Robotics Engineering, Products, Services in USA

The Quality Connection

LEONI
The LEONI Group
Concentrated competence in cables and systems

LEONI is a leading supplier of cable systems and related services for the automotive industry and many other industrial sectors.

Our group of companies employs over 76,000 people in 32 countries. Entrepreneurial insight, first-class quality and the power to innovate have secured us our position as one of Europe’s leading cable manufacturers. LEONI not only develops and manufactures a portfolio of technically sophisticated products that extends from wire and optical fiber to cables, cable systems and services, but also offers its customers a range of bespoke services.

Our full range of products and services also includes strands, standardised cables, hybrid/optical fiber and special cables, cable harnesses and wiring system components, as well as turnkey, assembled systems for applications in various industrial markets.

Your markets – our strength.
The breadth of LEONI’s spectrum of products and services is matched by the markets and segments we supply. We focus our activities on customers in the sectors Automotive & Commercial Vehicles, Industrial Solutions, Electrical Appliances and Conductors & Copper Solutions.

In the Industrial Solutions market, we are one of Europe’s leading providers. Acting as both a cable manufacturer and a dedicated solution provider, we work in fields as diverse as telecommunications systems, fiber optic cable, data communications, manufacturing projects, solar and wind power, energy and infrastructure, building services, bespoke product and robotics solutions, healthcare, traffic systems and automation technologies. Customers worldwide benefit from our innovative, high-quality products that are both reliable and long-lasting. LEONI – we create the best connection for your future.

For further information, please visit www.leoni.com
Robotics expertise
Worldwide

LEONI Industrial Solutions – centres of competence

Germany
LEONI elocab GmbH
LEONI protec cable systems GmbH

France
LEONI CIA Cable Systems S.A.S.

Great Britain
LEONI Tailor-Made Cable UK Ltd.

Spain
LEONI Systems Spain, S.L.

Czech Republic
neumatic cz, s.r.o.

Canada
LEONI Elocab Ltd.

USA
LEONI Engineering Products & Services, Inc.

India
LEONI Cable Solutions (India) Private Limited

China
LEONI Cable (China) Co., Ltd.

Japan
LEONI Wire & Cable Solutions Japan K.K.

Singapore
LEONI (SEA) Pte. Ltd.

South Korea
LEONI Wiring Systems Korea, Inc.

You can find the contact details of our international partners on www.leoni-americas.com
Industrial robots can work 24/7/365, but robots need a PLC brain to control them, software program to guide them, hoses and dress packs to feed them, sensors to calibrate them, and knowledgeable maintenance technicians to keep them running. That’s where LEONI’s Robotic Solutions group can help your robot realize its full potential.

Offering the highest quality robotic dress packs, programming, machine vision, maintenance and training in the Americas, LEONI Robotic Solutions makes it easy to get the most out of robots used in industries from automotive to aerospace, and packaging.

The world’s best robotic hoses and cables
As the world’s largest manufacturer of specialty hoses and cables, LEONI’s Robotic Solutions is committed to using only the best components while preparing your robot for industrial operation. Cables used for robots have to meet the greatest requirements in terms of mechanical, chemical and thermal properties to withstand rapid acceleration and deceleration; and the tensile, compressive and torsion stresses caused by millions of bending cycles.

LSH 3 robot dress pack maximizes uptime
LEONI’s LSH 3 dress pack is the toughest, smartest and most compact guided robotic dresspack for routing robot cabling and tooling lines available in the industry today. Don’t be fooled by imitators, LEONI’s LSH 3 uses only the most rugged materials, manufactured to highest quality requirements, and installed and tested on each and every robot we outfit.
From stripped-down to fully integration-ready robots, LEONI Robot Solutions provides dress packs to the world’s largest manufacturers because they know our service and follow up are second to none.

We conceive and will provide you with complete function packs, e.g. for spot welding, inert gas welding, measuring, and handling. Should you already have corresponding robots or other hardware components, we will incorporate these in the work we offer.

Our integration-ready robots come ready for installation with tools such as weld controllers, dense packs, electrical junction boxes, and more. LEONI Robot Solutions configures, sets up, and tests the gun, software, and calibration position sensors. We can also design complete process-ready robots, program and integrate them into existing production equipment.
advintec TCP
1-step robot tool calculation, calibration and protection

The advintec TCP is a high-precision tool calibration system that automatically measures tool position in 6 dimensions and automatically adjusts the corresponding robot control program to ensure the tool is always in the correct position.

Designed for rotation-symmetric tools, such as weld heads in arc, spot, and stud welding applications, the TCP measures the tool’s position electronically across in three dimensions, including rotation around each axis. This automated tool position-detection system prevents customers from having rejects or being forced to rework due to tool wear, inadvertent contact with nearby objects and tool changeover, thereby ensuring 100 percent production quality and reducing costs.

Advantages at a glance
- No manual adjustments to programs or associated downtime
- Hassle-free production-line integration
- High process reliability
- No additional PC’s required
- Logging of calibration-data
- Data evaluation possible at any time

TCP software sealant nozzle (hook nozzle)  TCP software stud welding  TCP software milling / drilling
TCP software tandem torch  TCP software cutting tools / blades  TCP software gripper / fixtures
advintec 6D laser measurement calibrates grippers, fixtures and locates parts in robotic applications inline and thereby extends the range of options for machine perception. It can also be used as crash recovery system in order to re-calibrate tools and fixtures after collisions. During gripper measurement it ensures the precise calibration of grippers or gripped parts for precision handling, e.g. for power-train applications, such as engine and transmission parts. Precisions laser sensors secure that changes in the gripper or in the part location are detected at an early stage and are corrected inline.

Due to the modular set-up the calibration system can be adapted to the corresponding application and consists of advintec controller, sensor interface, sensors (laser point, laser line or infrared sensor etc.) and cable set. As a standard we use laser triangulation sensors. The system is expandable, i.e. multi sensor capable.

Advantages at a glance
- High precision 6D laser measurement without technical aids oder reference parts
- Corrections of processing position take place directly and automatically within ongoing production process
- Eliminates manual program corrections
- Scalability and standardisation
- Simple to integrate and use
- Simple commissioning via supplied robot program
- High tolerance to ambient light

Measurement time starting from 3 sec. (depending on configuration and application)
- Increase of plant availability and quality assurance of products
- Cost savings compared to conventional mechanical systems

The laser detects features such as curves or edges.
As part of an integration-ready robot or as a separate service, our experienced technicians can provide the robot and PLC programming you need for any work cell installation from assembly to welding. As a trusted outfitter and dress pack supplier for all the major robot lines, including KUKA, FANUC, ABB, Motoman, Kawasaki, and Reis, our technicians can optimize your cycle times. And our pay-for-performance contracts take the risk out of outsourcing your robot programming.

LEONI Robotic Solutions is the right partner for your robot programming as well as optimization needs. We are very well versed in the programming of common robot types. The following applications belong to our areas of expertise:

- Assembly
- Deburring
- Gluing
- Handling
- Integration of measuring and inspection systems
- MIG/MAG
- Riveting/clinching
- Spot welding

Robot and PLC Programming
Programming services for robotics, controls, engineering and production support
LEONI Engineering Products & Services machine vision solutions group is the first machine vision integrator to be named by AIA, the North American machine vision trade association, as a Certified Systems Integrator (CSI). We also have more advanced-level Certified Vision Professionals (CVP) than any other machine vision integrator.

Using our in-house machine vision development lab and highly qualified engineering team, LEONI machine vision solutions regularly solves the most difficult machine vision inspection, assembly, and verification applications in the automotive, aerospace, food and beverage, consumer packaged goods (CPG), and general manufacturing markets.

Visit our applications page to see how LEONI machine vision solutions has solved some of the toughest automation challenges with machine vision solutions, including 2D/3D robot guidance, auto ID barcode and optical character recognition (OCR) track and trace part identification, automotive brake inspection, surface porosity inspection, color matching, high-speed inspection tire and wheel inspection, and vision training.

How do we do it? LEONI machine vision solutions engineers start with in-depth front-end analysis and an engineering feasibility study to build a well-informed foundation for the vision solution design. Then we design, commission, document, and train your operators on your custom solution using the best machine vision hardware and software for your application – not our partner’s software or a preferred hardware provider.

LEONI machine vision standardizes new Wheel and Tire Validation System

The Wheel & Tire Validation System prevents mismatched wheel/tire combinations, simplifies changeover and new-model training, and provides 3D and 2D surface analysis for key features. Based on years of wheel and tire inspection installations at multiple customer sites across North America, this turnkey system can perform multiple inspection tasks for both wheel and tire, including wheel style, diameter, color, and center cap placement, as well as tire tread pattern (2D or 3D), sidewall, diameter, tire width/height, D.O.T., and text checks. The system also can check balance ID mark alignment position; the orientation of multiple features, including the wheel, tire, TPMS, logo, and others; the color, style, and orientation of the center cap; and gloss level, whether high, medium, or low-gloss finish.

The system simplifies changeover by storing more than 100 wheel models and combinations. Additionally, it is compatible with all industrial Ethernet protocols and comes with full documentation and training.
Automation Systems Training

Effective, hands-on learning methods, with easy to understand, well-written courseware

Your most valuable resources are your employees. LEONI automation systems training’s approach to training is designed to make sure your employees get the knowledge they need in the least amount of time to keep productivity high.

We train systems, not products

Unlike an OEM that supplies one part of your automated production line, LEONI automation systems training takes an unbiased systems approach to give your employees the knowledge they need to be successful. Our customers’ needs come first, which is why we only develop custom training programs, delivered at your site or at our training facility.

LEONI automation systems training builds your custom training curriculum and materials based on a front-end analysis that looks at your students (engineers, electricians, operators, maintenance technicians, skilled-trades), your automation equipment (PLCs, robots, presses, variable frequency drives (VFD), machine controls, HMIs, and safety systems), your applications and processes (robotic welding, sealing material handling, press operation, material handling, etc.), and the specific needs of your industry (automotive packaging, casting, forging, heavy equipment, aerospace, wastewater treatment, general manufacturing, etc.). We follow up classroom training with hands-on lab exercises, testing, and task verification.
Custom curriculums at your place, or ours

Our training service offerings include training needs analysis, custom curriculum design and development, on-site training, open enrollment training, train the trainer program (T3), training outsourcing, training equipment sales and service training, and immersive training at LEONI’s training center.

Applications
- Material handling
- Spot and arc welding
- Advanced material joining technologies (flow-drill screw, riveting, clinching)
- Dispense
- Waterjet cutting
- Laser applications
- Thermal plasma spray coating
- Drilling
- Polishing
- Grinding
- Machine vision
- Stamping and press systems

Industries served
- Automotive
- Aerospace
- Metal and plastic processing, stamping, forging, fabrication, molding
- Municipal water systems (water and wastewater):
  CEC certified and accredited in Michigan and Wisconsin
- Paper processing
- Food, beverage, and packaging industry
- General and heavy manufacturing

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