Machinery & Equipment Industry

Market Leadership Powered by German Engineering

Germany’s Machinery and Equipment (M&E) sector is the world’s leading supplier of machinery with 16 percent share of global trade. German manufacturers are also the world leaders in 19 out of 31 M&E sectors in global comparison.

The M&E sector is the second largest and most innovative industry sector in Germany. In 2018, mechanical and plant engineering was again the most important driver of German industry growth. Nominal turnover increased to EUR 226 billion – a new record that contributed considerably to the upturn in the German economy.

German M&E industry strength is driven by a combination of Germany’s proven engineering tradition, its position as a technology development leader, and a highly diversified industrial base. The country retains its role as a globally competitive and flexible R&D test bed thanks to M&E innovative strength.

The fourth industrial revolution is already underway thanks to the country’s ambitions Industrie 4.0 initiative. This landmark project is ushering in a new age of decentralized production that is transforming industry. Automation technology developments will consolidate Germany’s position as the lead provider and market for virtual systems and highly developed production systems.

Machinery and equipment is one of the technological motors that drives Germany as a high-tech nation and combines all of the key future technologies (including electronics, robotics, materials, and software). The domestic M&E sector is dominated by small and medium-sized enterprises from the thriving Mittelstand economy. These companies produce customized products and small production series to meet international manufacturing industry demand.

Impressive M&E industry and market data provide a timely reminder that the “Made in Germany” label still stands for the highest quality products and services in the world.

Germany’s M&E companies demonstrate their impressive position as leaders in “Integrated Industry -Industrial Intelligence” at the Hannover Messe 2019.

The Robots are Coming – Innovative Solutions for Covid-19 Crisis

Germany’s Robotics & Automation Industry is rightly considered a digitalization and automation pacemaker. This reputation is proving its worth during the coronavirus crisis.

Automated lab testing

German robotics companies are increasingly shifting production from fully automated production plants for the auto industry to automated manufacture of protective masks. The EUR 15 billion industry is stepping in to provide automated laboratory testing using robots in order to speed up the otherwise time-consuming blood testing process.

According to the German Mechanical Engineering Industry Association (VDMA), lab robots provide an invaluable alternative to manual test execution, particularly with lab capacities being stretched to their limits and where test installations cannot be converted flexibly enough for test variants and new, modified test procedures.

Hospital disinfection

Robots are also being used to safeguard strict hygiene requirements. Specialized robots are helping disinfect hospitals by emitting concentrated UV-C light to eliminate bacteria and other harmful microorganisms. This allows medical facil-
Ities to guarantee a 99.9 percent disinfection rate, thereby reducing the potential risk of Covid-19 infection to patients, hospital staff and their immediate families.

**Social distancing**

Strict social distancing requirements have likewise led to an increase in the use of service robots to entertain nursing home residents currently facing a strict visiting ban. Service robots are also being put to good use in German supermarkets to inform customers on Covid-19 behavioral rules when shopping.

**AI-ROBOTICS vs COVID-19 Initiative**

The European Commission has launched the AI-ROBOTICS vs COVID-19 initiative to ideas about deployable artificial intelligence (AI) and robotics solutions as well as information on other initiatives that could help face the ongoing COVID-19 crisis. The aim is to create a unique solutions and initiatives repository that is easily accessible to all citizens, stakeholders and policymakers as part of a common European response to the Covid-19 outbreak.

**DIH-HERO emergency call**

The European Commission is also currently analyzing funding opportunities available to support AI-ROBOTICS vs COVID-19 solutions and initiatives. The Horizon 2020-funded DIGITAL INNOVATION HUBS in HEALTHCARE ROBOTICS (DIH-HERO) project has issued an emergency call for late-stage robotic technologies and solutions that can be deployed in the healthcare sector quickly to help healthcare professionals meet current clinical demand and need.

The deadline for the technology experiment transfer call has been extended until June 15, 2020. The call is intended to provide financial support for eligible pan-European cross-border collaboration projects across five application areas of diagnostic robotics, interventional robotics, rehabilitation robotics, robotics supporting patients, and robotics supporting healthcare professionals.

As well as promoting technology transfer from non-healthcare actors, DIH-HERO seeks to overcome implementation hurdles that might otherwise hinder new medical technology business and to create new value chain links. As the current coronavirus crisis is showing, real and very significant potential exists for robot application in the healthcare sector and rehabilitation robotics industry.

DIH-HERO is an independent platform that connects Digital Innovation Hubs across Europe to create a sustaining network for actors active in the healthcare robotics sector. The project consortium consists of 17 core partners spread across 11 pan-European countries.

**Industry & Market Numbers**

**Leading Industry**

- Number 1 domestic industry sector by level and degree of innovation
- Number 2 domestic industry by turnover – generating EUR 226 billion in 2017 alone
- 6,500 companies and more than 1 million workers along the value chain
- 3.5 % value added share of German economy gross value added
MACHINERY & EQUIPMENT INDUSTRY

Global Export Leader
- 16% share of global machinery trade making it world’s leading supplier
- 79% of machinery turnover generated from international exports
- German manufacturers are the world market leaders in 19 out of 31 M&E sectors

Innovation
- EUR 6 billion R&D spending (2015-2017) – upward trajectory forecast to continue
- EUR 7 billion – German market for Industrie 4.0 solutions (2018 forecast turnover)

Foreign Direct Investment
- Number 1 FDI destination in Europe – around 700 M&E FDI projects (2012 to 2017)

Source: VDMA 2018, FDI markets 2019, GTA FDI Competence Center 2019

Latest Publication

Industry Overview: The Machinery & Equipment Industry in Germany
Machinery & Equipment is the largest and most innovative industry sector in Germany, and so one of major strategic importance.
The machinery and equipment (M&E) sector is the most innovative and second largest industry sector in Germany.

Germany’s robotics and automation (R&A) industry has enjoyed unprecedented success over the last decade.

Testimonials for Germany

Delta Shelving Systems GmbH - Stephen Eddowes, Managing Director
"My heart chose Germany. The German culture of quality and excellence is what "Made in Germany" is all about. In terms of surmounting relocation hurdles, Germany Trade & Invest has been absolutely first-class – 10 out of 10!" (2014)

Redpack Maschinen GmbH - Jeremy and Stuart Briston, Managing Directors

"As Europe's largest consumer market at the heart of Europe, Germany offered an exciting place for our family run business to open a subsidiary. We found out that our quality and bespoke machines are well suited to the German marketplace where reliability, durability, low maintenance and safety standards are of paramount importance." (2014)

GA Pack GmbH - Hong Gang, Chairman of the Board

"Germany is traditionally known for improving on what is already good. We greatly value that German employees – much like the entire society – place an emphasis on quality, both in the result and in the process." (2011)
Kingsbury Inc. – William R. Strecker, President and CEO

“As Kingsbury (USA) begins its second century of innovation, Germany represents a natural extension for growth throughout the European Union. Many of our OEM customers have home-base operations in Germany, and the technological skills of the German work force is well suited to our business.” (2014)

MetoKote Corporation - DeWayne Pinkstaff, President and CEO

“The opening of our new Mannheim facility is another step in achieving our global mission of providing custom coating solutions to our valued customers. We are excited to be centrally located in the heart of Europe and eager to serve both our strategic partners and acquire new customers in the region.” (2010)

Market | Personnel | R&D
MARKET - Exceptionally high domestic demand results from Germany’s strong industrial structure. The four biggest producing industries (chemicals, electronics, automotive, and food & beverages) are also the four most important client sectors for the M&E industry. In the region of 11 thousand companies – with a combined workforce of around 2.8 million – are active in these four sectors, generating combined turnover of around EUR 900 billion in 2017.

PERSONNEL - Germany’s universities and universities of applied sciences produce some of the most highly qualified employees in the business. Almost 30% of all university and college graduates have an engineering or applied sciences degree. Germany’s unique dual education system – combining classroom and on-the-job training – is specifically geared to meet industry needs, making it attractive to investors and a model for international success.

R&D - Manufacturers located in Germany work in close partnership with a network of around 100 mechanical engineering university faculties and numerous internationally recognized research institutes.

INCENTIVES - Germany offers a broad platform of incentives for all investors - regardless of whether they are from Germany or otherwise. There is a large selection of programs designed to support a wide variety of business activities at different stages of the investment process. Support ranges from cash incentives for the reimbursement of direct investment costs to incentives for labor as well as research and development. Within the new High-Tech Strategy, the government offers special support for technology partnerships and provides R&D grants and loans. Germany’s INDUSTRIE 4.0 Future Project is one of the declared priorities in the new High-Tech Strategy. The Federal Government is providing comprehensive support to establish Germany as a lead market and provider of key technologies and as a future center for production.

PHYSICAL INFRASTRUCTURE - We offer an extensive and comprehensive logistics infrastructure that integrates state-of-the-art transportation networks with the most modern telematics, IT, and telecommunications systems.

STABLE INVESTMENT ENVIRONMENT - Social, economic, and political stability provide a solid base for your corporate projects. Our judiciary and civil services are highly professional. Contractual agreements are secure and intellectual property is strictly protected in Germany.

Related Links

- AIA - Institute of Applied Computer Science - University of Karlsruhe
- BDI - Federation of German Industries
MACHINERY & EQUIPMENT INDUSTRY

- DFG - German Research Foundation
- Fraunhofer Society
- German Mechanical Engineers Learn from the Crisis and Pursue Proactive Strategies for the Future
- Helmholtz Association
- IGOS - Institute for Galvanic & Surface Technology (in German only)
- Institute for Robotics & Mechatronics [ ▶
- Institute for Robotics & Process Control - Technical University of Braunschweig [ ▶
- Institute for Robotics - University of Hannover
- IPA - Fraunhofer Institute for Manufacturing Engineering & Automation [ ▶
- IRF - Robotics Research Institute - University of Dortmund
- Leibniz Association [ ▶
- Make it in Germany [ ▶
- Max Planck Society
- SME Robot Initiative
- VDMA - German Engineering Federation

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