



ASYS
LIFE SCIENCE

[X] MODULE X



Pharma | Diagnostics | Medical
Technology | Biotechnology

Complete solutions from a single source

For many years, ASYS has been solving assembly tasks for customers in a wide range of industries such as automotive, consumer goods or industrial products. In the INVENTUS business unit, we have combined more than 2000 automation processes and technologies to create customer-specific solutions. We have

developed a new assembly platform especially for the Life Science industries and tailored it specifically to the requirements of the regulated industry. In doing so, we use modules from all business areas. This helps us to provide a process-safe and GxP-compliant solution in a short time. We realize complete assembly lines and plants from one source.



- ✓ **Over 25 years automation**
Since 1992, customers worldwide have trusted our solutions
- ✓ **Turnkey solutions**
We develop and realize your manufacturing solution
- ✓ **Everything from one source**
Complete assembly lines and plants from a single source



MODULE X Assembly platform

The assembly platform, was developed in close cooperation with customers from the medical technology sector and meets the GxP regulations for production in the environment of both 21 CFR Part 820 and ISO 13485. Through the deliberate modular design, the highly flexible platform, allows customized automation solutions, in short project durations. The frames are pre-configured in lengths of 1.5 / 2.0 and 2.5 meters and can be function as individual cells or as part of complete assembly lines. The process components (robotics, testers, laser applications, handling, etc.) are mounted on the base plates and aligned with the highest precision: accuracies of $< 10\mu\text{m}$ @ 6 sigma and greater can be achieved.

Assembly Processes



Laser Marking



Labeling



Testing



Depaneling



Tray Load/Unload



Press-Fit



Feeder Solutions



Screwing



Tray Handling



Riveting



Plasma Cleaning



Dispensing/Potting



Resistance Welding



Transport



Laser Welding



Laser Cleaning



Laser Depaneling



Laser Cutting



Laser Reflow Soldering



Laminar or turbulent airflow
for cleanroom classes up to ISO 5

LAMINO-Flowbox

Additional requirements for defined, segregated production conditions with low humidity of $< 10\%$ rH or controlled temperature conditions are generated with the optional LAMINO-Flowbox. Complemented by cooling or HEPA filter systems, we ensure that energy is only used where the product requires it. We provide validated environmental conditions at low supply media costs.



Controllable microenvironments
in the process chamber



Linear goods carrier transport



Compact and ergonomic loading with tray feeders for high autonomy



Product Transport

Low-particle product transport is carried out on work-piece carriers by belts or magnetic mover systems. As such, we achieve up to cleanroom class 5 according to DIN EN ISO 14644-1.

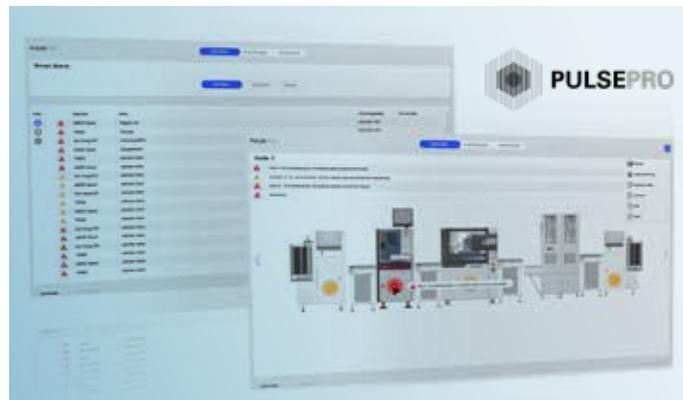


Easy Work

The choice of materials for the modules, the easy-to-clean design and the good accessibility ensure easy working. Monitoring and setup from the front, material loading from the rear. Clean separation of material flows and operating area from technology, makes it easy for operators and technical staff.



Intuitive GUI: SIMPLEX



Software solutions for the Smart Factory



Intuitive Multi-Touch User Interface

The intuitive user interface SIMPLEX, optionally 21 CFR Part 11 compliant, is a unique human-machine interface (HMI) for controlling and monitoring production machines. Complex input tasks can be managed intuitively on large touch or multi-touch displays.



PULSE PRO – Smart Alerts

The smart assistance system for human-machine communication supports the operator in the production. Walking distances are reduced and line downtimes are effectively avoided thanks to early notifications.



Precise kinematics: Closed linear axes with accuracy of 10 μm @ 6 sigma

Assembly In Vitro Diagnostics

The assembly of hand-sized PCR cartridges for fast diagnostics at the Point-of-Care (POC) has been a trend not only since COVID-19. With the assembly line, realized in this project, approximately 20 individual components are assembled and laser-welded into a functional cartridge in a cycle

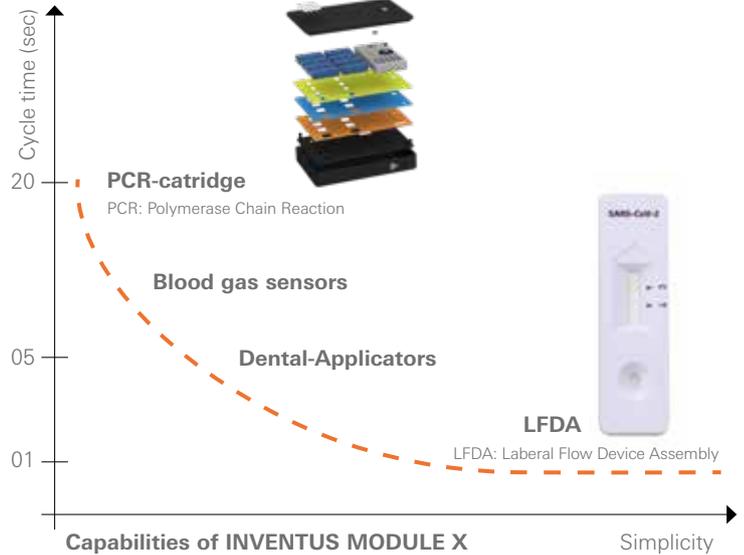
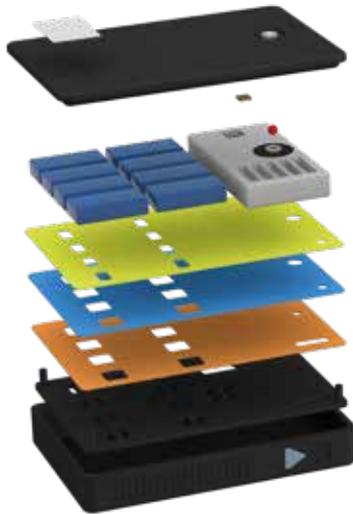
time of <20 1/sec. Finally it is packed in an aluminium pouch. Precision, repeatability and traceability in the entire process is a must in this project. With this GxP-compliant Life Science Assembly line, we ensure that the cartridges are produced quickly, safely and economically.

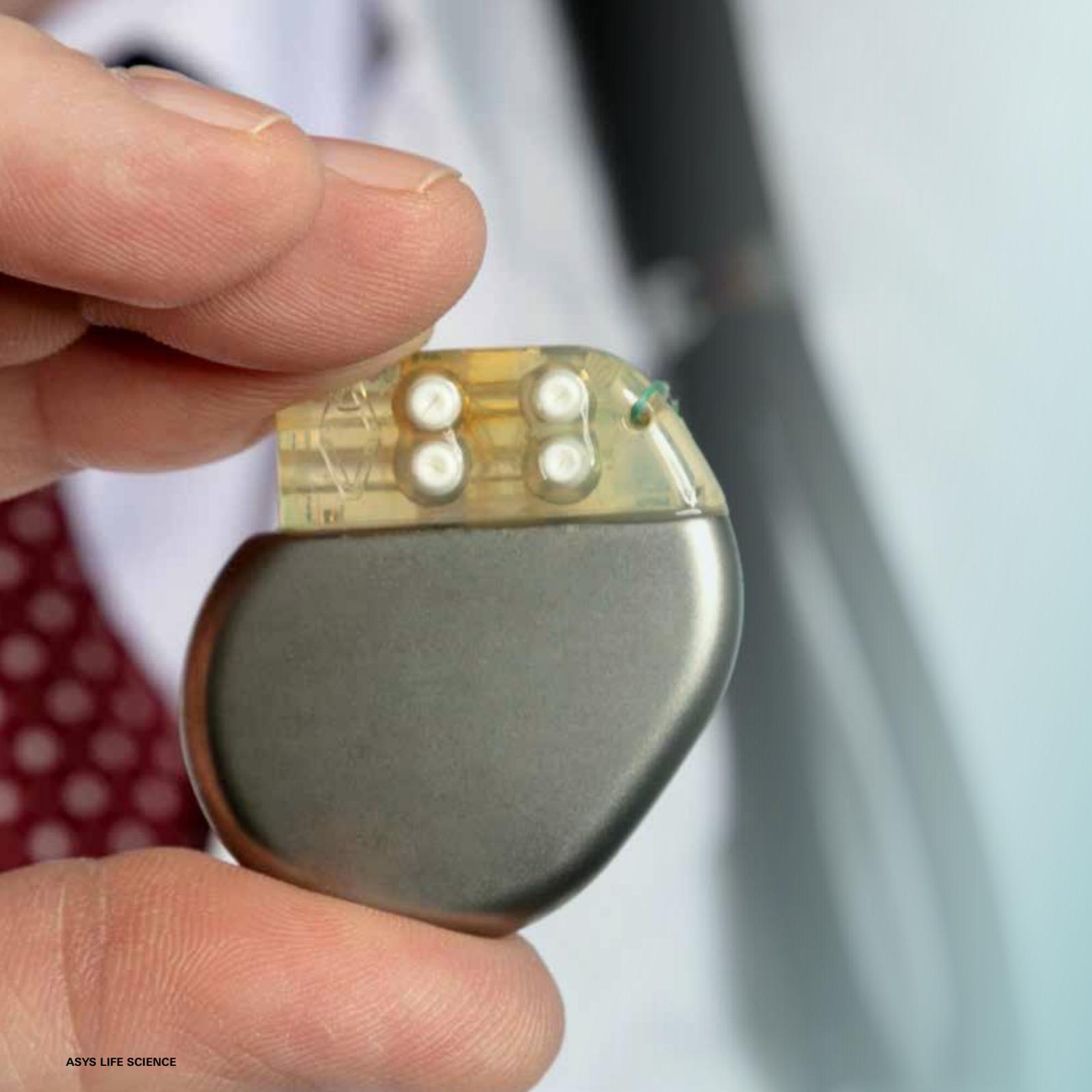


Process integration: Laser Marking



GxP compliant design: for easy cleaning







Assembly of Pacemakers

The automation of the production of pacemakers is subject to stringent requirements. The highest quality and reliability need to be achieved in medical technology products.

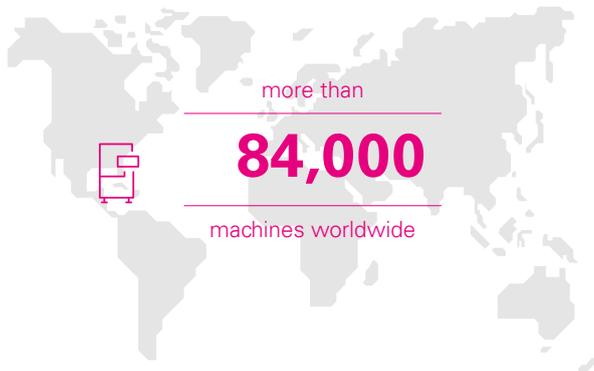
This project relies on our laser expertise for welding. Also the subsequent marking is realized by means of ASYS laser technology. The manifold portfolio of our own solutions for e.g. transport, handling & buffering can also be supplemented by customer specific

components from third parties. We ensure perfect interaction of all process steps. All the way to autonomous loading and unloading by our AIVs. With us, you are ready for the SMART Factory.



ASYS Group – Facts & Figures

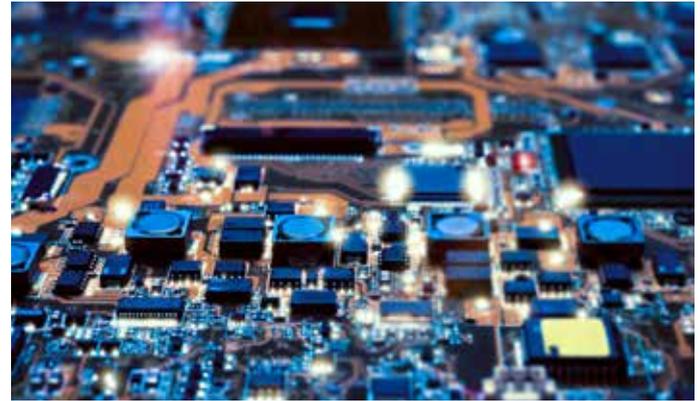
The ASYS Group is a global technology company and leading supplier of machines for the electronic, life science and energy industry. The ASYS brand guarantees the same high standards of quality and processing standards all over the world. The corporate headquarters in Dornstadt (near Ulm) coordinates activities across five continents and guarantees highest standards in quality and service.



The success of the ASYS Group is based on the qualification and personal commitment of more than 1,200 employees. Inspired and dedicated people are the key to developing and providing first-class products.

Business Areas

Business Unit **Electronics**



Strong and Fast Growing for Over 25 Years

The launch of market leading innovations has significantly contributed to the success and growth of the company. Over the past two decades ASYS has expanded steadily and has attained a leading position with new products and processes.

Business Unit
Life Science



Business Unit
Energy



**Our Success Factor:
Dedicated People**

ASYS Group has installed more than 84,000 systems worldwide. ASYS invests continuously in state-of-the-art production processes at its worldwide sites. The production space at the headquarters in Dornstadt is constantly increasing and currently amounts to more than 27,000sqm.

**“German Engineering”
and Manufacturing**

ASYS products exemplify the prestigious “Made in Germany” trademark: precise, high quality systems and machines that are intuitive to use and offer best functionality.



German Quality Across Five Continents

Worldwide Sales and Service Centers

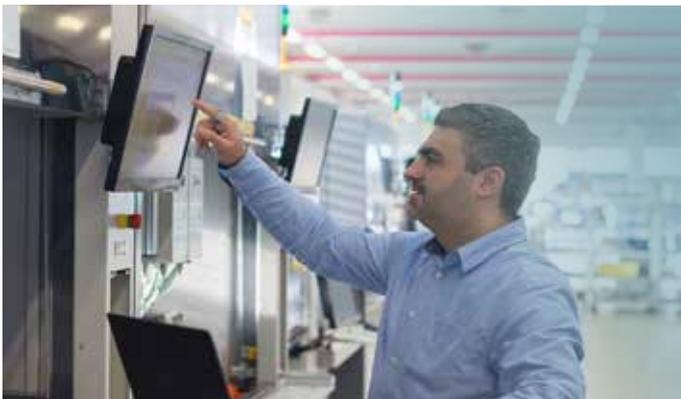
The Group's business activities in more than 40 countries are controlled from the company's headquarters in Dornstadt near Ulm, Germany. A broad global network with local service centers in Asia and the Americas ensures a customer-focused service support. Worldwide service teams guarantee best response and spare parts availability.



24 Hour Availability for Service and Support

Service has a high priority at ASYS Group. More than 80 service engineers worldwide are at the service around the clock. Customer satisfaction is the ultimate goal. To achieve this, ASYS installed a systematic feature to track service calls.

- ✓ 24 / 7 / 365 support, worldwide
- ✓ Teams consist of experienced specialists
- ✓ Experts for each product segment
- ✓ Preventive Maintenance
- ✓ Service Agreements
- ✓ Installation of new systems
- ✓ Maintenance Seminars
- ✓ On-site training upon installation



Qualification Services

- ✓ Design Documents (DS, HDS, SDS)
- ✓ IQ, OQ-Documents
- ✓ Traceability Matrix, Qualification Plan
- ✓ GMP Risk Analysis workshops and documents
- ✓ Qualification Support onsite

GxP-compliant Project Management at ASYS Life Science





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