solution developer and service provider for medtech companies in bone surgery, we offer a unique combination of technologies and capabilities – from design to final approved product – and we are fast and flexible in doing so. Komet Medical as a business unit is firmly anchored in the organisation of a successful and 100% independent family business.

Your Contract Manufacturer for Surgical Powered Instruments

Komet Medical develops and produces motor-driven instruments and tools for surgical bone preparation. Among these tools are bone drills, saw blades, milling cutters, and fixation pins for the fields of orthopaedics, traumatology, ENT/neurosurgery, and maxillofacial surgery. The range of services covers the complete design development process, from development and production to worldwide certifications. The decisive factor here is the customer's requirements. The company was founded exactly 100 years ago and is still 100% family-owned. Komet employs over 1,350 people worldwide. As a manufacturer, we are certified according to ISO-13485:2016 (MSDAP), EN ISO-13485:2016, ISO-9001:2015, and Directive 93/42/EEC and AEO. Furthermore, we are certified according to the EU MDR. Komet Medical's circle of customers includes well-known implant and power tool manufacturers from different disciplines.











GEBR. BRASSELER GMBH & CO. KG – KOMET MEDICAL

Our portfolio:

Product groups:

- > Surgical saw blades
- > Bone drills & reamers
- > Pins, screws, and drives
- > Rotary instruments
- > Implants

Markets we serve:

- > Orthopaedics
- > Foot & Ankle
- > Knee / Hip / Shoulder
- > Trauma
- > Spine
- > ENT-/Neurosurgery
- > OMF
- > Robotic Surgery
- > Dental Implantology

We support the set-up and updates of technical files:

- > FMEAs
- > Riskmanagement / Biocomp
- > V&V
- > Process validation
- > Cleaning/Packaging validation
- > SPC/CAQ
- > CAD/CAM

We provide support for

- > Label content
- > CE and FDA Registration
- > Country registration / Product approval
- > Canadian Licensing
- > PMA Submission
- > Pre-market Notifications



Name > KUMAVISION AG

| Address/P.O. Box > | Oberfischbach 3 |
|-----------------------|------------------------|
| Postal Code/City > | 88677 Markdorf |
| State > | Baden-Wuerttemberg |
| Contact Person > | Siegfried Kratsch |
| Telephone > | +49-7544-966-200 |
| Fax > | +49-7544-966-101 |
| Email > | kontakt@kumavision.com |
| Website > | www.kumavision.com |
| Social Media > | fi 🛩 in 🤾 🖸 |
| Number of Employees > | 850 |
| Founded (year) > | 1996 |
| | |

Areas of Activity > KUMAVISION is a leading provider of ERP industry software for medical technology companies. CRM and business intelligence as well as DMS and IoT solutions complement the portfolio of the Microsoft Gold Partner. I Integrated ERP industry software for all business units

- | Mapping of regulatory requirements (MDR, ISO 13485, FDA, UDI)
- Best practice processes for medical technology manufacturing and medical device distributions
- I New business models (pay-per-use, predictive maintenance)
- | Direct IoT integration into ERP software
- | CRM, business analytics, mobile apps
- | Digital transformation consulting.
- International projects as well as group integration
- 25 years of experience,
- 2,000 successful projects

Annual Turnover > €107m (2021)

ERP industry software for medical technology companies

KUMAVISION's integrated ERP industry software based on Microsoft Dynamics 365 supports medical technology companies by mapping the entire product lifecycle in a single software solution for all business areas.

Your benefits: More efficiency through automated processes, more transparency through up-to-date key figures, more compliance through consideration of regulatory requirements and more future-proofing through a modern technology platform.

Compliance as standard

Over 350 best-practice processes in the industry software ensure that regulatory requirements (MDR, ISO 13485, FDA, UDI, ...) are always met. Seamless traceability as well as approval workflows and audit trails contribute to this. Whether serial and batch numbers. expiry, sterile and production data, the documentation of the used production equipment, or external production processes: KUMAVISION's industry software with integrated DMS system provides all the necessary functions for meeting regulatory requirements. In quality assurance, random sampling, test orders including test equipment handling and automated supplier evaluation ensure a consistent high level of quality. The risk and complaints management (FMEA/CAPA), which is also integrated, covers the entire product life cycle from research and development to procurement, production and after-sales service. The ERP software also offers comprehensive UDI support including printing and automated upload (GUDID/EUDAMED).

Ready for validation

The KUMAVISION industry software is fully validation capable. Various validation packages including numerous templates and service offers support you on your way to a successful validation.



Digital transformation with KUMAVISION





Actives Central Actives Active Acti

uppers Asibiance a free charanses the leaves the le

KUMAVISION

Your partner for digital transformation

With KUMAVISION, you are not only choosing ERP industry software for medical technology. You are choosing the ground-breaking technology platform Microsoft Dynamics 365, which provides all business applications from ERP to CRM for sales, service and marketing to business analytics, Office 365 as well as IoT in a unified ecosystem – without any data silos.

Whether new business models such as pay-per-use or predictive maintenance, direct IoT integration in the industry software for automated documentation of production parameters, or paperless workflows including offline-capable apps for the field service: with KUMAVISION you lay the foundation for the successful digital transformation of your company. Our experts offer you holistic consulting and support from strategy to implementation and operation.

About KUMAVISION

KUMAVISION is one of the world's leading partners for Microsoft Dynamics 365 Business Central.

Over 850 employees and the experience from 2,000 successful projects stand for a unique combination of industry, consulting and technology competence.



Name > MAPAL Dr. Kress KG

| Address/P.O. Box | Obere Bahnstraße 13 |
|---------------------|---|
| Postal Code/City | 73431 Aalen |
| State > | Baden-Wuerttemberg |
| Contact Person > | Jochen Schmidt |
| Telephone > | +49-7361-585-3893 |
| Email > | jochen.schmidt@mapal.com |
| Website > | https://mapal.com |
| Social Media | noy x |
| Number of Employees | 5,000 |
| Founded (year) | 1950 |
| Areas of Activity | Precision tools, tooling solutions, services: |
| | Reaming and fine boring |
| | Drilling, boring, countersinking |
| | Milling |
| | Turning |
| | |

| Clamping

- | Actuating
- | Setting, measuring, dispensing

and

- | Engineering services
- | Maintenance services
- | Logistics services
- | Training services

MAPAL – the technology partner for your machining challenges

MAPAL Präzisionswerkzeuge Dr Kress KG is one of the leading international suppliers of precision tools for the machining of practically all materials. Founded in 1950 in Aalen, the family-owned company grew from a small manufacturer of reamers for the fine machining of bores to a worldwide operating company group with a comprehensive range of tools and services for machining operations.

From the start, MAPAL placed great importance on the close relationships with customers while relving on the latest technologies. With its innovative strength, the company is regularly a pioneer of trends and standards in production and machining technology, MAPAL is a technology partner, supporting its customers with the development of time-saving, resource-conserving, and cost-effective machining processes using both standard tools and individual tool concepts - carefully balanced for the customer's success. The integration of additive manufacturing in production opened up new opportunities in tool design and increased the level of customer orientation even further. Sustainability is also a major driver in the design of production processes. MAPAL therefore makes use of a variety of measures to guarantee the responsible use of resources, to protect the environment, and to keep CO₂ emissions to a minimum.

Close dialogue and therefore the early identification of technological requirements and approaches for innovations are an essential pillar of corporate policy. MAPAL is consequently represented with production and sales subsidiaries in 25 countries, enabling short distances, close personal contacts, and long-term partnerships. Additionally MAPAL products are available in 19 further countries via trusted sales representatives.



MAPAL DR. KRESS









Tooling solutions for high-precision medical parts

With a focus on the precision machining of implants, MAPAL supports its customers in the medical industry with high-performance solutions for the complete machining of challenging components. To help customers in their success, MAPAL can rely on many years of experience in the machining of biocompatible workpiece materials and applications from the die and mould industry. State-of-the-art titanium tools for milling, drilling, and fine machining meet the highest requirements with regard to precision, performance, and economic efficiency. Hydraulic clamping chucks from the UNIQ series enhance the productivity of the tools, offering unique properties in terms of function and design themselves. Tailored tool management solutions, including dispensing systems, complete the product range MAPAL offers its partners in the medical industry - in close cooperation, worldwide.

MIKRON TOOL

Name > Mikron Germany GmbH Abteilung Werkzeuge

| > | Berner Feld 71 |
|---|---|
| > | 78628 Rottweil |
| > | Baden-Wuerttemberg |
| > | Simon Sprissler |
| > | +49-741-5380-450 |
| > | +49-741-5380-480 |
| > | info.mtr@mikron.com |
| > | www.mikrontool.com |
| > | in 🖸 |
| > | 245 (worldwide) |
| > | 1998 |
| | |
| | >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> |

Areas of Activity > Development and fabrication of cutting tools

Annual Turnover > €45m Relevant R&D budget > €1.4m

> External > DMQP (DMG MORI Quality Products)-Collaborations Programme

Member of

MedicalMountains

Tools are our passion, small dimensions are our specialty, and hard-to-machine materials are our challenge. Every day at Mikron Tool is dedicated to achieving the best possible results in these areas.

Mission – Mikron Tool

We are working daily to achieve a leading position worldwide in the high-precision machining of small dimensions and challenging materials. This includes the regular development of new and unique tools as well as customer-specific solutions. In everything we undertake, a high level of competence is important. Focusing on our strong points is the key to our success. These include our well-trained and motivated employees, intensive development activities and investment in the most advanced production technologies.

MedTech Solutions - the tool range

The highest quality, precision, and process reliability are some of the main criteria when manufacturing medical devices, wether you are speaking about implants (trauma, prostheses or screws), instruments, or devices. This is exactly where our strength lies: in the development of carbide cutting tools for machining high-quality and biocompatible materials such as stainless steels, titanium, or chrome-cobalt alloys. We offer standardised tools for drilling, milling, and deburring in a diameter range from 0.1 to 8 mm as well as customised solutions up to 32 mm for all machining operations.

Latest innovations

A product is considered NEW at Mikron Tool only when it is unique and with high added value for the user. Without a doubt, this is true for every single CrazyLine product. For example:

For each titanium the right drill!

Titanium is a challenging material in terms of machining technology. Not all types of titanium are the same. Depending on if the material is pure titanium or alloyed titanium machining behavior varies. Therefore Mikron

MIKRON TOOL





CrazyDrill Cool Titanium

Tool has developed perfectly tailored drills, the Crazy-Drill Cool Titanium, for the respective titanium grades, which guarantee high cutting values, process reliability and excellent hole quality in the diameter range from 1.0 - 6.35 mm.

Reducing machining time for bone plates

Integrated cooling, high- performance coating and carbide, adapted cutting geometry, all combined with an optimised cutting strategy – these are some of the features of our performance cutting tool package (CrazyDrill and CrazyMill product lines). With this we are able to reduce the machining time from two hours to 48 minutes for a distal radius plate made of titanium.

Technical support

How to produce a new part with the best adapted tools? What is the right tool for a new material? How to optimise quality and cycle time in an existing process? How to be more efficient and maximise my possible cost saving? Shall I use standard tools or rely on a special solution with combined tools? To answer all these questions, we are at your disposal with our Technology Centre and our specialised cutting tool team!

Quality made in Switzerland and Germany

All our tools are produced in Switzerland or Germany, where identical production facilities, machine programmes, measuring instruments, and skilled tool grinders guarantee the same level of quality for all our products.



Name > MÖLLER Medical GmbH

| Address/P.O. Box | > | Wasserkuppenstr. 29-31 |
|---------------------|---|--------------------------|
| Postal Code/City | > | 36043 Fulda |
| State | > | Hesse |
| Contact Person | > | Michael Frank |
| Telephone | > | +49-661-94195-115 |
| Email | > | info@moeller-medical.com |
| Website | > | www.moeller-medical.com |
| Number of Employees | > | >360 |
| Founded (year) | > | 1949 |
| | | |

Areas of Activity > MedTech + LifeSciences

Always a clever solution

MÖLLER has been in business for over 70 years. Even then, the young company was already committed to serving medical progress – with a clear focus on innovation and growth.

We provide future-oriented innovations that move our customers forward and create real value on a sustainable basis. From founders to startups to concerns we are flexible and open for innovative products and collaboratve teamwork.

Certified - for safety

ISO9001 and ISO13485 certified MDR, FDA

Passion and technology are our identity

For more than 2 decades, we have helped our customers to reach its next-level product design on their product roadmap. From technology scouting, feasibility checking, prototyping, and verification to accreditation and product life cycle, we provide everything within an agile framework.

With over 360 experts with different focuses, we create products that help people get healthy with state-of-the art technology.

Example projects:

- > Cool flow pump for cardiology ablation
- > VAC Stent
- > Sterilisation pump for pharma
- > Thorax drainage device with active disposables
- > Dialysis pump systems

MÖLLER MEDICAL





Technology is here

Over the last years, we have developed a platform for active medical devices with a focus on handling liquids from the human body or infiltrating solution into the human body. Especially when a system e.g. a peristaltic pump together with a disposable is needed, we perform projects to find the right components and the perfect parameters to tune the system for high precision and reliability.

A modular system allows fast time-to-market. Paired with a strong network of specialists, research institutes, and key opinion leaders, these are some of the qualifications we use to lead our customers to success:

- > Embedded System Engineering
- > Design Study and Additive Prototyping
- > Design to Manufacturing and Design to Cost
- > Technology Scouting

Manufacturing Expert

MÖLLER develops components starting from single units up to high volumes. We use established technologies and have sound experience in:

- > Laser technology
- > Surface technology
- > Bonding technology
- > Precision mechanics for kinematic systems
- Housing technology



Name > MULTIVAC Sepp Haggenmüller SE & Co. KG

| Address/P.O. Box > | Bahnhofstr. 4 |
|-----------------------|------------------------|
| Postal Code/City > | 87787 Wolfertschwenden |
| State > | Bavaria |
| Telephone > | +49-8334-601-0 |
| Fax > | +49-8334-601-199 |
| Email > | muwo@multivac.de |
| Website > | www.multivac.com |
| Social Media > | 🖒 Y in ベロ |
| Number of Employees > | 6,900 |
| Founded (year) > | 1961 |
| | |

Areas of Activity > MULTIVAC is one of the leading providers worldwide of packaging solutions for food products of all types, life science and healthcare products, as well as industrial items. Reliable packaging solutions for the life science and healthcare industry

In 1968 MULTIVAC launched its first packaging solution for sterile medical products. What at that time began as an offshoot of the core business of food packaging solutions, is today a highly specialised business unit, which develops solutions for the automated packaging to GMP standards of medical items, pharmaceuticals, and biotech products.

Packaging solutions from MULTIVAC – flexible, modular, intelligent

Changing regulations, shorter life cycles for products, and the transition to just-in-time production have resulted in ever smaller batch sizes in the medical industry and pharmaceutical sector. At the same time, the industry is developing increasingly complex and sensitive products and applications, which in some cases are even tailored to individual patients. Many products are also having to be packed in ever smaller batches in order to meet regional and statutory specifications. These trends require packaging machines that can be converted quickly and easily to other pack formats or

For these applications MULTIVAC provides flexible and customer-specific packaging solutions, which are characterised by their modular construction. This means that new components, such as identification and inspection solutions, can be integrated very easily.

materials, so that short set-up times can be achieved.

To ensure strict compliance with the statutory requirements within the sector, MULTIVAC offers a wide range of innovative packaging solutions. This machine concept is specially designed for the demands of the life sciences and healthcare industries, and it takes into consideration aspects of the packaging machine such as process reliability, ease of cleaning, cleanroom compatibility, and compliance with requirements on cleanliness.



MULTIVAC



MULTIVAC is also working on the development of digital solutions and services, so that it can offer companies the required added value. Thanks to its comprehensive sensor system and seamless digitisation, the RX 4.0 thermoforming packaging machine creates a completely new dimension in terms of maximum packaging reliability and consistent pack quality. The machine is also prepared for networking with the MULTIVAC Cloud, and this offers even more potential uses in digital services, for example.

About MULTIVAC

MULTIVAC is one of the leading providers worldwide of packaging solutions for food products of all types, life sciences and healthcare products, as well as industrial items. The MULTIVAC portfolio covers virtually all manufacturer requirements in terms of pack design, output, and resource efficiency. It includes a variety of packaging technologies, as well as automation solutions, identification, and inspection systems. Thanks to comprehensive line capability, all modules can be integrated into complete solutions. Thus MULTIVAC solutions ensure a high degree of operational and process reliability, as well as high efficiency.

The MULTIVAC Group has approximately 6,900 employees worldwide, with some 2,300 based at its headquarters in Wolfertschwenden. With over 80 subsidiaries, the Group is represented on all continents. More than 1,000 sales advisors and service technicians throughout the world use their know-how and experience to the benefit of customers, and they ensure that all installed MULTIVAC machines are utilised to their maximum.

Further information can be found at: www.multivac.com.



Name > N&H Technology GmbH

| Address/P.O. Box > | Gießerallee 21 |
|-----------------------|------------------------|
| Postal Code/City > | 47877 Willich |
| State > | North-Rhine Westphalia |
| Contact Person > | Markus Zemke (M.A.) |
| Telephone > | +49-2154-8125-0 |
| Fax > | +49-2154-8125-22 |
| Email > | info@nh-technology.de |
| Website > | www.nh-technology.de |
| Social Media > | 🖒 Ƴ in 🗸 🗅 🖸 |
| Number of Employees > | 45 |
| Founded (year) > | 2001 |
| | |

Areas of Activity > | Medical | Automotive | Industrial | Consumer Electronics We are a full-service supplier for customised control panels and HMI devices and support our customers in the realisation of their products by producing them economically and in the highest quality.

Whether customised membrane keypads, silicone rubber keypads, plastic housings, moulded rubber or metal parts, magnetic connectors, or special cables – our international engineering team has extensive know-how for every product. Standard components such as spring contacts, microswitches, and buzzers complement our overall product portfolio.

For years, we have been supplying customers in the medical technology sector with customised membrane keypads, hygiene keypads, injection-moulded parts made of plastic and silicone, glass parts, magnetic connectors including cable assembly, and complete hand switches for bed control, as well as nurse emergency call systems.

Through highly qualified German and Chinese engineers in our company, we communicate excellently with our customers and suppliers, even about complex technical issues. If requested by customers, we can also take over entire development and design tasks. A creative and dynamic way of working, as well as tolerance and honesty, characterise our cooperation.

Our customers benefit not only from our outstanding technical engineering support, but also from our comprehensive range of services in their individual fields. Among other things, we offer consultative development and design support, optimisation of technical specifications for product safety, and the development of cost reduction options. We also take care of all logistical and customs processing and offer the option of setting up a consignment warehouse at our company in Germany.

N&H TECHNOLOGY



We have more than 20 years of procurement experience in the Asian market and have a subsidiary in Shanghai. Our manufacturing partners, some of whom have been with us for many years, are constantly monitored by us on the basis of defined technical and economic criteria and are selected for specific projects. Industry-specific quality requirements are taken into account. In addition to DIN ISO 9001 and DIN ISO 14001 certification, we have access to a large number of specialised suppliers who fulfil IATF 16949 or DIN ISO 13845 standard requirements.

Our customers include well-known German and international companies in the automotive industry, medical technology, telecommunications, industrial automation, building management systems, and other sectors. We have been working with them successfully for many years.



Name > OCTUM GmbH

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|---------------------|---|--------------------|
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| State | > | Baden-Wuerttemberg |
| Contact Person | > | Nadja Pichlhöfer |
| Telephone | > | +49-7062-91494-0 |
| Fax | > | +49-7062-91494-34 |
| Email | > | info@octum.de |
| Website | > | www.octum.de |
| Social Media | > | in X 🗖 |
| Number of Employees | > | 51 |
| Founded (year) | > | 01.02.1996 |
| | | |

Areas of Activity > Machine Vision

Member of



Experts in Machine Vision solutions.

For 25 years, our customers worldwide have been receiving machine vision solutions for the inspection and identification f a wide range of parts for our target industries of pharmaceutical, medical, and healthcare technology. Forinline optical quality inspection and material flow control in serial production, we develop and implement individual machine vision solutions based on globally available and proven technologies. A competent and dedicated team provides innovative, process-reliable solutions to meet your precise requirements. With more than 5.500 process-safe installed systems, OCTUM is one of the most successful suppliers in the industry.

We provide your ideal solution.

Safety is the most important factor for pharmaceutical products. Industrial machine vision guarantees reproducibleand traceable process steps in the manufacture of your products – the best technology to keep track of each processstep and document the results. With every installation you benefit from many years of experience in an environment where safety is the number one priority. Besides inspection solutions, we also provide machine vision solutions for the identification of all kind of markings on pharmaceutical and medical products based on OCR, OCV, and code reading tools for standard 1D and 2D codes either printed or as DPM codes and characters. Our inspection systems comply with GAMP5 directives and fulfil as well the requirements of 21 CFR Part 11.

OCTUM Machine Vision systems cover the following areas:

vial.inspect

- > Quality assurance of vials
- > Empty vial inspection
- > Opening inspection
- > Stopper seat inspection
- > Crimping inspection
- > Print inspection (on crimping caps and flip-offs)
- > Type and damage inspection



syringe.inspect

- > Quality assurance of syringes
- > Syringe length measurement
- > Finger flange damage inspection
- > Plunger assembly inspection
- > Label position and LLA inspection
- > Piston rod assembly inspection
- > Completeness in the syringe nest

tray.inspect

- > Quality assurance of trays and tubs
- > Completeness of the syringe nest and tray
- > Tyvek position and seal joint inspection
- > Printing inspection on tub and nest

label.inspect

- > Quality assurance of printed labels
- > Verification and quality of plain text
- > Verification and grading of all common codes
- > Check of label position

patch.inspect

- > Quality assurance of wound care products
- > Contamination and sealing
- > Dimensions, shapes, and print inspection
- > Structure and completeness of the layers

pipette.inspect

- > Quality assurance of pipette tips
- > Dimensions and shapes
- > Roundness inspection and webbing ridges
- > Bending, deformation, and skew position
- > Presence inspection and particle inspection
- > Completeness in the rack

ampoule.inspect

- > Quality assurance of ampoules
- > Ampoule head contour inspection
- > Inspection for burn marks
- > Printing inspection and height control
- > Inspection of colour rings and damages

We support you in the fulfilment of legal specifications throughout the entire pharmaceutical production process and guarantee you a constant and faultless production with rapid ROI. We would be happy to show you the best solution for your Application – contact us!



Name > ODU GmbH & Co. KG

| Address/P.O. Box | > | Pregelstraße 11 |
|-----------------------|---|-----------------------------|
| Postal Code/City | > | 84453 Mühldorf |
| State | > | Bavaria |
| Contact Person | > | Mathias Wuttke |
| Telephone | > | +49-176-10615653 |
| Fax | > | +49-8631-6156-49 |
| Email | > | Mathias.Wuttke@odu.de |
| Website | > | https://odu-connectors.com/ |
| Social Media | > | f in 🕩 🖸 💽 |
| Number of Employees | > | 2,500 |
| Founded (year) | > | 1942 |
| | | |

Areas of Activity > | Circular connectors

- | Modular connectors
- | Electrical contacts
- | Custom connector solutions
- | Cable assembly
- | Fibre optic

High-tech connector solutions for modern medical technology

Consistent performance and a high degree of failure protection are of vital importance in medical technology. As an interface specialist, we develop and produce custom systems and standard solutions for your medical applications. From MRI equipment to endoscopy, we design all our connectors in compliance with the strictest regulations and applicable standards, such as the Medical Device Regulation.

- > High-speed and high-density technology
- > Sterilisable and autoclavable
- > EMC/EMI shielding
- Fiber optic, hybrid, and non-magnetic connection options
- Waterproof (IP50, IP67 and IP68) and hermetically sealed options
- Connectors with silicone overmoulding and cable assembly

Silicone-overmolded system solutions

Thanks to their non-sticky surface and other properties, silicone-overmolded system solutions are easy to clean, steam-sterilisable, flexible, insensitive to extreme temperatures, and tested in accordance with DIN EN ISO 10993-5. This makes them a hygienic and robust solution for everyday medical use.

To meet medical requirements, we offer customised silicone-overmolded system solutions consisting of connectors, overmoulded parts, and cables, including assembly and optional laser marking.

- Connectors with silicone overmolding and cable assembly
- > Carefully matched materials for optimal haptics, hygiene, and durability
- > Partnerships with leading cable manufacturers
- > We take care of testing, documentation, and certification for you









Fiber optic – fast and interference-free transmission

When it comes to challenging medical applications, we can offer a solution with our expanded beam technology that offers high-end transmission characteristics over up to 100,000 mating cycles. The excellent optical performance remains unchanged even under mechanical stress, environmental influences, and harsh ambient conditions. The portfolio also includes reliable physical contact technology that is characterised by very low insertion loss, which makes up to 1,000 mating cycles possible. For short transmission distances, polymer optical-fiber system solutions are also available as a cost-efficient optical connection.

- GOF (multimode/singlemode) and POF system solutions
- > Fiber-only and hybrid systems
- > High number of mating cycles
- > Available as a fully assembled solution

About ODU

The ODU Group is one of the world's leading suppliers of connector systems, employing 2,500 people around the world. In addition to its company headquarters in Muehldorf a. Inn (Germany), ODU also has an international distribution network, with production and product development sites in Sibiu/Romania, Shanghai/China, Tijuana/Mexico, and Camarillo/USA.

75% degree of vertical integration – all competencies under one roof

ODU combines all relevant areas of expertise and key technologies including design and development, machine tooling and special machine construction, injection, stamping, turning, surface technology, assembly, and cable assembly. The ODU Group sells its products globally through its sales offices in China, Denmark, France, Germany, Hong Kong, Italy, Japan, Korea, Romania, Sweden, the UK, and the US, as well as through numerous international sales partners. ODU connectors ensure a reliable transmission of power, signals, data, and media for a variety of demanding applications including medical technology, military and security, automotive, industrial electronics, and test and measurement.



Name > Oemeta Chemische Werke GmbH

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|-----------------------|---|---------------------|
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| State | > | Schleswig-Holstein |
| Contact Person | > | Hinrich Voss |
| Telephone | > | +49-4122-924-226 |
| Fax | > | +49-4122-924-28-226 |
| Email | > | voss@oemeta.com |
| Website | > | www.oemeta.com |
| Social Media | > | in |
| Founded (year) | > | 1916 |

Areas of Activity > Metal removal fluids, industrial fluids

Be audit ready with Oemeta coolants!

Extensive requirements for any fluid used in the production processes of medical devices hinder most manufacturers from implementing innovative technologies and running a state-of-the-art production.

It is indisputable that any implant, tool, or other medical device that comes into contact with the human body can pose a risk to a person's health. For this reason, it is vital to prequalify the health impact level of coolants that are applied during the manufacturing process. Only if you know your involved material's "pollution" is there a realistic chance to create an appropriate cleaning process that ulitmately leads to a bio-compatible product as defined in EN-ISO 10993 and controlled by the QM process EN-ISO 13485.

Although the analysis and audit results of the finished product count for the qualification of a medical device, risk mitigation and common sense require minimising the impact of foreign substances during the manufacturing and finishing process.

Process performance, human compatibility, and economic efficiency have always been the core philosophies at Oemeta, but since technology is developing at an even faster pace and demographics show that society is getting older, medical technology is playing an increasingly significant role.

Oemeta has developed a full range of water miscible coolants and neat machining oils, as well as cleaners that are non-cytotoxic acc. to EN-ISO 10993-5 (certified and tested to GLP standard at use concentration at external labs). In this way, we have eliminated any concern of risk or instability of the process chemicals.





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The new MedTech product portfolio from Oemeta is tailored to the requirements of modern manufacturing processes and high-tech materials. Highly sophisticated materials such as titanium, tantalum, niobium, magnesium, ceramics, polymers, etc. are the standards of today's medical world and require specific coolants to achieve safe and efficient machining results.

Coolants must not have any influence on material surfaces and structural integrity, must be bio-compatible for any absorbent material, and still fulfil the manufacturing requirements for sump life, clean working environment, tool wear, and equipment protection. It's a delicate balance for perfection, but one that Oemeta achieves successfully.

The European MDR requires any manufacturer of medical parts/equipment to implement a quality management documentation acc. to EN-DIN 13485 to ensure all regulatory specifications are met. Part of this auditing process is the qualification of the final part as biocompatible, based on EN-DIN 10993. If the final part is qualified the process is locked in and no changes are accepted without a full new auditing process. In case the manufacturing fluids need to be replaced for newer technology, proven non-cytotoxic fluids can ease the re-evaluation of the process.

And finally:

A coolant is only as good as the service and support provided by the manufacturer or its representatives. You are invited to contact Oemeta for optimisation potentials or process consulting.

Quality and Experience · since 1971

Name > pfm medical ag

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Areas of Activity > Products, services, and treatment portfolio cover the medical focus fields of surgery, histotechnology, cardiovascular technologies, and infusion

Annual Turnover > € 127.1m

External > Feather, Numed Collaborations

pfmmedical is an internationally active medium-sized company providing special solutions in the field of healthcare. The headquarters of the family-owned enterprise, founded in 1971, is located in Cologne. The company's more than 650 employees are active at 12 sites, 4 in Germany and 8 in other countries worldwide. Various subsidiaries belong to the pfmmedical family. Its portfolio of 2,500 products sold in more than 100 markets includes the medical application areas of infusion, histotechnology, cardiovascular technologies, and surgery.

Histotechnology – For routine in clinic and research

In its medical focus field histotechnology, pfmmedical develops, manufactures, and distributes microtomes and laboratory equipment for use in histology and pathology. Thanks to our special business model we cover the entire value chain from the idea for a product and its development all the way to production and distribution. This helps us ensure the implementation of our high quality standards in every area.

Quality and Experience made in Germany

Our products are the result of continuous further development – always in close collaboration with the customer. They are equipped with numerous functions to ensure safe handling and convince our customers all over the world. In addition, we exclusively sell the histological product portfolio of the Japanese company Feather Safety Razor in Europe.

The latest developments are 2 further water baths, which will complement pfmmedical's histological product portfolio from 2023. Further developments will be presented in mid-2023.

PFM MEDICAL









pfmmedical hico – new member of the pfmmedical family

pfm medical hico gmbh was founded in 1945 as Hirtz & Co. KG in Cologne and today offers medical technology expertise under the brand name HICO Medical Systems. Started as a wholesale company for medical and medical technology products, the company has developed into a major medical technology company through its own innovations in the product areas of hypo/hyperthermia devices and inhalation products (ultrasonic nebulisers).

temperature management of patients in hospitals

Our core business are devices for patient temperature management. Our products are used in all hospital settings where controlling the patient's body temperature is crucial: the HICO-Aquatherm 660 is a robust, easy to use device designed to ensure that the patient remains normothermic during surgery to avoid the high risks associated with intraoperative hypothermia, while the HICO-Variotherm 555 offers neuroprotection after cardiac arrest through its cooling power for resuscitated patients in the ICU. The HICO-Variotherm 550 does the same, but taking into account the special needs of neonatal and pediatric patients.



Name > PI Ceramic GmbH

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| Email | > | info@piceramic.com |
| Website | > | www.piceramic.com |
| Social Media | > | in |
| Number of Employees | > | 430; over 100 engineers |
| Founded (year) | > | 1992 |

Areas of Activity > Piezoceramic components, ultrasonic transducers and actuators for medical technology, e. g. | Therapeutic and Surgical Instruments | Medical Sensors | Microfluidics | Diagnostic Imaging | Medical Implants

Annual Turnover > €45.4m in 2021

Pushing Forward Industry and Research with Piezo Technology

Pushing the boundaries of what is technically possible, together with our customers – this is the ambition that motivates and drives PI Ceramic daily.

PI Ceramic develops and produces high-tech solutions with piezo technology. As part of the PI Group, PI Ceramic is the global competence centre for piezo technology, with a broad product portfolio – from piezoceramic components to ultrasonic transducers to actuators. With 30 years of experience, the medium-sized company is successfully active in the most innovative markets and realises demanding applications in medical technology, industrial sensor technology, and precision dosing.

Improving Quality of Life – with Piezo Power at the Heart of the Application

Piezo technology makes faster medical diagnostics and gentler therapies possible.

With in vitro diagnostics, liquid handling can be realised in the smallest space by using energy-efficient and compact piezo elements. Dosing, moving, mixing, and separating samples with the tiniest volumes and different properties becomes possible. Piezo technology also significantly contributes to the increase in throughput of these analytical instruments while at the same it contributes to their miniaturisation.

With the help of piezo elements, disruptive therapeutic measures, e.g. with ultrasound, can be implemented. Therapeutic and surgical instruments can thus carry out noninvasive and minimally invasive surgeries at extreme speeds, with lower side effects and faster haling. Most modern imaging methods profit from special ultrasonic transducers that decisively increase the performance of endoscopes, for example; and medical implants can smartly replace damaged body functions.

Furthermore, contactless ultrasonic sensors can ensure seamless therapy management in patient monitoring.
PI CERAMIC









The Product Portfolio

PI Ceramic offers flexible quantities of standard and customer-specific piezo solutions in various geometries, sizes, and value-added levels – be it just one actuator or several millions. All manufacturing steps are carried out in-house at the German company site: from the development and production of the material to the finished, installable, and quality-tested product.

- The product portfolio includes:
- > Piezoceramic components
- > Piezoceramic ultrasonic transducers
- > Piezoceramic actuators
- Assembly of piezo components, e.g. with flexible printed circuit boards
- > Piezo amplifiers and controllers

The Offer

The company also assembles and integrates the piezo elements. This includes both the electrical contacting according to the customer's requirements and the mounting into components provided by the customer as well as gluing or casting the piezo ceramics.

With the knowledge and experience from applications, technologies, and available capacities, PI Ceramic can develop products and solutions with the customer that fit optimally into the respective application. In this way, new developments and technologies can be enabled for different markets in order to shape the world of tomorrow.



Name > Premier Research

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|-------------------------|---|----------------------------------|
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| Country | > | USA |

| Subsidiary 3 | • | Premier Research (Germany) |
|---------------------|---|-------------------------------|
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| | | premier-research.com |
| Website 2 | • | https://premier-research.com/ |
| Social Media | • | ¥ in |
| Number of Employees | | 2,400+ |
| Founded (year) | • | 1989 |

Areas of Activity > Biotech, Specialty Pharma, Rare Diseases, Cell & Gene Therapy, Oncology, Analgesia, Dermatology, Neuroscience, Pediatrics, Women's Health, Medical Devices, Diagnostics, Real-World Science & Late Phase Research Premier Research is a clinical research, product development, and consulting company dedicated to helping biotech, specialty pharma, and device innovators transform life-changing ideas and breakthrough science into new medical treatments.

As a global company, Premier Research specialises in the use of innovative technologies for smart study design and trial management to deliver clean, conclusive data to sponsors.

Our Approach

We are continually optimising our processes to deliver the right mix of agility and knowledge to support our most innovative biotech and specialty pharma sponsors.

What we do

Your compound shows spectacular promise, but it seems there's an obstacle at every turn – finding hardto-reach patients, defining relevant endpoints, navigating the regulatory maze, and ultimately obtaining clean, conclusive data.

Our Built for Biotech model is a compilation of the most successful techniques and capabilities observed across our experience, applied to provide a specialised customer experience.

Collaborative Approach

We are committed to helping our customers answer the unmet needs of patients across a broad range of medical conditions.

Our specialised global task forces are dedicated to smart study optimisation and risk management throughout the trial to support drug development strategies. Therapeutically focused teams of clinical professionals have the knowledge and experience necessary to effectively manage any situation that may arise in your trial. Our approach is firmly grounded in comprehensive project management principles and well-defined processes.

Amazing Science

PREMIER RESEARCH

What We Do Best

Focusing on areas where the most groundbreaking therapies are being developed.





Built for Biotech



Amazing Science

It's amazing and often very complex science, and we've positioned ourselves right in the middle of the action, where pioneers are doing the most exciting work.

Whether you're a single-compound start-up or more interested in pursuing science than in negotiating the arcane maze of protocol review and recruitment modeling, we can help with planning, design, execution, and conclusive results.

More than just clinical services, we offer unique perspectives, intelligent study designs, and a relentless focus on compliance and providing conclusive data.

Conclusive Data

We are constantly investing in innovative technologies for smart study design and trial management to deliver clean, conclusive data to sponsors.

This allows us to continually improve on product development and study outcomes.

Consulting

Premier Consulting is a strategic product development and global regulatory consulting partner dedicated to supporting the specialised needs of emerging biotech and specialty pharma companies. These small to midsize companies are the very heart of drug development. Like them, we are dedicated to the patient journey and driven by the challenges of bringing new life-saving technologies to market.

Creative Solutions to Your Most Complex Product Development Challenges

Wherever you are in the development life cycle, from raising funds and developing a regulatory strategy to patient recruitment and data analysis, we are positioned to help.

Our drug development and regulatory experts are relentlessly thorough, constantly asking why (and why not), taking nothing at face value, and being flexible enough to pivot and regroup when circumstances demand. We know biotech and understand the passion and commitment that drives our sponsors. It is what drives us, too.



Name > QUESTALPHA GmbH & Co. KG

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| Email > | info@questalpha.com |
| Website > | www.questalpha.com |
| | www.sugisponge.com |
| Number of Employees > | >40 |
| Founded (year) > | 2020 as spin-out of Kettenbach, |
| | active since 1944 |
| Areas of Activity > | Manufacturing and commercialization |
| | of versatile medical grade sponge |
| | material |
| Appual Turpovor | Double digit million £ cales |
| | Double algit illilloit & Sales |
| External > | Active cooperation with several |
| Collaborations | corporate R&D departments and |

academic institutions

Member of



QUESTALPHA was spun off from Kettenbach in 2020. As leading manufacturer of high-performance absorbent materials made from cotton and regenerated cellulose, our expertise is dating back to the early 1950s with the launch of Sugi® medical sponge products. We cover the full value chain from research and development, production and logistics to marketing and sales of our product ranges. Our branded products have become indispensable solutions for doctors and hospitals in ophthalmology, ENT, dentistry, neurosurgery, microsurgery, hygiene, diagnostics, and wound care. Supplying our high-quality materials for developmental purposes and as versatile components in OEM products is supplementing our branded products business and enhancing our customer network in the medical device market.

QUESTALPHA's name emphasizes on our strategic realignment for further market expansion. While "QUEST" stands for the active pursuit, "ALPHA" underscores the best solution to be found for each individual customer.

SUGI® Products

All Sugi[®] Products contain our Sugi[®] medical grade sponge material made of pure cotton and regenerated cellulose with highest biocompatibility and tear resistance. Our material can absorb approx. 20 times of its own weight of aqueous solutions in a very short time. A soft elastic expansion is initiated and, depending on the area of application, a soft compression of the surrounding tissue is induced.

Sugi[®] Eye Spear

Ophthalmology places particularly high demands on surgical accessories. The highly absorbent Sugi[®] (sponge material) has proven to be very effective in the field of cataract surgery. With its tightly bound fibers and firm consistency when wet, Sugi[®] is ideal for diverse ophthalmic surgical procedures including LASIK. Sugi[®] outcompetes comparable materials in fluid wicking.

Sugi[®] RhinoSwabs

Rhino swabs have been specifically designed for functional endoscopic sinus surgery (FESS). Nasal surgery

QUESTALPHA







swabs with retrieval cord according to Prof. Dr. H. Stammberger are ideal for absorbing blood and secretion during endoscopic nasal surgery. The sponge material can absorb up to 20 times its own weight in aqueous solutions in less than 3 seconds. Sugi® absorbent swabs can also be used as a vehicle for various aqueous solutions.

Sugi[®] Plast

High quality components make Sugi[®]-Plast a unique product. Designed according to requirements of modern wound care products, Sugi[®]-Plast can be applied after vasopuncture, as well as in the field of secondary healing wounds.

SUGI[®] Inside

Customized raw material e.g. as a component in medical devices or for manufacturing processes of medical products. Individual development through our full service for component manufacturers, R&D specialists or material specialists.

Are you searching for a solution related to absorption, binding, retention, or separation of molecules in medicine and life science? Let us find out if our Sugi[®] material is suited for your purpose.

With Sugi[®] Inside we offer support and documentation during the entire development process of your customized raw material. A wide range of applications already benefits from the versatile physical and chemical properties of the unique sponge material.

In addition to our medical sponge activities, QUESTALPHA is both acting as a successful developer and producer of other medical devices and is seeking for additional applications.



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| Email > | m.striebe@rosler.com |
| Website > | www.rosler.com |
| Social Media > | ⊟in XOV |
| Number of Employees > | 1,500 worldwide |
| Founded (year) > | 1933 |
| | |

Areas of Activity > Mass Finishing Shot Blasting Additive Manufacturing

Member of



About Rösler

For over 80 years, the privately owned Rösler Oberflächentechnik GmbH has been actively engaged in the field of surface preparation and surface finishing. As global market leader, we offer a comprehensive portfolio of equipment, consumables and services around the mass finishing and shot blasting technologies for a wide spectrum of different industries. Our range of about 15,000 different self-made consumables specifically serves our customers for resolving their individual finishing needs. Under the brand name AM Solutions we offer numerous equipment solutions and services in the area of additive manufacturing/3D printing. Lastbut-not-least, as our central training center the Rösler Academy offers practical, hands-on seminars to the subjects mass finishing and shot blasting, lean management and additive manufacturing.

High-quality surface finishing technologies for medical parts

The selection of a surface treatment process is the key factor that influences the functionality, performance and longevity of medical parts. Due to their precision, efficiency and economy, mass finishing and shot blasting are considered to be an indispensable part of the finishing process for a wide variety of medical parts in different manufacturing stages. Our flexible machines are able to do the surface preparation and final finishing starting from general cleaning, deburring, surface smoothing after casting, forging, stamping, machining, additive manufacturing, heat treatment, or surface preparation for plating, coating, or electro-polishing. This also applies to the final surface finishing stages for medical parts such as passivation, high-gloss polishing or the placement of a matte, non-glare finish on the surface of components.

Fields of medical application

Fields of medical application are endoprosthesis implants, trauma implants, spine implants, dental implants, medical instruments, endoscopy instruments, orthosis prosthesis and other medical and pharmaceutical devices.

RÖSLER OBERFLÄCHENTECHNIK







Customer Experience Center worldwide

What's unique about Rösler's system is its integrative approach. Systems and processes are tailor-made to the respective processing requirements. Many subsidiaries of the Rösler Group are equipped with their own Customer Experience Center (CEC), with the latest in systems engineering. In order to capture data on the respective processing sequence, customer work pieces first undergo sample processing in the CEC. This decides which processing method will be used and with which peripheral devices.

Process development and process optimization

From sample processing to process design to mechanical implementation and expert after-sales service, you receive comprehensive solutions from a single source. The latest measurement technologies support our process development and optimization. More than 190 engineers and technicians work daily in our construction and development departments on individually tailored system solutions.

Global network

Besides the German manufacturing locations in Untermerzbach/Memmelsdorf and Bad Staffelstein/Hausen the Rösler group has a global network of 14 manufacturing/sales branches in Great Britain, France, Italy, the Netherlands, Belgium, Austria, Serbia, Switzerland, Spain, Romania, Russia, Brazil, China and the USA. In addition, there are more than 150 sales agencies with years of experience standing ready to advise you.



Name > ruhlamat GmbH

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| Contact Person > Th | norsten Koch |
| Telephone > +4 | 49-36925-929-310 |
| Fax > +4 | 49-36925-929-111 |
| Email > t. | koch@ruhlamat.de |
| Website > w | ww.ruhlamat.com |
| Social Media > f | ¥in ע⊂ |
| Number of Employees > 1, | 200 worldwide |
| Founded (year) > 19 | 991 |
| Areas of Activity > A | Assembly Systems & Automatio |

reas of Activity > | Assembly Systems & Automation Systems | Card Systems & Passport Systems | Original Equipment Manufacturing

Annual Turnover > €140m worldwide Relevant R&D budget > 1%

> External > VDMA Collaborations

Member of



Medical technology from ruhlamat

People's health always has the highest priority. That is why the safety and quality requirements in medical technology are higher than in hardly any other industry. Medical systems from ruhlamat take these requirements into account in all respects.

We develop specialised systems to make medical products even more available, cheaper, and safer. From hygienically operating assembly systems with a high degree of standardisation to complex individual solutions for the test production of new products, we create system concepts for medical technology. In doing so, we rely on innovative solutions that enable targeted, rapid, and high-quality action. From the series production of respirators and tablet dispensers to syringe and infusion systems – we develop system concepts that fit your requirements.

Our quality promise and service

Our employees are highly qualified, experienced, and technologically competent. From classic assembly processes such as feeding, joining, cutting, welding and testing, to state-of-the-art control systems and image processing programmes, to unique and patented process solutions for wire laying and personalisation / perforation, you are in professional and competent hands with us.

We support our customers not only during the implementation of a project, but also after its completion. We ensure an optimal start of production and fast problem solving, as well as regular maintenance and servicing, both with remote diagnosis and on-site as well as virtual assistance. Our services include planning and development and, of course, production and assembly directly at our customers' premises. On-site training and instruction for the new system are just as much a matter of course for us as our worldwide service. We create your individual service contract offer tailored to your needs.









Our portfolio in the medical sector:

- > Dental technology
- > Infusion technology
- > Protective equipment
- > Syringe systems

Automation systems from ruhlamat - individual, flexible and reliable

Thanks to the wide range of solutions that can be implemented with our automated systems, we can respond individually to our customers' requirements. As a global partner, we are particularly flexible in all services from conception and implementation to construction and on-site and virtual service.

Thirty years of experience and knowhow in special machine construction

As a specialist in special machine construction for many years, we offer individually tailored as well as standardised machine solutions worldwide. Our goal is to provide our customers with precise tools to sustainably increase the success of your company.

ruhlamat machine solutions are used, for example, in the automotive and electronics industries, in the medical and packaging sectors, as well as in the production and personalisation of ID cards, chip cards, and passports. With decades of experience in the production and implementation of the most demanding technologies and processes, we have become one of the leading mechanical engineering partners.



Name > SAB Bröckskes GmbH & Co. KG

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| Email > | info@sab-broeckskes.de |
| Website > | www.sab-cable.com |
| Social Media > | in |
| Number of Employees > | 550 |
| Founded (year) > | 1947 |
| | |

Areas of Activity > Special Cables for Medical Devices Annual Turnover > €130m

Special Cables for Medical Technology

SAB Bröckskes is a worldwide leading manufacturer of special cables. 75 years of experience in cable manufacturing as well as in temperature measuring techniques have made out of a one-man business a company with more than 550 staff members.

Our customers receive custom-made solutions, socalled special cables that we are able to manufacture from a quantity of 100m. High flexibility and speed are our outstanding characteristics. As a leading special cable manufacturer we are able to design and produce a special cable that meets your special requirements.

Holistic view of customer requirements and "hidden needs"

In many medical applications the devices may require extreme manoeuvrability, integrated recording components, built-in light management, and co-viewing systems.

As a result of these requirements, cables designed for e.g. imaging devices usually perform multiple tasks to unite different signal transmissions, such as USB and Ethernet, in the smallest possible spaces.

"Certainly, such an implementation requires a high level of know-how and sometimes presents challenges for our engineers," says Marc Gerlatzek, product manager for the medical technology division at SAB Bröckskes GmbH & Co KG. "Our work is not finished with precisionbased cable design alone; at SAB we must consider a holistic approach, which only works with direct customer dialogue. Having direct dialog with our customers allows us to minimise any unforeseen application requirements."

When designing imaging cables, however, often "hidden needs" directly influence the performance of these cables. It's important to discuss these prior to design and production.

Examples of hidden needs:

> the device connection via a ceiling supply or an articulated arm that has to move in all axes









SAB BRÖCKSKES

- > the use of computer-assisted robotics
- > the intended connectors and connection geometries
- > expected electrical interference in the integrated operating room

Expertise regarding the individual application possibilities requires a sufficient depth of knowledge from the cable manufacturer, ideally gathered from experience: successes as well as setbacks. The ultimate consideration, however, is still the technical integration of all known features and hidden needs in one cable throughout the finished cable assembly.

High-precision manufacturing processes for cable production

Asymmetries in a cable can quickly lead to interferences due to differences in propagation time and signal radiation, while large process tolerances lead to mismatching and reflections. As a consequence, this can lead to transmission losses, distortion of the signal, runtime and data errors, and ultimately to reduced image quality.

The precision of the manufacturing processes and the selection of impedance-relevant materials have a considerable influence on the transmission characteristics. Through targeted signal integrity engineering and comparison with our documented empirical values from a large number of measurements, we ensure homogeneous transmission values over the entire cable length.

Length-dependent factors such as "voltage drop" or attenuation are limiting factors. Cable cross-sections for increased power transmission are just as much a part of the requirement profile as are tolerated outer diameters.

Requirements on cable and cordet, e.g. 2MOP

Depending on the classification, these devices are also subject to the regulatory requirements of the new EU Medical Devices Regulation. The resulting specifications regarding patient and user safety (2MOP) and protection against electrical interference and capacitance are taken into account in the development phase and individually tested both during and after production.





Protecting Health.

Name > Sanner GmbH

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| Email > | s.lang@sanner-group.com |
| Website > | Sanner-group.com |
| Social Media > | in |
| Number of Employees > | 600 |
| Founded (year) > | 1894 |
| | |

Areas of Activity > CDMO, Injection Moulding

The Sanner Group, headquartered in Bensheim/Germany and with locations in Europe, Asia, and the US, has successfully developed from a global market leader for desiccant integration and expert in plastic injection moulding for decades into a sought-after provider of customised solutions in the areas of medical devices, diagnostics, and drug delivery devices. Today, Sanner supplies its products to more than 150 countries globally and has more than 600 employees.

The heritage of Sanner is the filling and integration of desiccants. Furthermore, we also process and fill other types of granules or chemical substances with an accuracy of up to 0.01g. This is accompanied by decades of expertise in high-precision injection moulding, which guarantees an excellent fit of parts and the tightest seals.

It all starts with an idea and a realisable concept

Today the Sanner Group stands for a stage-gate development process - the Sanner IDP Process® - that starts from the idea and design of a device, always taking into consideration the future manufacturing & assembly principles, right from the beginning. Our designers and engineering experts work hand-in-hand to develop a device that is ultimately processable at high volumes, at an excellent cost ratio, and without any risk. This stage-gate process offers the fulfilment of all required regulations for Europe, US, and Asia; the minimising of costs and time to start of production, while maximising quality, robustness of manufacturing processes, and reproducibility, even with difficult materials and tolerances; as well as one hundred per cent processcontrolled development with compliant risk management and qualified and validated processes. In addition, the Sanner IDP-Process® can be flexibly adjusted to the specific requirements of your project and is always supported by open and trustful customer communication.





Get a robust and fully validated manufacturing and assembly process

Select your appropriate design and test the prototypes for which we work e.g. with additive manufactured tooling inserts. So, you get them rapid and closest to the final product with the required functionalities.

Then we work out the manufacturing and assembly concept. For very complex and multi-component devices, we even use virtual reality to determine an optimised and efficient assembly process.

We offer in-house tool technology and industrial engineering for an improved production flow and rapid implementation of your product in series full-automated production, regardless of whether you need cleanroom or greyroom production. Sanner is well known for consistently highest quality, no matter whether small or large quantities. Sealing with a 100% leak test, precise printing, camera tests and fully automatic sensor tests are a fixed part of our production processes. We work out serialisation concepts right down to box-built logistics solutions. We manufacture with 100% traceability and GMP (FDA) and MDR compliance, and are ISO 9001, ISO 13485, and ISO 15378 certified.

It does not stop with serial production

Sanner is known for our excellent customer service. Even after the market launch, we remain at your side – throughout the entire life cycle of your product. Continuous quality management and process optimisation are as much a part of our post-production service as efficient maintenance concepts.



Name > SCHEUERMANN + HEILIG GmbH

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| Website → | www.sh-gmbh.de/en/ |
| Social Media → | fin 🖸 |
| Founded (year) > | 1957 |
| | Development concritics and too |

Areas of Activity > | Development expertise and tooling technology | High quality punching and punchingbending technology, spring technology, injection molding technology

Automated assembly technologies Integrated process technologies such as cleaning and heat treatment

Annual Turnover > €85m

External > | Mannheim Medical Technology Collaborations Cluster | VDFI (Verband deutscher Federnindustrie) | EFB (Europäische Forschungsgesellschaft für Blechverarbeitung) | Fraunhofer-Gesellschaft

Member of

High quality metal & plastic forming solutions for the medical industry

For more than 60 years, SCHEUERMANN + HEILIG have been creating and manufacturing high-quality, cuttingedge, and innovative forming solutions in both metal and plastic, for a wide range of precision sectors, including the medical technology and healthcare industry.

Using advanced, state state-of-the-art technologies and hybrid production processes, we have many years of experience developing and manufacturing high-precision forming solutions and prototypes for auto-injectors and medication delivery devices, inhalers and respirators, blood glucose measurement and diagnostic equipment, needle protection systems and syringes, as well as, advanced endoscopy equipment.

To be more precise, we create and produce the parts that makes these systems work. Wherever you find crucial assemblies made from metal and plastic, stamped and stamped + bent parts, high precision, tension and compression springs, bent wire components, and the essential micro parts needed for medical equipment where total reliability is of the utmost importance, you'll find SCHEUERMANN + HEILIG.

Meeting the highest standards to achieve the highest quality

Our philosophy has always been to manufacture parts for industry that meet the most exacting standards. For decades SCHEUERMANN + HEILIG have chosen not only to meet the strictest performance standards but to exceed them where possible. These include ISO 9001, IATF 16949, ISO 13485, ISO 14001, ISO 45001 and ISO 50001.

We are a leading, premium developer and manufacturer of hybrid assemblies, stamped and stamped + formed parts, technical springs, and precision products made from advanced metal and plastics. We are totally committed to constantly questioning existing solutions and searching for more innovative ways of working.

MedicalMountains



SCHEUERMANN + HEILIG



The development and series production of sophisticated complex assemblies is the focus of our work. For our first-class series production, course we create individual processes and tools and produce fully developed prototypes.

Our expertise in the use of hybrid technology – the automated combination of different metal components or metal and plastic elements to form complex assemblies – gives us an innovation advantage which benefits our customers worldwide.

Of course, together with our customers, we also have the experience and the know-how to develop customtailored solutions, whether it's for individual components, assemblies, or system solutions.

SCHEUERMANN + HEILIG: Exploring the limits of what is possible

Our commitment to using innovative technologies, manufacturing precision, and the production of hybrid assemblies has always been and still is a family obsession. Our goal is nothing less than perfection at every level, right down to the tiniest detail. And because of this, since the company was founded in 1957 by Anton Scheuermann and Günter Heilig in Buchen-Hainstadt, Germany, we have grown to become world leaders in our industry.

In 1979 we expanded our operations and established SCHEUERMANN + HEILIG do Brasil in Atibaia, Brazil and have achieved premium supplier status to major international customers in the mobility, smart solutions, environmental, and building technology industries, as well as the medical and healthcare sector.

Visit our website and take a closer look at our range of products, our devotion to customer service, and how we can help you: www.sh-gmbh.de/en/



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| Website > | www.schneeberger.com |
| Number of Employees > | 1200 |
| Founded (year) > | 1923 |
| | |

Areas of Activity > | Medical technology | Biotechnology | Machine tool industry

Annual Turnover > >€200m

Member of



Essentials for the best – for the Medical- and Biotechnology market

In 1923 the foundations of current global linear motion technology were laid by the first linear guideways developed by SCHNEEBERGER, which has been making linear motion products for more than 90 years ago. In 1945 SCHNEEBERGER once again innovated linear technology, this time with the invention of the linear roller guide. We have developed upon this effective principle of linear guidance significantly in the last several years thanks to the integrated cage controls. The same concepts that resulted in our success still apply today: innovative spirit, an uncompromising striving for quality, and the ambition to always provide our customers with new, technically and economically superior products. Today, SCHNEEBERGER continues to be a leader, constructing linear guideways that set new standards in terms of durability, reliability, and efficiency, and has since remained at the top of a highly competitive market. The name SCHNEEBERGER is synonymous with modern linear guide technology throughout the world. At its most important production locations in Switzerland, Germany, and the Czech Republic, SCHNEEBERGER is focused on investing in constant quality increases and cost optimisations. With additional production plants in China, SCHNEEBERGER is also near to its customers in places where the markets are developing particularly dynamically. SCHNEE-BERGER is unique in the global linear motion technology market. We are an independent, medium-sized company and this forms the basis for a dynamic, customer-oriented, and correspondingly successful business strategy.

SCHNEEBERGER serves original equipment manufacturers operating (OEM) in various industries worldwide – from machine tool, medical technology and semiconductor technology to biotechnology and others. Linear bearings, profiled linear guideways, measuring systems, gear racks, ball screws, slides, positioning systems, and mineral casting are all part of SCHNEEBERGER's product and manufacturing range.

SCHNEEBERGER









SCHNEEBERGER offers high-precision linear technology with an emphasis on applications in medical- and biotechnology. The focus here is on magnetic resonance tomography (MRT), computed tomography (CT), surgical microscopes, ophthalmic systems, scanner systems, liquid handling equipment, DNA plate readers, 3D printing, cell analysis systems, and dental medicine.

Precision, reliability, special designs, miniaturisation, integrated measuring systems, and application-oriented positioning systems make us the ideal supplier in these application fields.

MINIRAIL is the latest generation of miniature guides for demanding applications. They are extremely robust and prove themselves in every application with their high level of smoothness, precision, and reliability.

Based on the proven MINIRAIL miniature guideway, our MINISCALE Plus, a guide with an integrated optical position measuring system, impresses with its precision, high speeds, and accelerations in the work process, low construction effort, quick installation and adjustment, consistent accuracy, and a long lifetime. These properties make the MINISCALE Plus the ideal partner in medical technology and biotechnology.



Name > SCHUNK GmbH & Co. KG

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|----------------------|---------------------------------|
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| State > | Baden-Wuerttemberg |
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| | Manager |
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| Fax > | +49-7133-103-952658 |
| Email > | info@de.schunk.com |
| Website > | www.schunk.com |
| Social Media > | 🖬 🛩 in Ҳ 🖸 |
| umber of Employees > | approx. 3,500 |
| Founded (year) > | 1945 |
| | |

Areas of Activity > Automation and equipment for robots and production machines used in the life-science areas: | MedDevices:

- Robotics and automation in the human environment (e.g. surgical robots or rehabilitation devices)
- Manufacturing and handling of medical consumables and products
- Laboratory Automation: Handling in laboratory processes and analytical procedures Pharma:
- Handling and automation in pharmaceutical production

Hand in hand for tomorrow

SCHUNK is the international technology leader in toolholding and workholding, gripping technology and automation technology. Approximately 3,500 employees in 9 plants and 34 directly owned subsidiaries and distribution partners in more than 50 countries throughout the world ensure an intensive market presence.

Shaping the future with innovative technologies – that is the claim of SCHUNK. To this end, the family-owned and managed company is pushing the agile further development and digitisation of its product and service portfolio in order to make industrial processes more efficient, transparent, and sustainable. SCHUNK is facing the current and future challenges together with its customers and partners: Hand in hand for tomorrow!

Through its pioneering spirit and innovative strength, SCHUNK continues to set new benchmarks in productivity optimisation for its customers. These customers benefit from an integrated range of components, applications, and services. The profound SCHUNK expertise that has grown over decades is the foundation for growth in a number of areas.

Member of

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Life-science partner

As an experienced automation and production specialist, SCHUNK is a reliable partner for plant manufacturers and automation companies in life sciences sectors such as MedDevices, MedTech, Laboratory Automation, and Pharma. Here, industrial automation makes a significant contribution to solving medical challenges and, with its automated, intelligent manufacturing processes, ensures reliable, standardised, or individualised medical care. The high-tech components from SCHUNK hold a key position in this. Portfolios tailored to specific requirements offer suitable products for all life sciences applications. With its extensive product range and decades of application know-how, the world market leader helps to ensure that sensitive manufacturing processes are safe, reliable, and economical.

SCHUNK's life-science portfolio includes components, applications, and services for automation and clamping technology. Due to its extensive application experience, SCHUNK already offers ISO cleanroom-certified components, components configured with H1 greases (FDA certificate), ATEX products, and protective covers in its standard portfolio. Proven existing products such as the high-performance parallel gripper PGN-plus-P and the miniature gripper MGP-plus have been optimised for medical use. In addition to the standard products, SCHUNK also offers modified versions and customer solutions tailored to specific requirements. A team of specialists implements individual automation applications from planning to certification in close cooperation with the customer.



Name > Seco Tools GmbH

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| Telephone > | +41-32-332-78-78 |
| Email > | info-de@secotools.com |
| Website > | www.secotools.com |
| Social Media > | 🖒 🎔 in 🖸 |
| Number of Employees > | 4,000 |
| Founded (year) > | 1936 |
| rounded (year) > | 1920 |

Areas of Activity > | General Engineering | Automotive | Medical | Aerospace | Power Generation

Seco-Tools – your partner for machining solutions

Seco is one of the world's largest providers of comprehensive metal cutting solutions for milling, stationary tools, holemaking and tooling systems. For over 80 years, we have been more than just a cutting tool provider. We develop and supply the technologies, processes and supports that manufacturers depend on to maximize productivity and profitability.

Headquartered in Fagersta, Sweden, Seco is present in more than 75 countries via nearly 4,000 team members. All Seco employees across the globe share a family spirit, along with a passion for our customers and personal commitment to ensuring their success.

Seco employees take a practical approach to applying high levels of metal cutting competence to overcoming customers' challenges. Relationships built on trust and respect are vital to our success. We work closely with customers to understand their needs. We undertake cooperative ventures with universities and industry associations to monitor trends and develop solutions that meet the needs of unique segments. We partner closely with providers of complementary technologies to ensure manufacturers have access to comprehensively optimized solutions.

Seco is part of Sandvik Machining Solutions, the tooling business area of the Sandvik Group.

Member of



SECO TOOLS









Machining medical components is a challenge for you?

The medical industry has experienced substantial growth in recent years, a trend expected to continue due to a variety of factors.

The worldwide economic issues of the past several years have created a growing demand to reduce costs, leading to substantial research and development into new materials and processes. Additionally, higher levels of regulation have created a need for more predictable and stable manufacturing methods. As these trends continue, medical manufacturers will face the ongoing challenge of adapting to an evolving market.

Seco has worked closely with global medical manufacturers for decades, building a foundation of expertise that makes us a valuable partner to those serving the industry. We also partner with research institutes, universities and other industry entities to fully understand the challenges medical manufacturers face and develop the solutions to overcome them. Our own R&D focuses on the advanced technologies, tools, strategies and component solutions that will drive and evolve your processes.

As the medical industry continues to innovate and grow, Seco is here to help you understand and overcome the metal cutting challenges you encounter.

Visit www.secotools.com or contact us. Seco will support your challenges in machining your medical components.



Name > SINGULUS TECHNOLOGIES AG

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| Website > | www.singulus.de |
| Social Media > | in 🖸 |
| Number of Employees > | 354 |
| Founded (year) > | 1995 |
| Areas of Activity > | Solar |

| Life Sciences | Semiconductor

SINGULUS TECHNOLOGIES:

Reliable Wet Chemical and Vacuum Coating for Medical Technology

SINGULUS TECHNOLOGIES develops and supplies equipment and technologies for highly efficient and resource-saving production processes used in the medical industry worldwide. SINGULUS TECHNOLO-GIES's core competencies focus on processes, coating technology, surface refinement, and wet chemical applications.

SINGULUS TECHNOLOGIES plans and realises production solutions based on Industry 4.0. This includes software functions for monitoring and optimising production processes as well as remote diagnostics. With the variety of plant parameters and signals available, process optimisation, operating material consumption, early damage detection, and intelligent maintenance, for example, are all feasible.

Wet Processing Equipment:

Batch Systems for Standard and Customised Solutions With its MEDLINE platform, SINGULUS TECHNOLO-GIES presents a highly flexible wet chemical batch system for various processes and applications in the fields of contact lens manufacturing, implant technology, and other applications in the medical production environment. The spectrum ranges from manual R&D tools to semi-automated or fully automated platforms, from pilot production to high-volume mass production.

MEDLINE Highlights:

Wet Chemical Batch System with flexible process configuration

- > Standard platform with flexibility for user requirements
- > Water-, acid-, alkaline, and solvent-based processes and applications
- Processing of substrates in carriers, magazines, or single substrate handling
- Manual, semi-automated, or fully automated loading and unloading systems for substrates, carriers, and magazines

Member of



SINGULUS TECHNOLOGIES



- Integrated inline sanitisation and disinfection systems to avoid bioburden
- > Dry-in and dry-out handling of substrates
- GMP Compliance Management for regulated industries
- > CE, UL, FM and further standards compliance

Vacuum Coating Technology:

Sputtering System POLYCOATER

The well-established inline sputtering system POLY-COATER of SINGULUS TECHNOLOGIES combines proven coating technologies, high-performance expertise, and unique mass-production experience with a revolutionary tool concept for coating homogeneous layers on 3-dimensional parts. Such decorative, functional or conductive layers are required for packaging in the medical industry, antibacterial coatings for various products, EMI-shielding, and many other applications for electronic devices in the medical business.

POLYCOATER Highlights for Medical Applications:

- > Dense barrier layers, gradient layers
- > Anti-reflection coatings
- > Top/Hard coatings
- > Adhesion-promoting layers
- > Plasma functionalisation
- > Plasma cleaning, plasma sterilisation
- Decorative coatings
- Antibacterial coatings

SINGULUS TECHNOLOGIES continuously improves its equipment and technologies to match the demanding characteristics and functionalities expected in the medical industry for the highest product quality requirements under most stable and repeatable production processes. For this reason, SINGULUS TECHNOLOGIES observes GMP (good manufacturing practice) principles, GAMP (good, automated manufacturing practice) guidelines, and other relevant directives for regulated industries.



Name > Stäubli Tec Systems GmbH Robotics

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| State > Ba | varia |
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| Glo | obal Head of Pharma and Medical |
| Ro | botics |
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| Fax > +4 | 9-921-883-3444 |
| Email > rm | .weiss@staubli.com |
| Website > wy | ww.linkedin.com/company/ |
| sta | aubli-robotics/ |
| Social Media > f | Ƴ in 水口 ‰ |
| Number of Employees > 5,7 | /00 |
| Founded (year) > 18 | 92 |
| Areas of Activity > Ir | ndustrial automation |

Areas of Activity > | Industrial automation | Industrial robots | Life sciences | Medical technologies



Robot-enabled transport of biological tissue under aseptic conditions

A French company is improving the production of artificial human skin with its Next Generation Bioprinting (NGB) platform. Clinical trials will take place this year. Taking part: a Stäubli TX2-40 robot. Under aseptic conditions in an isolator, the robot transports the sections of skin under production from one 3D print head to another.

Poietis, a French startup, has been working on technology to simplify the production of human tissue since 2015. It is possible to "reproduce" human skin or the cornea of the eye, for example. However, the methods for doing so are very expensive: a cornea costs around 100,000 euros. In addition, because there is little standardisation or automation of the process, the level of quality is not consistent.

Poietis tackles this task with the tools of industrial automation. The company has developed a robot cell that operates under aseptic conditions. Within the hermetically isolated workspace is a cell culture plate on which the tissue is produced. Multiple print heads print the cells and other materials that also comprise the tissue. The robot moves the tissue being produced from one print head to another, adapting to the various bioprinting methods (laser print and extrusion) integrated into the platform.

When it began developing the Next Generation Bioprinting (NGB) platform, Poietis decided to use a Stäubli TX2-40 six-axis robot in the Stericlean version. This class of robots was developed specifically for medical and pharmaceutical applications and can therefore be completely cleaned and sterilised.

Member of





NGB-R

The Poietis NGB platform uses a Stericlean version of the Stäubli TX2-40 robot for 3D printing of human skin tissue.



The result: a piece of skin tissue created by the NGB platform.



With the Next Generation Bioprinting (NGB) platform, Poietis has developed a robot cell that operates under aseptic conditions.

STÄUBLI TEC SYSTEMS

Fabien Guillemot, the company's CEO and Chief Scientific Officer, explains: "The primary reason: Stäubli was and is able to deliver robots in two configurations that precisely match our demanding application profile, both for research and development and for clinical applications. In addition, the robots are GMP-compatible and already used for pharmaceutical production and medical technology."

The precision and speed of the robots were also persuasive factors. "The TX2-40 enables us to move to the various print heads with high precision, speed, and reproducibility. In addition – and this is extremely important for our application – during operation it does not emit any particles that could contaminate the tissue," says Guillemot.

Benefits:

- > Cost-effective and rapid production of human tissue (skin and cornea)
- > Standardisable Procedure process that can be standardised, thus ensuring higher quality
- > High-level degree of hygiene
- > Improved tissue function
- > Adaptable to other tissue types (cartilage, neurons)



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| Email | > | info@tradex-services.com |
| Website | > | www.tradex-services.com |
| Number of Employees | > | 5 |
| Founded (year) | > | 1998 |

Areas of Activity > Exhibitions

Tradex Services – Your full event service provider

As a highly specialized and well-established company we are supporting companies from Germany, Austria and Switzerland to grow their business presence worldwide - physically and digitally.

Therefore, we are collaborating with the largest exhibition organizers and are procuring floor space at many international renowned trade shows of different branches to offer exhibitors the comfort of showcasing their companies' capabilities easily and stress-free within our custom-built pavilion, individually or as a part of an official national or state pavilion. In additional to our basic services Tradex^{fairs} and Tradex^{pavilion}, based on our 20+ years of experience and the current business climate, we have developed unique digital tools to further enhance your company's presence on a global scale:

- Digital Exhibitor Catalogue (www.exhibitor-catalogue.com) - Be present all the time
- > Tradex⁺ Stay connected all the time
- > Tradex^{app} Your mobile event companion

Our interlocking tools, know-how, high level of customer service and carefully selected partner network are constantly at your service to ultimately provide you with the best support your company deserves - so you can fully concentrate on developing your business network and lead generation, resulting in a healthy ROI.

Digital Exhibitor Catalogue (XC)

Our digital exhibitor catalogue (XC) - ,Your Promotion and Advertising platform' A smart solution for tomorrows standards, this tool helps prepare exhibitors to always be one step ahead. A combination of several smart applications that support Marketing / Networking / Promotion / Advertising platforms, our services takes international business development to a whole new interactive level.

Fully customized vBooths can be created, enabling you to present your products and services for specific target groups: worldwide - 24/7/365. A blend of several interactive communication tools, such as video calls, live chat and screen sharing directly on your vBooth.

TRADEX-SERVICES



All products / services can be linked to any relatable content, that will assist in the sales process, including webinars, tutorials, catalogues, social media, etc.... In addition to this, we offer an integrated ,Business Appointment Scheduler', which helps you to optimize your time at live events by coordinating your meetings.

Our digital exhibitor catalogue (XC) includes not only your basic company details, but as well attendant to your physical show participation your vBooth and a youtubefilm, which shows the ,route to your physical booth'.

This gives your company the chance to stay visible all the time and provides you with a unique opportunity to announce your exact stand location at a specific trade show, further increasing your exposure, so your clients always will be able to find you during the show and you avoid missing business opportunities.

Our digital exhibitor catalogue (XC) obtains all provided information of your company and feeds your Tradexapp entry with all necessary information.

Tradex⁺

Tradex⁺ - ,Your Marketing and Networking platform' helps you to stay connected and promotes your company 24/7/365. Share up to 50 product and service pictures, videos, detailed descriptions and downloadable catalogues on a media-rich profile. Add social media links and personalized team contact information to your profile and streamline your business activity. Tradex⁺ is the foundation for all of our interactive digital services.

Tradex^{app}

Tradex^{app} - Your mobile event companion combines all features of Tradex⁺ and the digital exhibitor catalogue (XC), which enables you and your clients to stay in touch all the times. The app, available for IOS, android smart phones and tablets, qualifies anyone to interact with you before-during-after each show being held. Integrated search functions to check for profiles, products, etc. are linked to our company data base and digital exhibitor catalogue (XC). Additionally a Route-Planner and Appointment Manager helps you to organize and to coordinate your events.

Transline

Translation - key to understanding.

Name > Transline Gruppe GmbH

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| Social Media > | ¥in ∛ ◘ |
| Number of Employees > | > 150 |
| Founded (year) > | 1986 |
| | |

Areas of Activity > | Translation and localisation | Language consulting | Terminology management | Source-text optimisation

External > MedicalMountains Collaborations

Member of

Medical technology content in 160 languages

Global markets offer your company great opportunities. Our mission, and our strength, is to work with you to capture them. Highly professional translations are the key to international markets. With more than 170 employees in Europe and approximately 5,000 specialised translators worldwide, Transline is one of the largest translation service providers in Germany. Our customers include many large global companies who appreciate the quality of our translations, the outstanding IT-driven project management, and the speed with which our company implements their projects.

Certified - for safety and quality

With the safety of your users always in mind, we translate your medical texts with the utmost precision. This is confirmed by our ISO 17100 and ISO 13485 certifications – making our quality binding, measurable, and verifiable.

Standard-compliant – tailored to target languages and markets

Our experienced specialised translators in the target countries create standard-compliant language versions – helping you ensure regulatory compliance as a manufacturer or distributor.

People and technology – in perfect symbiosis

Culturally authentic, easy-to-understand texts provide user safety. And the latest language technologies get your products to world markets faster. Our industry specialists expertly translate even low-context strings and length-limited texts, and also test the usability of digital multilingual content for you.

MedicalMountains

Translation for the entire medical product lifecycle.









"State-of-the-art" language technologies

We have repeatedly been ranked as the "Best Language Service Provider for SMEs", because all our processes are consistently focused on the needs and requirements of our customers. They benefit from simple and efficient procedures as well as clear, easy-to-understand texts that are ready for the international market in the shortest time possible.

"Best-in-class" supplier management

Our native speakers are subject to strictly defined criteria such as a recognised university degree and several years of experience in the field of medical technology. We are constantly developing their performance with our evaluation and feedback system. Only top language suppliers are used for healthcare-related texts.

"One-stop" language management

We talk MedTech in all languages and follow the medical product lifecycle from clinical studies to patents and e-health products – with comprehensive translation services and language consulting:

- > Source text optimisation
- > Process consultation
- > Project management
- > Tool infrastructure
- > In-country reviews
- Desktop publishing
- > Backtranslation

DÜRR DENTAL about Transline

"With Transline's integrative portal solution, we have significantly increased our process reliability by eliminating manual steps. At the same time, we benefit from shorter delivery times, improved quality, and cost savings for translations. Plus: all steps and corrections are documented clearly and in accordance with the MDR." /// Dr Martin Koch, Head of Technical Academy at DÜRR DENTAL SE

TRUMPF

Name > TRUMPF Laser- und Systemtechnik GmbH Address/P.O. Box > Johann-Maus-Strasse 2 Postal Code/City > 71254 Ditzingen State > Baden-Wuerttemberg Contact Person > Dr Bernd Block Telephone > +49-7156-303-30862 Email > medtec@trumpf.com Website > www.trumpf.com Social Media > in Number of Employees > 16,500 Founded (year) > 1923

Areas of Activity > TRUMPF is a technology and market leader in highly versatile machine tools for sheet metal processing and in the field of industrial lasers.

Annual Turnover > €4.2bn

Member of





TRUMPF was founded in 1923 as a series of mechanical workshops and has since then developed into one of the world's leading companies for machine tools, laser technology, and electronics for industrial applications. The company's mission is to further develop and digitally connect production technology, to make it even more efficient, precise, and future-proof. In doing so, TRUMPF works towards making manufacturing and its upstream and downstream processes more efficient. TRUMPF's software solutions pave the way to the Smart Factory, allowing companies to implement high-tech processes in industrial electronics.

The family company is headquartered in Ditzingen near Stuttgart, Germany and is represented by over 70 subsidiaries in all of the world's leading markets. Production facilities are located in Austria, China, the Czech Republic, France, Great Britain, Italy, Japan, Mexico, Poland, Switzerland, and the United States.

Expert in laser technology

The product portfolio of TRUMPF starts in the range of low-power lasers for e.g. marking and ends up with multi-kilowatt systems for the chip-producing industry. Between these poles a large variance in power, pulse length, wavelength, and beam quality can be offered. No matter if it is cutting, welding, cleaning, or marking of stainless steel, aluminum, copper, or plastics – there is a laser for each application. Furthermore, a large variety of machine systems is available.

TRUMPF is a strong and reliable partner for medical technology companies, mainly in the fields of laser marking, laser cutting, and laser welding, but also in metal 3D printing. Long-term success within the market is based on high-end technical solutions and a strong drive for innovation.

Laser marking

Laser marking is a process that has become indispensable when applying UDI codes. Nevertheless, every material needs the right laser to apply high-quality markings. For instance, the integration of pico- and femtosecond lasers into marking systems enables the so-called blackmarking process. This process is used to create durable, long-lasting UDI markings on metal surfaces – a manda-

TRUMPF







tory requirement for the medical-device production. In addition, TruMark systems also realize processes related to the actual marking, such as quality control through image processing or communication with databases.

Laser welding + Laser cutting

The joining of complex products requires highly reliable manufacturing methods. The TRUMPF laser welding systems enable a broad range of benefits in precise and repeatable 3D laser welding of assemblies such as medical instruments. The large variety of welding optics and laser sources allows the optimal configuration for individual production demands. Implemented image processing and monitored laser power ensure consistently high-quality process results.

As a pioneer in laser cutting, TRUMPF offers sophisticated and robust technology for 2D and 3D cutting applications. Thanks to excellent precision and dynamics, even the smallest workpieces and devices can be processed without compromising on the high demands for quality and productivity.

Metal 3D printing

3D printing is shaping the future of industrial production. Metal 3D printing with TRUMPF offers the possibility to create a completely new product right from scratch that fulfills the quality standards. Starting with loose metal powder, our TruPrint machines can economically print orthopaedic devices, CMF implants, tooling inserts for the manufacturing of disposable products, or any other devices. In addition, further developments of in-line process monitoring and process automation make the technology even more reliable and reproducible.

To satisfy the high demands of medical technology, TRUMPF Laser- und Systemtechnik GmbH not only offers turnkey solutions including consulting and application support, but also provides expert advice in industry-specific topics such as equipment qualification. Together with its customers, TRUMPF acts as a solution provider with a strong focus on future trends and development projects.

Get in touch at www.trumpf.com



Name > Tyrolit - Schleifmittelwerke Swarovski K.G.

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|---------------------|---|--------------------------------|
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| Email | > | medical.technology@tyrolit.com |
| Website | > | www.tyrolit.com |
| Social Media | > | 🖒 Y in 🖸 🖸 |
| Number of Employees | > | > 4,000 |
| Founded (year) | > | 1919 |

Areas of Activity > Grinding, cutting and finishing tools for medical technology: | Orthopedics (artifical knee, hip and trauma implant grinding) | Medical equipment (bone rasps, drills, milling cutters, scissors, scalpels, tweezers, etc.) | Dental (drills, files, burs) | Needles (hypodermic and sewing needle grinding) | Guide wires

Annual Turnover > €663m (2021)

Member of



The Tyrolit Group

Tyrolit is one of the world's leading manufacturers of grinding and dressing tools as well as a system provider for the construction industry. Since 1919, our innovative tools have made an important contribution to the technological development in many industries.

Tyrolit offers tailored grinding solutions for various applications, as well as a comprehensive assortment of standard tools for customers all over the world. With roots in the heart of the Austrian Alps, Tyrolit combines the strengths of family values with a global vision and over a century of individual corporate and technological experience.

Tyrolit in medical technology

These days, humans are getting older on average than ever before. Since 1990, life expectancy in the EU has increased from 74 to over 81 years. This trend has a major impact on many parts of our life.

The trend of an ever-aging society has increasingly brought medical advancements and medical technology into the spotlight. At the same time, a long and active life puts a particular strain on our joints. Orthopaedics therefore plays an important role in the field of medical technology. Hip and knee joint operations in particular are now routine interventions. However, the dental industry accounts for the largest percentage of implants. Over one million dental implants are installed each year in Germany alone.

The demand for ever better and more durable products through the use of new materials in the production process is steadily increasing. With numerous system solutions and proven experience, Tyrolit is a competent partner for medical technology customers.

TYROLIT



Due to the high requirements and small tolerances in this industry, partners experienced in manufacturing are needed to guarantee consistent quality of the finished products. With innovative grinding solutions, for example, Tyrolit ensures that hypodermic needles are sharp with no microscopically small barbs and that patients with new hips can get back to moving smoothly as quickly as possible.

In knee joint grinding Tyrolit offers a lightweight core made of natural fibres, which allows for a significant weight reduction. The N-LW (natural lightweight) core is not only lighter and more cost-effective, but also offers positive damping characteristics. In grinding femur components the use of superabrasive grinding tools is the industry standard and Tyrolit manufactures a doublelayered disc with a high abrasive layer and special shape that can be used for processing over the full 20 mm.

For the machining of hip joints Tyrolit offers a selection of various resin and vitrified bonded grinding and polishing sleeves. The productivity of the manufacturing process can be increased by using conventional or superabrasive grinding tools adapted to the respective application. For example, by using superabrasive tools, the cycle times for pre-grinding could be reduced from 10 minutes to 1 minute.

A third pillar of Tyrolit's medical technology portfolio is the processing of surgical instruments. An updated range of grinding and finishing tools is used for a variety of finishing processes. For more safety during surgical procedures, scalpels are sharpened with cool cut discs and finished with elastic or non-woven tools, thus guaranteeing the highest surface quality.

Tyrolit, a household name in all abrasive applications, offers customers also a dedicated application engineering support for the optimal use of its abrasive tools.



Name > Wickert Maschinenbau GmbH

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| Website 2 | https://www.wickert-presstech.de/en/ |
| Social Media | Ain 🖸 🖸 |
| Number of Employees | 190 |
| Founded (year) | 1901 |
| | |

Areas of Activity > | Presses and press systems for processing elastomers, composites, plastics, and powder materials. | Pharmaceutical industry | Medical technology | Automotive industry | Construction | Research and laboratories

Annual Turnover > €45m (2021)

Member of



Pharmaceutical and clean room presses from the world market leader Wickert Maschinenbau

Wickert Maschinenbau GmbH is the world market leader in clean room and pharmaceutical presses for medical technology. In addition to individual machines, the medium-sized family business offers customised, fully automated process and system solutions right up to turnkey projects.

These are used to process elastomers, composites, plastics, and powder materials. For example, most suppliers for production of the Corona vaccine manufacture the rubber closures for the COVID-19 vaccine on elastomer presses from Wickert. Other companies use the machines to produce pharmaceutical stoppers and plungers, for example syringe plungers for disposable syringes, and needle protection caps made of elastomer. As products in the field of medical technology have to meet high requirements in terms of dimensional accuracy, leak tightness, and resistance to extreme temperatures and material ageing, production is often challenging.

Customised press systems meet the highest requirements

In order to meet different requirements, Wickert manufactures all press systems to order. Numerous parameters such as pressing force, heating platen size, installation height, piston stroke, and degree of automation can be individually specified.

WICKERT MASCHINENBAU



Precise production in the clean room under vacuum

Medical technology parts that are potential particle load carriers have to be very clean, in some cases even sterile. There must be no organic particles stuck to them and the parts themselves must not emit any microparticles or substances. To ensure this, Wickert supplies press systems for clean room production.

The leak tightness of closures and other products is often an important additional quality characteristic. Not only must these parts be particularly precise in terms of their dimensions, but also in terms of their resilience properties. For this purpose, they must be uniformly moulded at a specific vulcanisation pressure. In addition to a suitably high pressing pressure, the prerequisite for this is the exact parallelism of the heating platens.

Precise temperature distribution with narrow tolerances also contributes to a high-quality production result. Wickert presses guarantee that deviations are less than $\pm 1^{\circ}$ C at temperatures of up to 230°C.

The rubber compounds used in the pharmaceutical sector have a very strong tendency to form quality-reducing air pockets. Therefore, the vulcanisation process in the pharmaceutical press takes place completely within vacuum chambers. The prevailing vacuum of up to -950 mbar ensures a very reliable and easy-to-control vulcanisation process without air pockets.

Process monitoring ensures traceability

Pharmaceutical presses from Wickert are equipped with diverse monitoring modules for quality verification and the documentation of process data. Data such as temperature, pressure, time, speeds, and vacuum are recorded via a corresponding sensor system and permanently evaluated in the machine control system using tolerance ranges. This comprehensive process monitoring enables close-meshed quality verification and traceability of individual batches.



Name > WILD Group

| Address/P.O. Box | > | Wildstraße 4 |
|-----------------------|---|----------------------|
| Postal Code/City | > | 9100 Völkermarkt |
| Country | > | Austria |
| Contact Person | > | Franz Aigner |
| Telephone | > | +43-4232-2527-239 |
| Email | > | franz.aigner@wild.at |
| Website | > | www.wild.at |
| Social Media | > | 日 in ベ |
| Number of Employees | > | 500 |
| Founded (year) | > | 1970 |

Areas of Activity > Contract development and contract manufacturing of optomechatronic systems and complete high-tech devices for medical & life sciences, laboratory technology, in-vitro diagnostics & analytics, laser technology, optical measurement technology, semiconductor technology, and additive manufacturing.

External > | SPECTARIS

Collaborations | WIN – WILD Integrated Network

| EIT Health

- Additive Manufacturing Austria
- | HTS Human Technology Styria
- Silicon Alps
- Silicon Alps
- | Medizintechnik-Cluster Business Upper Austria
- | Photonics Austria
- | VNL Verein Netzwerk Logistik
- | qualityaustria
- | IV-Industriellen Vereinigung
- | Health Tech Cluster Switzerland
- StEP-Up

The WILD Group Your experienced partner in contract development and manufacturing

WILD is your technology partner for product development and serial production of opto-mechatronic components and complete high-tech devices. We develop and manufacture exclusively on behalf of our customers – world market leaders as well as start-ups – in medical technology, optical technologies, and industrial technology.

Our customers appreciate the combination of our core competences in:

- > Precision mechanics/mechatronics
- > Electronics & software
- > Technical optics

WILD is able to enter a project at every stage of the product cycle. No matter if it is still in development, in transition to serial production (industrialisation), or in the mature phase of the life cycle (production transfer). We solve complex problems with a flexible combination of suitable elements from our range of services:

Engineering Services:

- Mechanical design
- Optics design
- > Software & electronic components design
- Lightsource design
- > Prototyping
- Regulatory affairs

Assembly Services:

- Assembly of complex opto-mechatronic components and complete devices
- > Clean room assembly & assembly of sterile products
- Validated and stable processes, ISO 9001, ISO 13485, MDR and GMP compliant, FDA approved
- Documented final testing and initial setup
- High-precision positioning of optical components through state-of-the-art centre turning equipment

Member of










Manufacturing Services:

- > Mechanical manufacturing of precision parts: CNC milling, turning, grinding, eroding, etc.
- Surface Engineering: Galvanic surface treatments (electroplating), anodising, varnishing, blasting, printing, etc.
- Furthermore: All sorts of plastics manufacturing, sheet metal manufacturing EMS, etc.

Quality Management

- > Process validation (IQ, OQ, PQ)
- > Risk analyses (PFMEA)
- > Incoming goods inspection (FAI)
- > Master Validation Plan (MVP)
- Certified and stable processes according to ISO 13485:2016 and ISO 9001:2016, Medical Device Regulations (MDR), and FDA regulations

Supply Chain Design

- > Strategic supplier qualification
- > Defined release process according to standards
- > Risk analysis (supplier, process, product)
- > Auditing of suppliers
- > Supplier evaluation & supplier development
- > VMI Vendor Managed Inventory

Further Services:

- > Value & Life Cycle Engineering
- > Production Transfer
- > Repairs & Refurbishments

We adjust our service packages to suit your requirements. Our broad range of technologies combined with a strong partner network (WIN: Wild Integrated Network) ensures stable processes across the entire product life cycle of your products.

Don't hesitate to contact us and let us support you!

Creatives with Competence

Name > WILDDESIGN GmbH

| Address/P.O. Box > | Munscheidstr. 14 |
|-----------------------|------------------------|
| Postal Code/City > | 45886 Gelsenkirchen |
| State > | North-Rhine Westphalia |
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| Fax → | +49-209-702-642-10 |
| Email > | info@wilddesign.de |
| Website > | www.wilddesign.com |
| Social Media > | Ƴ in |
| Number of Employees > | 50 |
| Founded (year) > | 1990 |
| | |

Areas of Activity > | Medical Design | UX/ UI-Design | Usability Engineering | Design Engineering | Design Strategy

External > Offices & Sister companies: Collaborations | WILDDESIGN Munich | WILDDESIGN Magdeburg | WILDDESIGN Shanghai | Milani design & Consulting Zurich | Evrbit digital strategy Cologne

Member of





Medical Design

Every day we develop functional and easy-to-use solutions to serious problems and challenges and help our clients turn them into real business successes. The less that users notice this effort, the better job we've done.

What we do

We focus on creatively solving challenges in the regulated environment of healthcare, pharmaceuticals, and life sciences. We call this MEDICAL DESIGN. With the help of our product and user interface designers, we solve the tasks that our usability experts set us, based on intensive user research and testing.

Our clients see us as a creative catalyst who helps them to design the ideal product from the findings of applications, technology, and the market. Our design service integrates well with existing in-house activities. Like a creative engine, our services start at exactly the right point in the process chain.

For WILDDESIGN's clients, design is a premium strategy for creating new and innovative products tailored to global markets. Our clients range from young start-ups to established market leaders in the healthcare, pharmaceutical, medical, laboratory, biotech, and life sciences sectors, to name a few:

Aesculap, Ambu, Avatera, BBraun, Boehringer Ingelheim, Clinomic, Codan, Dräger, Getinge Maquet, Juzo, Löwenstein medical, Medi Globe, Pantec biosolutions, Rejoin, Sartorius, Siasun, Spindiag, Sartorius, TQ Systems, Vetter, and Wild.

Who we are

WILDDESIGN is an internationally established design company with German origins. Our claim "Creatives with competence" stands for our passion for brilliant ideas and our foundation on science and research.

WILDDESIGN







In 2021, WILDDESIGN became part of the Swiss LCG larssoncreative group and can now draw on a team of almost 100 creative minds and an expanded portfolio of services in the areas of Sustainable Design, Digital Strategy, and IoT. The WILDDESIGN teams work in 4 offices (Gelsenkirchen, Magdeburg, Munich, and Shanghai) and count 50 creative employees: Industrial Designers, UX/ UI Designers, Design Engineers, Usability Professionals, Design Consultants, Media Designers and Design & Brand Strategists.

Recognition

With more than 50 international design awards, such as the red dot for outstanding product design and the IF Design Award, more of our clients' projects receive recognised recognition every year.

FACILITIES

- > Gelsenkirchen 500 m² office and workshop
- > Magdeburg 240 m² office and workshop
- > Munich 380 m² office and workshop
- > Shanghai 450 m² office and workshop

Fields of expertise

Over the past 30 years, WILDDESIGN has been involved in more than 600 product innovation projects for more than 400 satisfied customers. These include laboratory equipment, surgical instruments for laparoscopy, microsurgery and neurosurgery, surgical eye lasers, infusion pumps, vacuum pumps, cardiac catheterisation systems, laboratory automation and in-vitro diagnostics, bioprocessing systems, robot-assisted surgical assistance systems, intensive care ventilation equipment, anaesthesia equipment, melanoma diagnostics, nebulisers, drug delivery devices, sterile packaging systems, heart-lung machines, surgical support arms and trolleys, operating theatre lights, point-of-care diagnostics, orthotics, wearables for various therapies, dehumidifiers and air conditioners, endoscopes and cleaning systems, ecological developments with LCA (life cycle analysis), and much more.

WIPOTEC

Name > Wipotec GmbH

| Address/P.O. Box → | Adam-Hoffmann-Str. 26 |
|-----------------------|-----------------------|
| Postal Code/City > | 67657 Kaiserslautern |
| State > | Rhineland-Palatinate |
| Contact Person > | Oliver Holzwarth |
| Telephone > | +49-631-34146-0 |
| Fax > | +49-631-34146-8640 |
| Email > | info@wipotec.com |
| Website > | www.wipotec.com |
| Social Media > | fi in 🖸 |
| Number of Employees > | >1,000 worldwide |
| Founded (year) > | 1988 |

Areas of Activity > Wipotec is a leading global provider of intelligent weighing and inspection technology. With a broad portfolio of checkweighers, X-ray scanners, Track & Trace systems, and innovative solutions for the mail and logistics industry, Wipotec serves our global retail business in many target industries.

Global leader for intelligent weighing and inspection technology

As a founder-managed company with more than 30 years of experience, our value chain strategy is over 85% self-made. We provide customised solutions from a single source, beginning with hardware and software development, through production, to supply chain integration and maintenance. Our competence centre delivers premium quality: designed, engineered, and manufactured in Germany. Driven by our corporate philosophy – "Innovation. Passion. First." – we develop and produce unique machine solutions and technologies for OEM and end users in a wide range of industries at our head office in Kaiserslautern. At Wipotec, we value enduring, long-term partnerships and always put our customers first. "First" as in top priority.

Everything under one roof

All Wipotec products and integration solutions are developed in the modern Wipotec parent works in Kaiserslautern and built with the highest engineering skill. High quality and reliability paired with extraordinary performance characteristics and straightforward integration are achieved with the motto "everything from a single source". This philosophy of short channels is a guarantor for maximum quality control, the rapid application of new innovations, and flexibility in the realisation of your requirements. Irrespective of how unusual your application appears, the motto of our CEO and founder Theo Düppre that "nothing is impossible" drives us to the highest achievements while finding the optimal solution for you.

Member of





Our standing Certified to ISO 9001.

Our quality management system always ensures that customer expectations are exceeded. ISO certification is only the official stamp of our achievements, but the desire for continuous performance improvement comes from deep within us, from the heart.

Corporate Social Responsibility.

As a major regional and global employer, we are aware of our responsibility. Social commitment, an employeeoriented personnel policy, fair dealings with suppliers, and the conservation of resources are, for us, a natural part of entrepreneurship. With the Code of Conduct we commit ourselves and all our employees to strive for the best.

Energy-autarkic production.

Climate and environmental protection is not greenwashing for us. We care about the environment and how we can protect the earth within the scope of our influence. With our own solar park, a geothermal plant, halls and administration buildings in passive house standard, as well as vehicles, we are working towards complete energy self-sufficiency. But processes, plants, as well as our suppliers must also meet our high standards. We want to reduce emissions, use only regenerative raw materials, and act in an ecologically and economically sensible way.

WIRTHWEIN MEDICAL

Name > Wirthwein Medical GmbH & Co. KG

| Address/P.O. Box | Bahnhofstrasse 80 |
|---------------------|----------------------------|
| Postal Code/City | 64367 Mühltal |
| State > | Hesse |
| Contact Person > | Janina Adam |
| Telephone > | +49-6151-919-340 |
| Fax > | +49-6151-919-919 |
| Email > | info@wirthwein-medical.com |
| Website > | www.wirthwein-medical.com |
| Number of Employees | 330 |
| Founded (year) | 1946 |

Areas of Activity > | Medical technology | Diagnostics | Pharma

Wirthwein Medical GmbH & Co. KG – We bring plastics to life

Founded in 1946, Wirthwein Medical GmbH & Co. KG is today a high-performance system supplier for plastics processing and a development partner for plastic-based product solutions. Focusing on quality and innovation, Wirthwein Medical has also internationally made its mark in the diagnostics, medical technology, pharmaceutics industries - with high-precision, customized components, packaging and systems. Our core competences include development, design, mold making, injection molding and extrusion blow molding and a wide range of assembly, finishing and logistics services. Most of production is carried through in class 7 clean rooms pursuant to ISO 14644-1. Highest, standardized guality and hygiene standards are assured using gapless, certified quality management according to ISO 13485, 9001. 15378 and ISO 50001.

Presently, more than 300 employees work at three sites in Mühltal and Ober-Ramstadt – on a total area of around 55,000 square meters.

Wirthwein Medical GmbH & Co. KG has been a subsidiary com¬pany of the internationally active, familymanaged Wirthwein Group since 2005.

Highest article purity thanks to certified ISO 7 clean room production

As an experienced expert in clean room production, we manufacture customer-specific system solutions and components under standardised and controlled conditions. Based on our hygiene guidelines according to DIN EN ISO 14644-1 (Class 7), process monitoring, and our Wirthwein Medical Minimum Human Contact philosophy we guarantee clean and dust-free production of your products. Our reliability is appreciated by our customers from pharmaceutics, diagnostics, and also medical technology, particularly in the application field of PCR and in ATP hygiene monitoring.

WIRTHWEIN MEDICAL





All in One by Wirthwein Medical

As a system supplier of highly complex plastic components, assemblies, and packaging material we meet the specific demands on the medical technology, diagnostics, and pharmaceutics industries.

Product examples:

Medical technology

- > Micro molded parts made of thermoplastic materials
- > Tubes and flanges for hemodialysis
- > Systems for ophthalmological applications

Diagnostics

- > Diagnostics systems for automated blood analysis
- > PCR diagnostics (e.g. tubes & stripes)
- > Laboratory diagnostics (e.g. petri dishes)
- > Systems for DNA analysis & DNA duplication

Pharmaceutical industry

- > Polymer glass replacement solutions
- > Rapid test devices (e. g. for ATP measurements)
- > Dosing and closure systems
- > Plastic bottles for drugs and sensitive active ingredients
- > Primary packaging for maximum patient safety

Customized packaging solutions made of plastics

We provide you with high-quality and economic primary and secondary packaging for a variety of applications in the diagnostics, medical technology, cosmetics, pharmaceutics, and food industries:

- > Closures and covers
- > Bottles
- > Containers and cans
- > Application systems and mixing systems



Name > ZECHA Hartmetall-Werzeugfabrikation GmbH

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|-----------------------|------------------------|
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| Telephone > | +49-7232-3022-0 |
| Fax > | +49-7232-3022-25 |
| Email > | info@zecha.de |
| Website > | www.zecha.de |
| Social Media > | 🖬 Y in 🖸 |
| lumber of Employees > | Ca. 130 |
| Founded (year) > | 1964 |
| | |

Areas of Activity > | Medical and dental technology | Chronograph industry | Automotive industry | Tool and mould making

External > | AlienTools GmbH Collaborations | MPK Special Tools GmbH | ZECHA PRECISION TOOLS LIMITED

Member of



ZECHA Hartmetall-Werkzeugfabrikation GmbH has been a pioneer and trendsetter in the field of micro cutting, blanking, and forming tools for over half a century. The company's origins in the chronograph industry can be seen not only in its uncompromising specialisation in the production of miniature tools of the highest precision, but also in its special tool solutions. Precision and quality are key for the international application in different industries, for example, in medical and dental technology.

Reliable machining of steels up to 58 HRC, titanium, stainless steel alloys, and special materials

Especially in medical technology, the centre cut ensures excellent surface finishes for all QUEEN BEE tools, even in flat areas, in dry as well as wet milling. With adapted flute and micro geometries for good chip removal and quiet cutting, the machining of titanium, stainless steel alloys, and special materials up to 2.200 N/mm² and to pre-mill soft steel components up to 58 HRC with the highest service life and maximum precision.

Optimum geometries for Torx®* interfaces

Machining of titanium, stainless steel, and special materials in medical technology requires individual solutions at the highest level. For example, the TORX^{®*} interface in medical technology is a proven and frictional connection between bone screw and screwdriver. For milling the TORX^{®*} contour in titanium and stainless steel screws, ZECHA designed special micro-milling cutters that offer maximum precision, surface quality, and sustainable profitability.

Precise tools for implants

In addition to patented series 462 of solid carbide whirl thread cutters for cylindrical and precisely contoured internal threads, such as those needed for implant posts and medical devices, ZECHA also offers reliable diamondcoated milling cutters for machining zirconium oxide, as well as special WAD-coated milling cutters for cobaltchromium, plastics, and wax for manufacturing dental replacements.



ZECHA HARTMETALL-WERKZEUGFABRIKATION

Reliable tools for the dental industry

Materials that are especially difficult to machine call for high-quality milling tools to produce the small, intricate geometries of inlays and onlays, bridges, and crowns. For these applications, ZECHA produces reliable diamondcoated mill cutters for the machining of zirconium oxide, cobalt-chromium, plastics, and wax.

Competence in the manufacture of bone plates

Exacting applications in titanium, stainless steel, and special materials, such as for the complex production of bone plates, are mastered by using ZECHA's high-quality, optimally coordinated tool solutions.

Steadfast with cool precision

The KINGFISHER line was developed especially for the machining of difficult-to-process materials in medical technology and features the interplay of new solid carbide substrate, innovative cooling solutions, and a more stable basic geometry. In combination with the latest WAD coating technology, these tools master any challenge steadfastly and precisely. Two different integrated cooling solutions independent of the tool – coolant channels in shank (SC) and internal cooling (IC) – deliver the coolant where it is needed: directly at the flute.

Challenge of PEEK machining

For difficult-to-machine materials in the medical technology sector, ZECHA sees a solution approach in the use of the innovative IGUANA tool line. With laser-sharpened cutting edges and highly wear-resistant, sealed diamond coating, these multi-cutters in the small bore sector effortlessly process highly abrasive materials such as nonferrous metals, copper, or even PEEK.

* Third-party brand



Seeing beyond

Name > ZEISS Industrial Quality Solutions

| Address/P.O. Box | > | Carl-Zeiss-Straße 22 |
|-----------------------|---|-----------------------------------|
| Postal Code/City | > | 73447 Oberkochen |
| State | > | Baden-Wuerttemberg |
| Contact Person | > | Johannes Kohl, Matthias Schneider |
| Telephone | > | +49-7364-20-6337 |
| Email | > | sales.metrology.de@zeiss.com |
| Website | > | https://www.zeiss.de/messtechnik/ |
| | | medical |
| Social Media | > | 🖪 Ƴ in 🖸 🖸 |
| Founded (year) | > | 1846 |
| | | |

Areas of Activity > Quality assurance, tactile and optical measurement, X-ray/CT technology, microscopy, software, metallography, in-process control, technical cleanliness, GxP, IQ/OQ, tool correction

ZEISS Medical Industry Solutions – Quality Assurance for the Highest Medical Standards

Every company in the field of medical technology must meet extremely high demands regarding quality and procedures. Quality assurance processes must therefore be designed correctly, and companies must document and certify that those processes are always followed. ZEISS Medical Industry Solutions helps manufacturers to meet these challenges through its comprehensive and connected portfolio of hardware and software solutions that can be configured exactly to each customer's needs.

Ensuring that manufacturing and quality processes are correct can be extremely complex and time-consuming. This makes it even more important to have hardware and software solutions that can efficiently support all relevant regulatory demands. ZEISS's comprehensive portfolio of hardware solutions ranges from tactile and optical coordinate measurement machines and 3D scanners to microscopes as well as CT and X-ray solutions. Users benefit from industry-leading resolution, accuracy, measuring speed, and powerful automation. That said, the most important factor that enables a company to fulfil its legal requirements is the software. ZEISS software matches perfectly with the respective hardware. This helps manufacturers comply with the required step-by-step processes. The microscopes operate with ZEISS ZEN core software, which can be used on many devices, as well as with the optional GxP module. Equipped with such software, manufacturers can track and trace their processes at each step of production - from the raw materials to the final product. ZEISS software solutions allow companies to comply with DIN EN ISO 13485:2016 and EDA 21 CEB Part 11.

Member of





ZEISS INDUSTRIAL QUALITY SOLUTIONS







Certainty about all types of implants and their entire value chain

Different application areas, materials, and manufacturing processes require different quality gates and methods.

Medical implants are usually made within a metalworking manufacturing process. ZEISS can offer the right quality solution along the entire value chain – from metallography or granulate analysis to controlling incoming goods, inspecting raw materials, measurements, forms, and positions, as well as surface analysis during the processing and finishing.

In the production of medical plastic components using precision injection moulding, the ZEISS portfolio also offers quality solutions for optimising tool construction, inspection of the manufactured component, and assembly control. All individual solutions complement each other and thus cover the quality gates along the entire production chain. As a result, ZEISS Medical Industry Solutions deliver certainty about the accuracy of your production processes and the quality of your products. This helps medical companies to save time as well as money and to avoid risks.



Name > Zeltwanger Group

| Website > | www.zeltwanger.com |
|-----------------------|--|
| Social Media > | in 🖸 🖸 |
| Number of Employees > | >450 |
| Founded (year) > | 1982 |
| Name > | Zeltwanger Leak Testing & Automation GmbH |
| Address/P.O. Box → | Maltschachstraße 32 |
| Postal Code/City → | 72144 Dußlingen |
| State > | Baden-Wuerttemberg |
| Contact Person > | Mr Dominic Hofer |
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| | +49-171-9314971 |
| Email > | D.Hofer@zeltwanger.de |

About the company

All the companies in the ZELTWANGER Group have one thing in common: We stand for competency, innovation, and technical solutions at the highest level. We devote ourselves to this demand every day and everywhere in the world. Our customers benefit from the combined engineering, material, and production competencies of the whole ZELTWANGER Group. Our goal is to be the perfect partner for your processes, always offering ideal solutions.

Automation & Laser Applications

Whether welding, cutting, or marking – laser technology is essential for numerous production processes in medical technology. When automated, it brings many economic advantages, such as higher production capacity or process flexibility. A combination with a robot represents an optimal design for various applications.

X-LOAD cobot

For automated loading of existing working stations or laser marking machines we offer a compact and simple platform – the X-LOAD cobot. With the help of ou X-LOAD cobot you achieve continuous production 24/7 without large-scale investment.

X-CELL MED

If you prefer a one-box-solution, we can offer our X-CELL, which includes laser, feeding system, and handling within one cell. It represents a modular concept that can be supplemented according to your requirements.

X-WELD

If you require a compact welding laser, the X-WELD is the perfect device for you. It has a space-saving layout, yet is still able to process large components. Moreover, the working space is ergonomically designed and can be adjusted in height.

As an automation specialist we support our customers from analysis, customer specific solutions, assembly, and software development up to launch and service.

Member of



ZELTWANGER





ZEDmod with ZEDcore





Laser marking UDI

Leak Testing

Quality control is a key factor in production, especially in medical technology. Leak testing plays a vital role in this sector. As an expert in leak testing with air or tracer gases such as helium or forming gas, ZELTWANGER combines extensive knowledge and innovation. Impeccable performance meets unprecedented flexibility united in our modular architecture – representing a milestone in leak testing.

ZEDcore

The heart of our leak testing devices is the measuring module ZEDcore. It contains the measuring circuit – with choices of different methods such as relative pressure, differential pressure, mass flow, or others. Integratable into each ZELTWANGER device, it offers the utmost precision throughout the whole product family.

The ZELTWANGER family

Various demands require different solutions. Devices for one or two measuring circuits, devices for up to eight measuring circuits, or semi-/fully-automated leak test stations – the product family contains the perfect solution for every need, controllable via touch screen, different digi-I/-O solutions, or an external PLC.

Thanks to our extensive experience, our comprehensive knowledge, and our diverse product family, ZELT-WANGER is your excellent partner in leak testing.



Name > HELMUT ZEPF Medizintechnik GmbH

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|---------------------|---|----------------------------|
| Postal Code/City | > | 78606 Seitingen-Oberflacht |
| State | > | Baden-Wuerttemberg |
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| Fax | > | +49-7464-9888-88 |
| Email | > | info@zepf-dental.com |
| Website | > | www.zepf-dental.com/oem |
| Social Media | > | f D 🖸 |
| Number of Employees | > | 120 |
| Founded (year) | > | 1921 |
| | | |

Areas of Activity > Innovative developments and production of medical and surgical instruments

"Made in Germany" for more than 100 years

For generations already, HELMUT ZEPF has been a reliable partner in developing and manufacturing dental and surgical instruments. From the very first beginning of project planning phase until first serial batches are supplied, you can rely on one dedicated project partner who will take care of your demands fully and is in the position to take action by flat and fast decision making channels.

OEM

Benefit from our experience and our high level of inhouse production depth as innovation leaders in dental surgery, implantology and orthodontics.

- > Design and prototype construction
- > CNC production and automation
- > Vacuum hardening & soldering
- Galvanic working steps, vibratory grinding, beam technology & cleaning
- Laser welding & marking, GS1, HIBC, UDI with verification protocol (in-house verifying tools and machines)
- > Packing & logistics

Member of



Manufacturer since 1921





International

We export to over 70 countries worldwide! Our references in the field of contract manufacturing include renowned market leaders in dental implantology, oral- and maxillofacial surgery, ENT instruments, ophthalmologic instruments as well as instruments for neuro- and spinal surgery.

Our storage and maintenance solutions i.e. our diverse washing baskets find their individually adapted application in all areas of medical technology.

Especially in complex instruments and products you can rely on us such as:

- > Individually equipped storage and washing baskets for hygienic and maintenance procedures
- > Micro surgical instruments
- > Certified manufacturer for
 - > risk class Im products, i.e. torque wrenches with optional calibration protocol
 - > risk class IIa products, i.e. bone drills, bone mills and trephines
 - risk class IIb products, i.e. dental implants (bone screws and pins)

Why you should contact us for your project realization:

- > Certified medical device manufacturer
- > High level of in-house production
- Tuttlingen as our origin region, in which we combine:
 High-tech production and processes
 - > Surgical mechanic craftmanship
- > Many years of experience in taking care and supporting national and international projects

German Medtech Companies

The register contains cluster members and associated companies of:

| BVMed: | German Medical Technology Association |
|------------|---|
| FMP: | Network Forum MedTech Pharma |
| IVAM: | Microtechnology Network |
| LSN: | Life Science Nord Cluster |
| MM: | Cluster MedicalMountains |
| MTSW: | MicroTec Südwest |
| MV: | Medical Valley European Metropolitan Region |
| | of Nuremberg |
| SPECTARIS: | German Hightech Industry Association |
| VDMA: | The Mechanical Engineering Industry |
| | Association |

1A CUE Consulting & Engineering GmbH, Schöngeising (FMP, MV) 1stQ Deutschland GmbH, Mannheim (BVMed) 2be_die Markenmacher GmbH, Nürnberg (MV) 2E mechatronic GmbH & Co. KG, Kirchheim unter Teck (MM) 2k Produktentwicklung Koentopp + Kargl GbR, München (FMP) 2W Technische Informations GmbH & Co. KG, München (VDMA) 3C-Carbon Composite Company GmbH, Landsberg am Lech (FMP) 3D-MODEL GmbH, Bad Waldsee (MM) 3D-Shape GmbH, Erlangen (FMP) 3M Deutschland GmbH, Neuss (BVMed) 3T analytik GmbH & Co. KG, Tuttlingen (MTSW)

А

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В

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С

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D

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Е

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F

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G

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