

A man in a dark suit is seen from behind, holding a mobile phone to his ear. He stands in front of a large, glowing blue globe that shows the continents. Below the globe, a city skyline is visible at night. The scene is illuminated with blue light, and there are vertical light streaks on the sides. The overall mood is futuristic and technological.

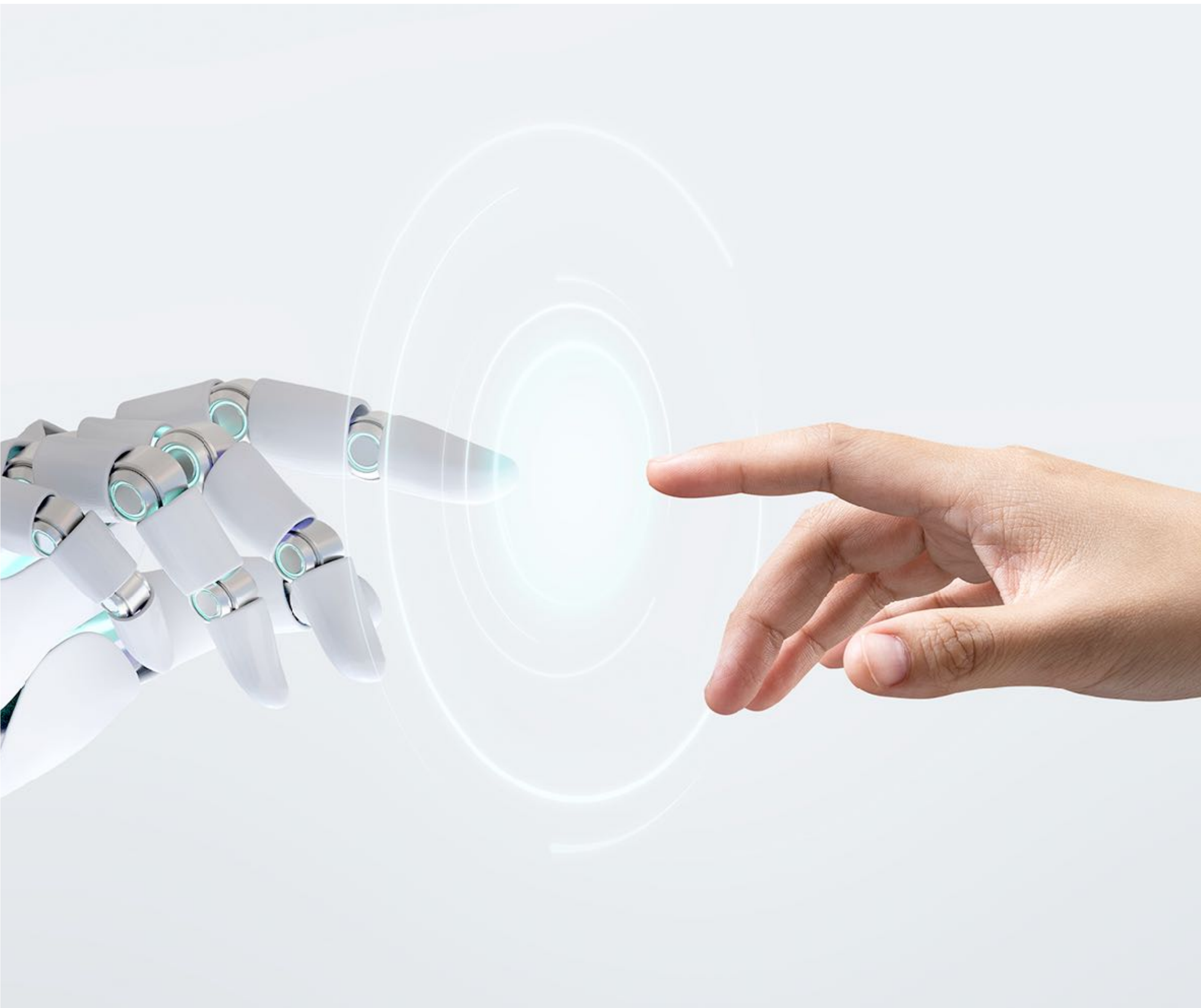
Lion Smart Equipment Solution

ENGINEERING THE HUMAN FUTURE



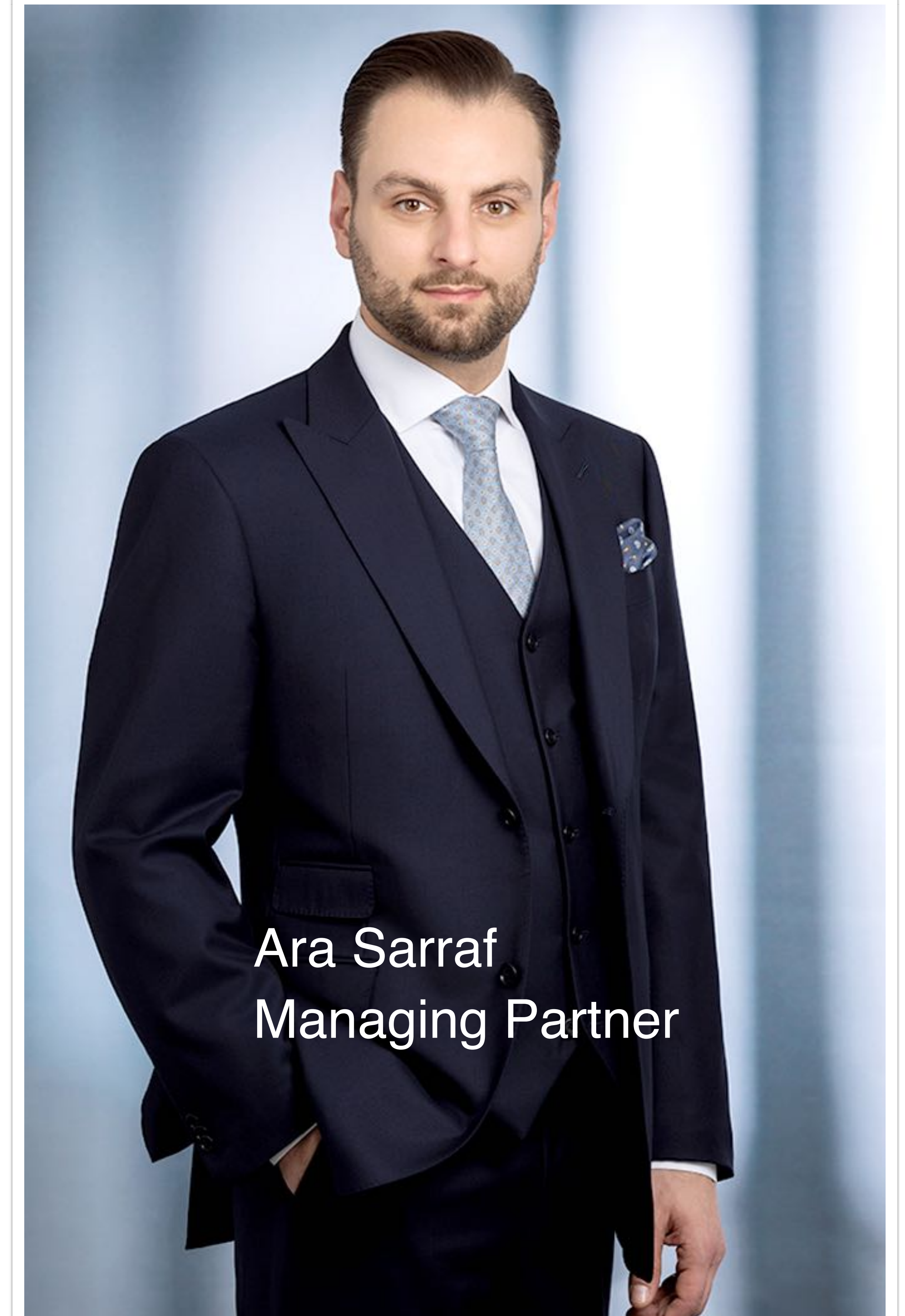
LiON SMART EQUIPMENT SOLUTION

ENGINEERING THE HUMAN FUTURE



- ✓ Tailored Assembly Line Configurations
- ✓ Intelligent Testing Systems & Equipment
- ✓ Vision Inspection Solutions
- ✓ Custom Machine for Automotive Wiring
- ✓ Industrial Software Development
- ✓ Engineering & Industrial Services
- ✓ Artificial Intelligence & Big Data

Lion Smart Equipment Solution is your technology partner for customized automation solutions, intelligent testing systems, and future-proof production platforms.



Ara Sarraf
Managing Partner





LION SMART EQUIPMENT SOLUTION

<https://lion-se-solution.de>

Our Strength: A Competent Team Driving Your Industrial Innovation

A multidisciplinary team delivering excellence at every stage:

- Project Managers with international expertise (PMI, Agile) – tightly managing timelines, risks, quality, and budgets.
- Experienced Electronics & Software Engineers, combining deep technical knowledge with agile development to deliver scalable, reliable embedded systems.
- Mechanical Engineers and Designers who turn specifications into robust, cost-optimized, production-ready solutions.

A robust infrastructure to accelerate your success:

- In-house CNC machining center equipped with advanced manufacturing tools – enabling rapid iteration, tight tolerances, and full IP control.
- Three-shift assembly operations – ensuring near-continuous production capacity for tight deadlines and scalable volume.
- Phase-gated project structure – from specification and concept to prototyping, testing, and final delivery: goal-driven, efficient, and risk-conscious.



WHAT SETS US APART



Integrated Collaboration:

Seamless synergy between PMs, hardware, software, and mechanical teams — ensuring coherent, optimized solutions without silos.



Agile & Transparent Processes:

Regular project reviews, milestone-based deliverables, and proactive risk management foster trust and adaptability.



Technical Depth & Industrial Insight:

Our engineers bring not only theoretical knowledge but practical industrial experience — from feasibility studies to production ramp-up.



Operational Continuity:

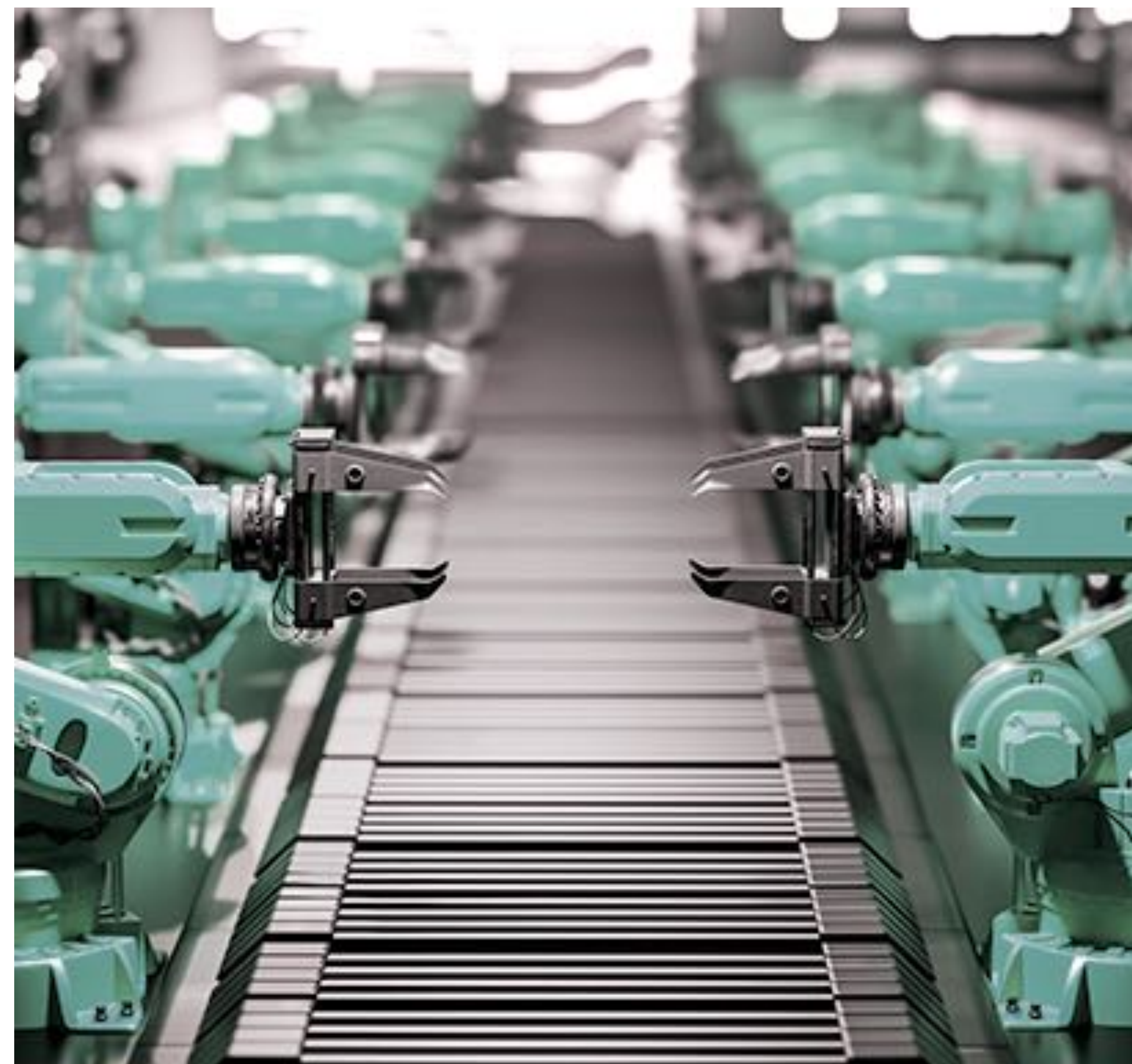
3-shift operations ensure fast-paced progress, meeting tight deadlines without compromising quality.



Customer-Centric Delivery:

We are committed to exceeding expectations with documented outputs for every phase — empowering you with traceability, compliance, and readiness for future growth.





TAILORED ASSEMBLY LINE CONFIGURATIONS

Whether you are launching a new product or optimizing an existing line, we deliver assembly systems adapted to your production needs...





Manual Assembly Line

Supervised workstations with ergonomic setups and operator guidance.
Ideal for small to mid-volume production.

Example: Manual wiring assembly with visual inspection stations.

Semi-Automated Lines

Combine human expertise with automation tools like screwdrivers, press stations, or smart fixtures.

Example: Automated station performs torque-controlled screwing.

Fully-Automated Lines

High-speed lines with complete automation for demanding productivity and quality standards.

Example: Automated assembly of electronic modules including pick & place, soldering, and final test.

Custom Handling & Conveyors

Tailor-made conveyors, pallet systems, or rotary tables to ensure smooth part transfer and line synchronization.

Example: Modular conveyor system with buffer zones and accumulation logic.

Robotic Integration

We integrate 6-axis and SCARA robots for precise assembly, handling, and inspection.

Example: Robotic arm performing pick-and-place of components with integrated vision system for part orientation.

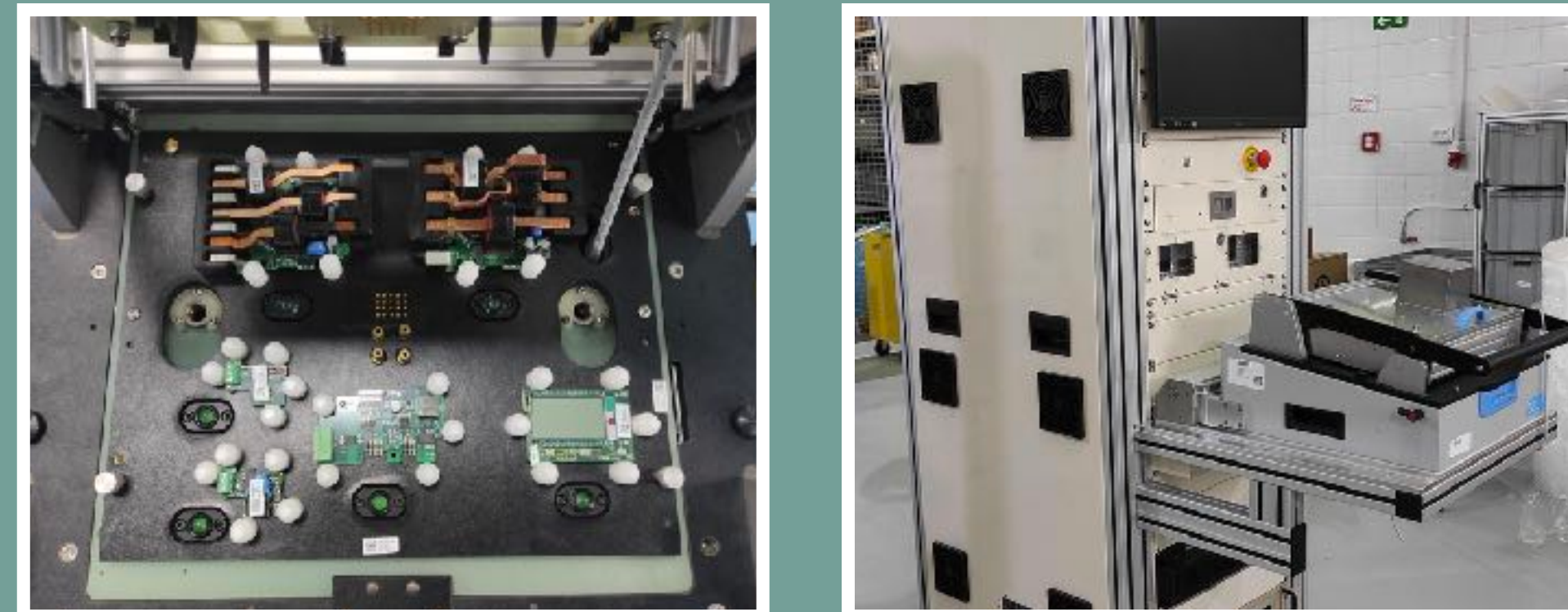




INTELLIGENT TESTING SYSTEMS & EQUIPMENT

We develop customized testing systems and equipment that ensure the quality, functionality, and reliability of your products throughout the entire manufacturing process.





Turntable Tester

Rotary platform integrating multiple test stations for sequential testing with high throughput.

Example: Functional and vision tests performed at different rotary stations for a sensor module.

Embedded Fixture Tester

Compact and ergonomic fixtures embedded into workbenches or automated lines, adapted to your product's shape and interfaces.

Example: Pneumatic fixture with integrated electrical contacts for end-of-line testing of a PCB.

Custom Test Benches

Standalone or inline benches for dedicated tests based on product requirements.

Includes:

 **RF Tests** (e.g., antenna performance, signal strength)

 **Functional Tests** (e.g., verifying logic functions, I/O, displays)

 **Measurement Tests** (e.g., voltage, current, resistance, pressure, flow)

Example: Functional test bench for IoT device with RF signal validation and current consumption profiling.

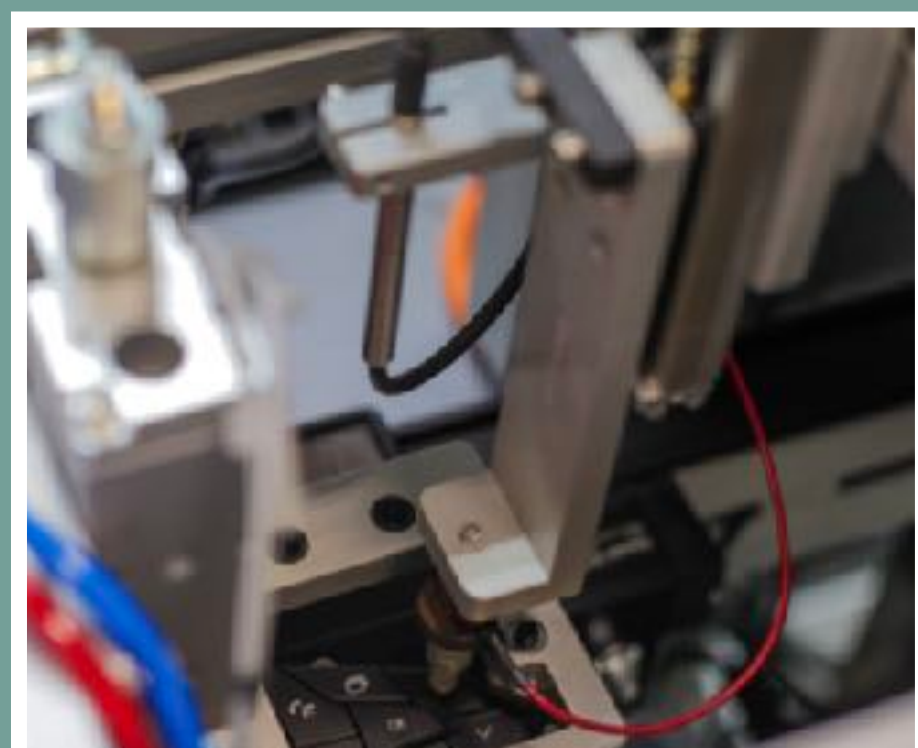
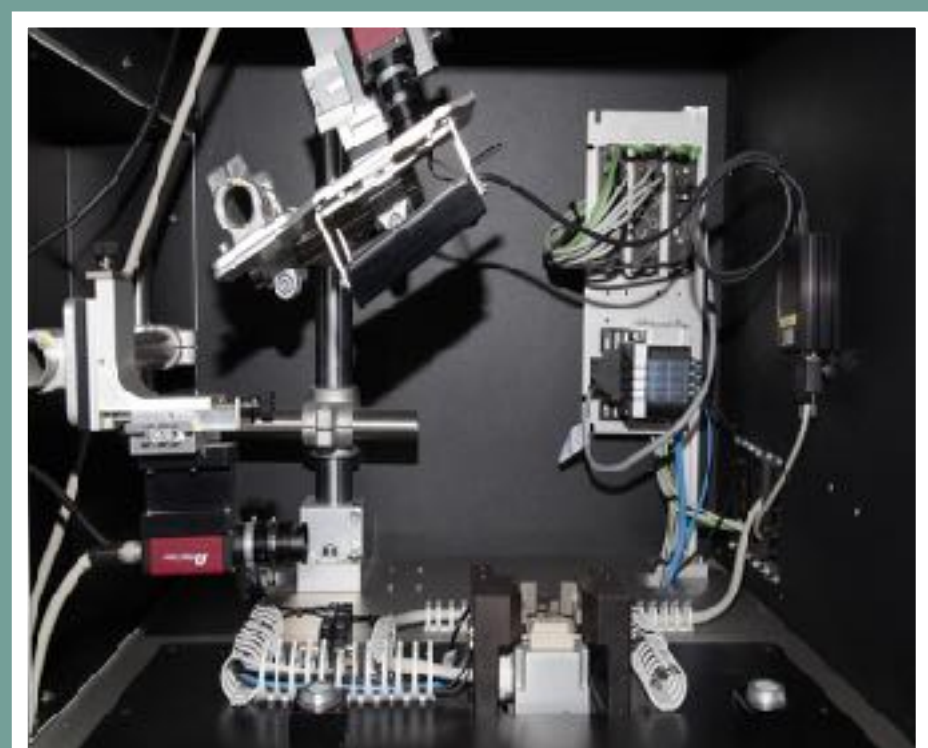
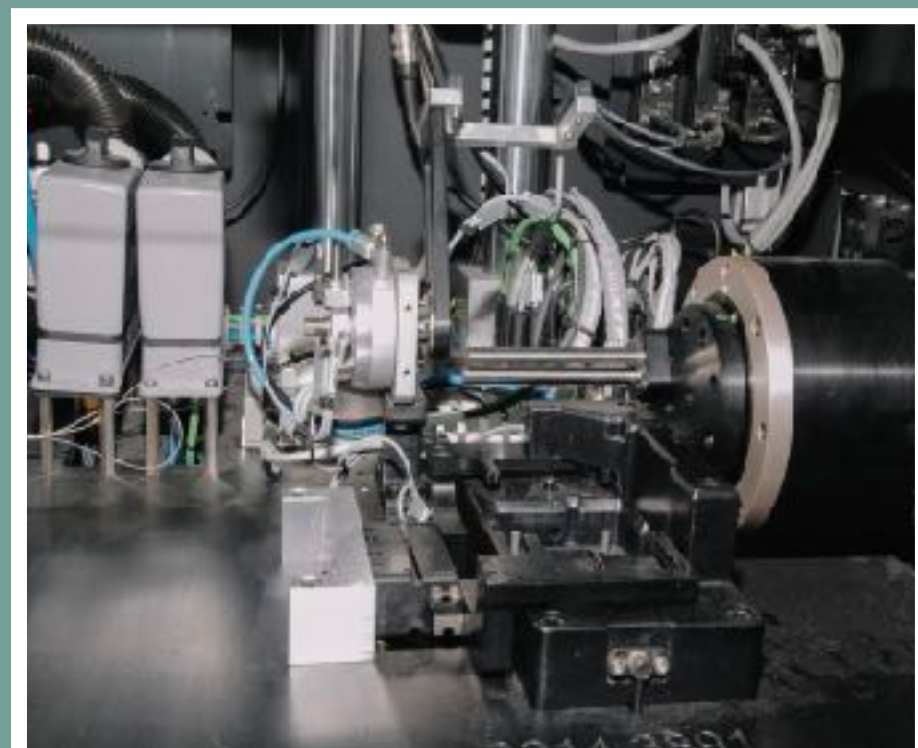
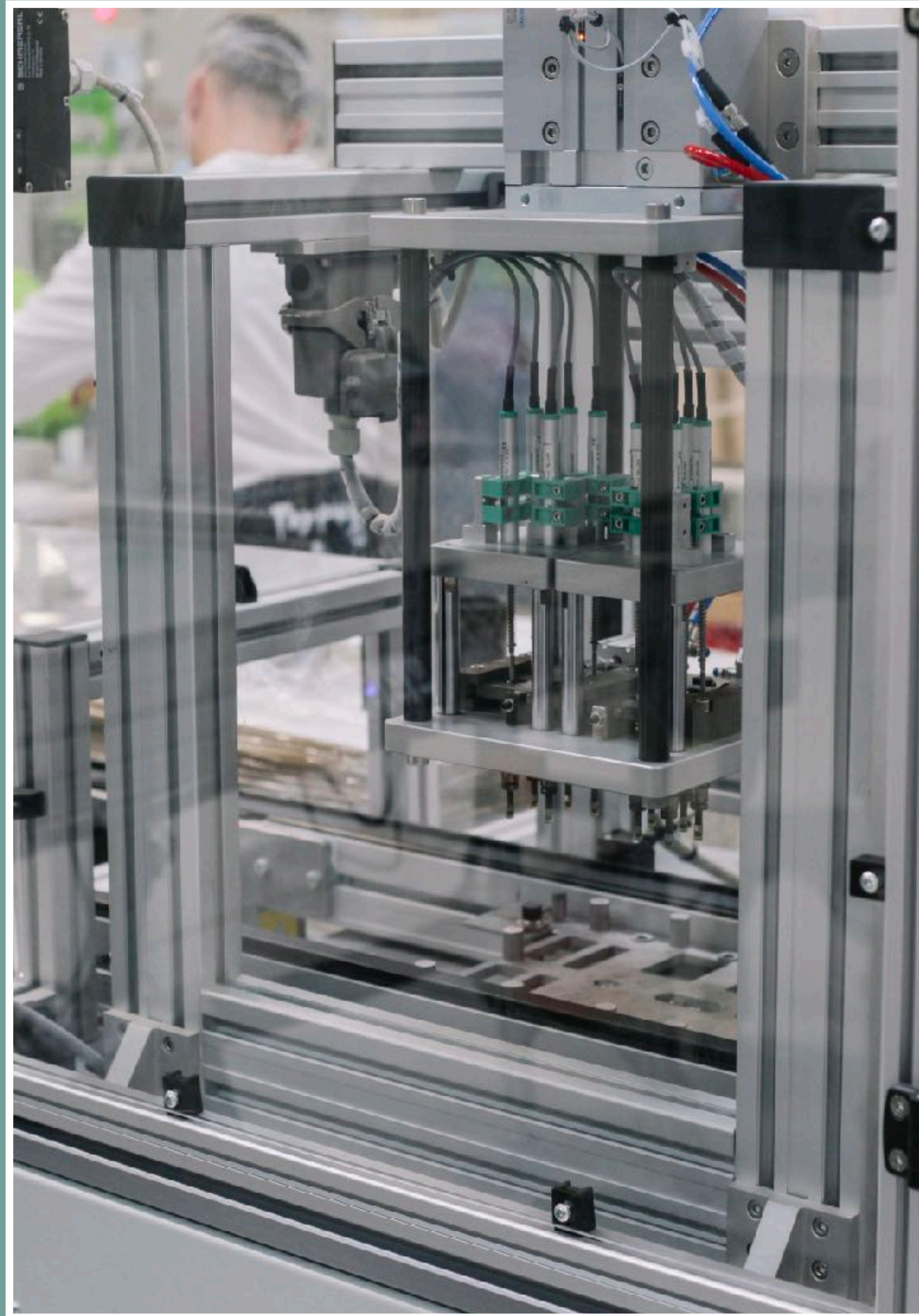




VISIONS- INSPECTION- SOLUTION

We develop and integrate advanced vision systems to ensure product quality and compliance through automated and reliable image processing...





Dimensional Control

High-precision measurement of parts and assemblies to verify critical tolerances.

Example: Measuring the outer diameter and hole alignment of a machined component.

Compliance Check

Verification of conformity against predefined specifications or standards (geometry, marking, labels, etc.).

Example: Checking label position and text accuracy on a packaged product.

Brightness & Luminance Control

Evaluation of light intensity and uniformity, especially for LEDs, displays, and backlit components.

Example: Validating LED backlight brightness on a dashboard interface.

Color Inspection

Real-time detection of color accuracy, uniformity, or deviations in painted, printed, or illuminated parts.

Example: Identifying color shift on plastic housings due to injection mold variations.

Presence & Position Control

Confirmation that components are present, correctly oriented, and properly assembled.

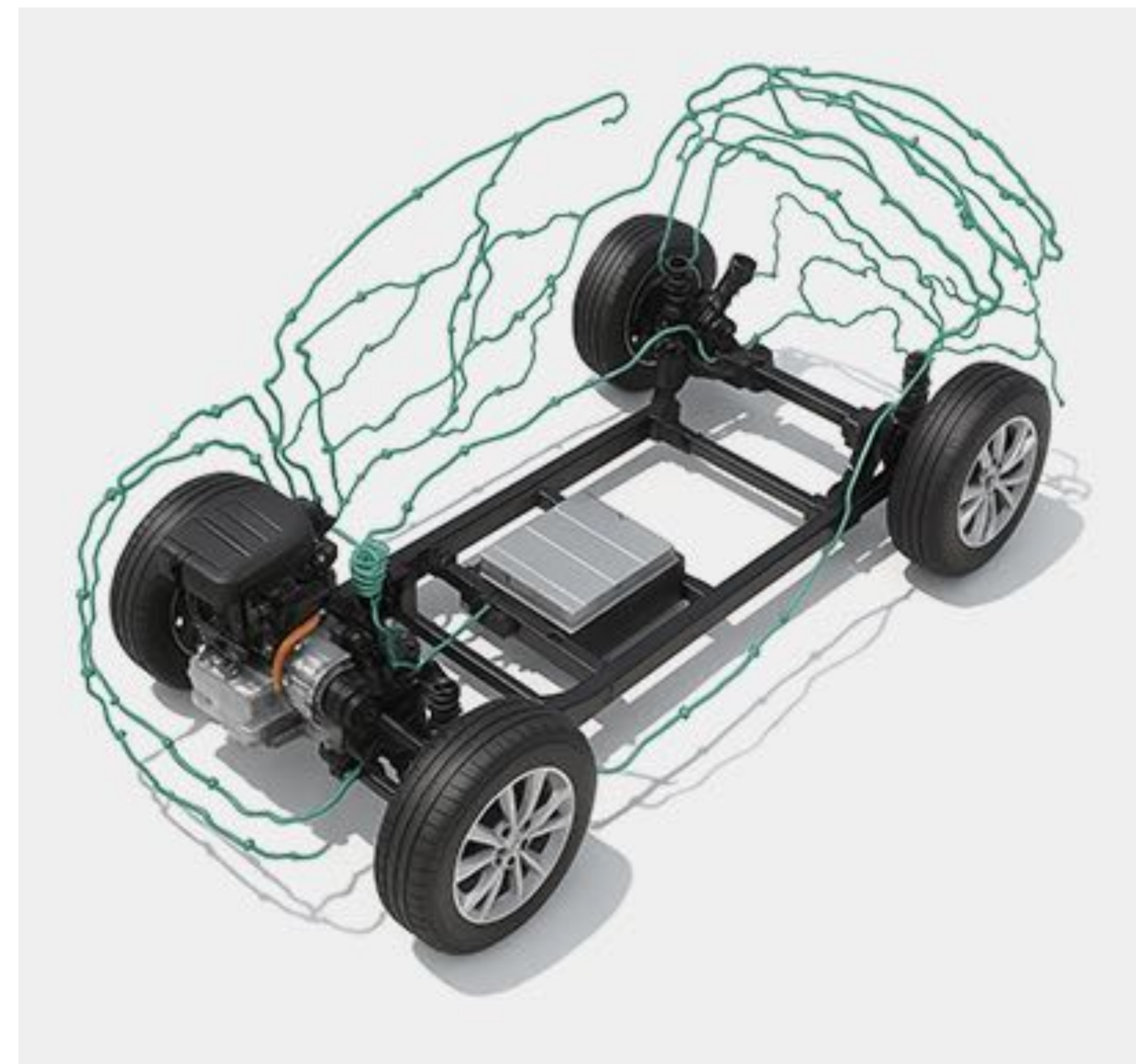
Example: Detecting missing screws or misaligned connectors on an electronic board.

Pixel-Level Control

Inspection of displays or camera sensors down to the pixel level to detect dead pixels, color uniformity, or display artifacts.

Example: End-of-line control of an LCD screen for automotive use.

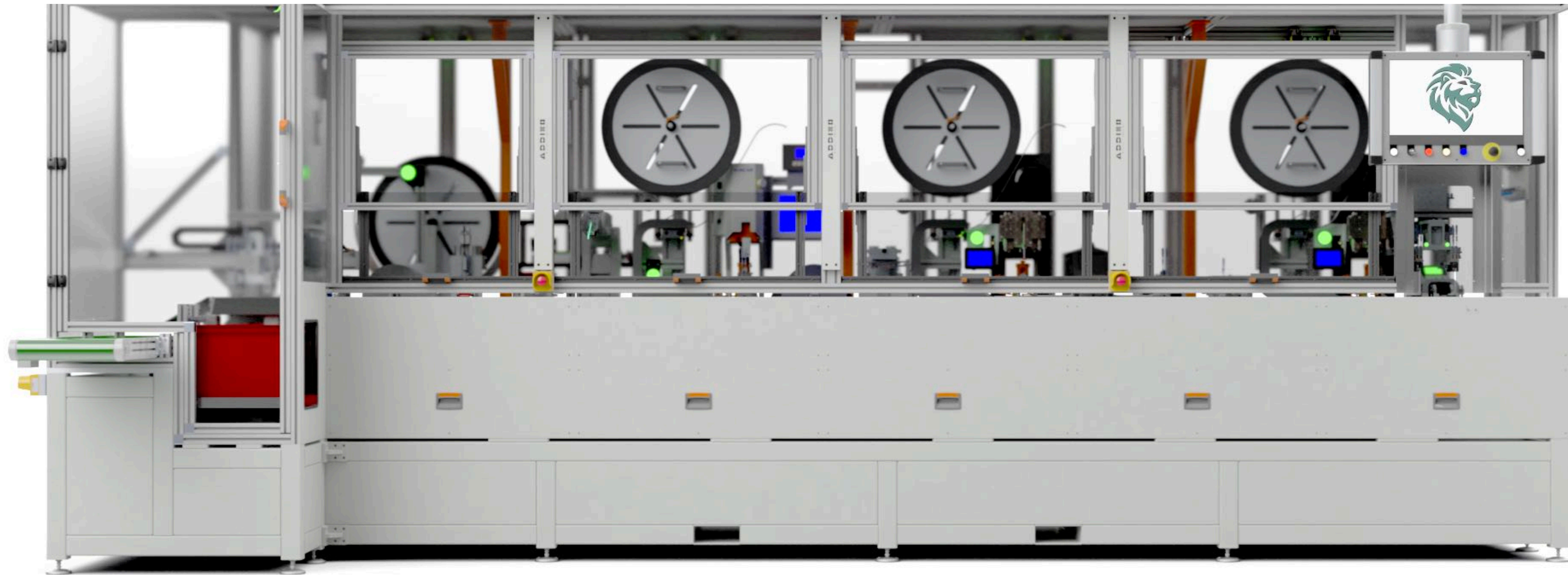




CUSTOM MACHINERY FOR SPECIALIZED CABLES

We develop highly automated testing and assembly stations for the precise and efficient assembly of automotive cables. Our solutions encompass all process steps.





PARTIAL STRIPPING — FERRULE CRIMPING — REMOVE JACKET — BENDING BRAID — COAXIAL STRIPPING — CENTER CONTACT CRIMPING & CHECKING — BRUSHING - TESTING CONTINUITY — OUTER CONTACT CRIMPING — INTERFACE ADAPTOR CLINCHING & CHECKING — DEEPNESS CHECKING — CUTTING BAD PARTS & CABLE UNLOADING

Data cable assembly machine: **MATE AX 90°** Coaxial Cable processing platform

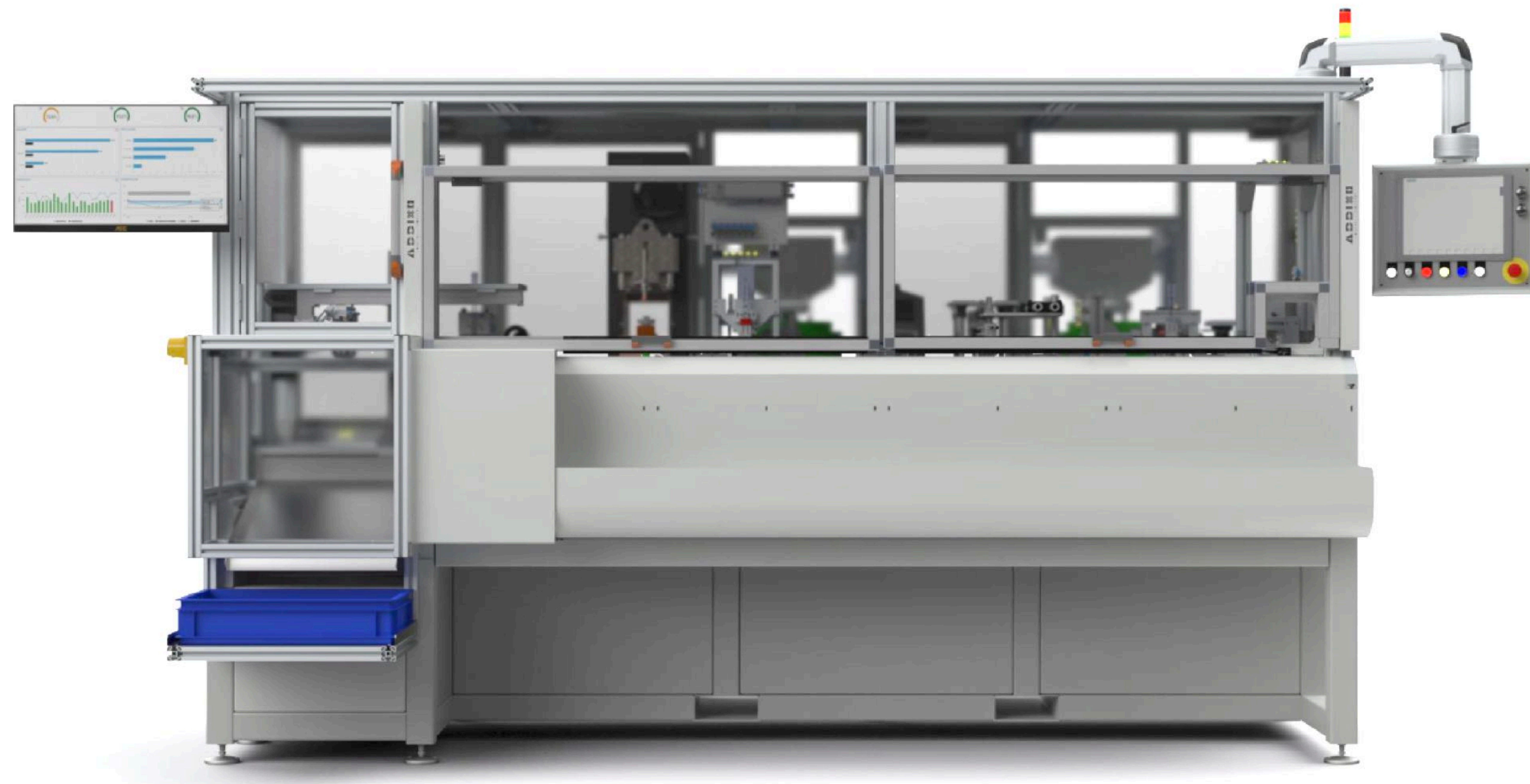
KEY FEATURES

- User HMI
- Quick Reference Selection
- Compatible with Level 3 Data Interface
- Real-Time Equipment Performance
- Flexible Design
- Standard Crimping Applicators
- Products in Reels
- Vacuum System
- Split Cycle (Option)
- Separation of OK & NOK Products

COMPATIBLE WITH MULTIPLE PRODUCTS

- Male or Female Connectors
- Different Lengths
- Different Products
- Different Processes (90°/180°)





ZERO POSITIONING → FERRULE INSERTION → BENDING BRAID → STRIPPING → OUTER CONTACT INSERTION →
OUTER CONTACT CRIMPING → DEEPNESS CHECK & CAMERA CONTROL → CUTTING BAD PARTS & UNLOADING

Data cable assembly machine: Coaxial Cable processing machine

type:

- FAKRA II
- FAKRA SF
- FAKRA AX

COMPATIBLE WITH MULTIPLE PRODUCT:

- Cable with Center Contact Pre-assembled
- Male or Female Connectors
- Different Lengths
- Different Diameters (RTK/RG Version)

FEATURES

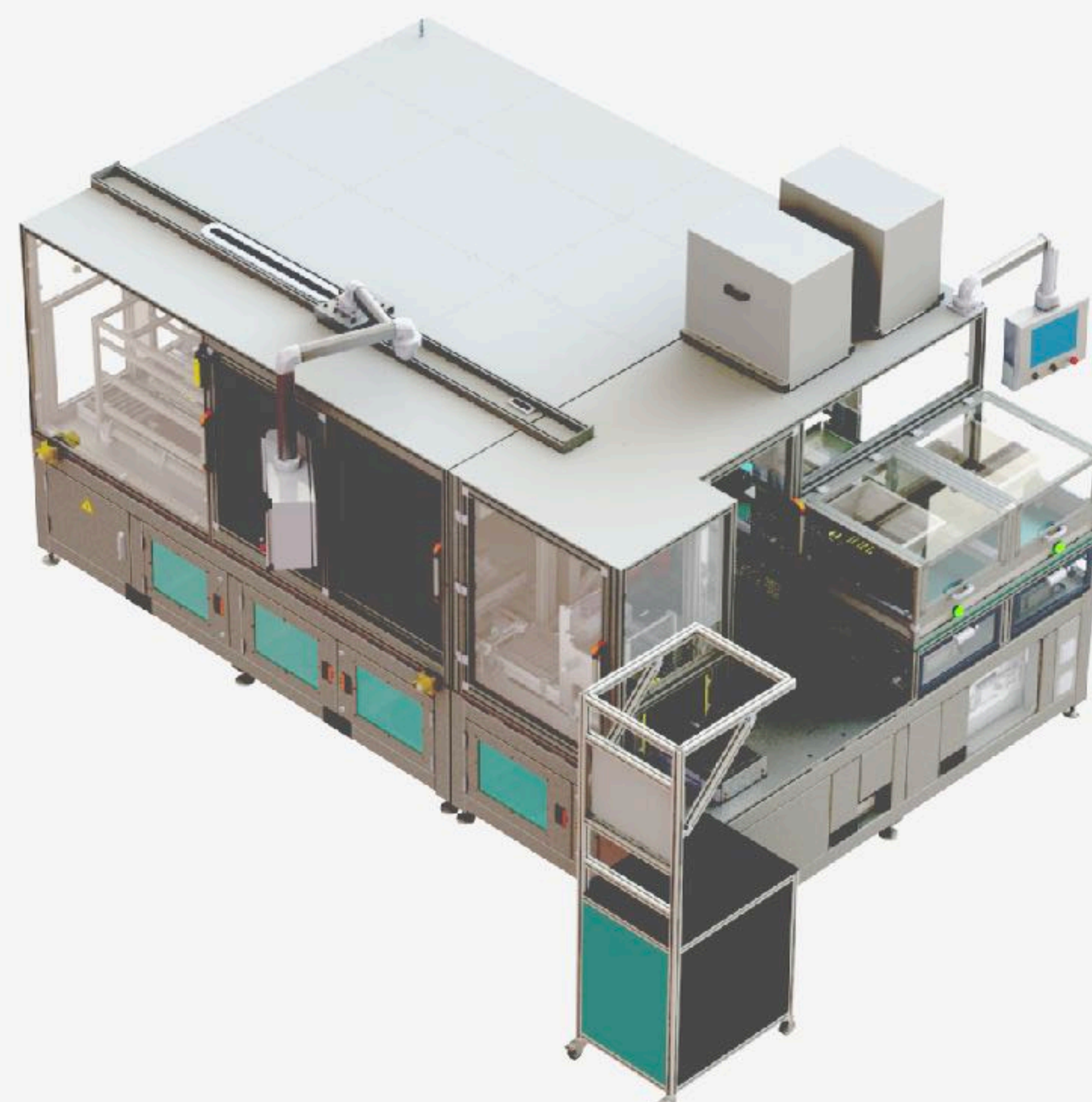
- User HMI
- Quick Reference Selection
- Compatible with Level 3 Data Interface
- Real-Time Equipment Performance

HIGH SPEED CONVEYING MODULE

- Magnetic Transfer Conveyor
- Fixture with Servo Drives Positioning
- High-Precision Positioning
- Repeatability, Performance & Flexibility



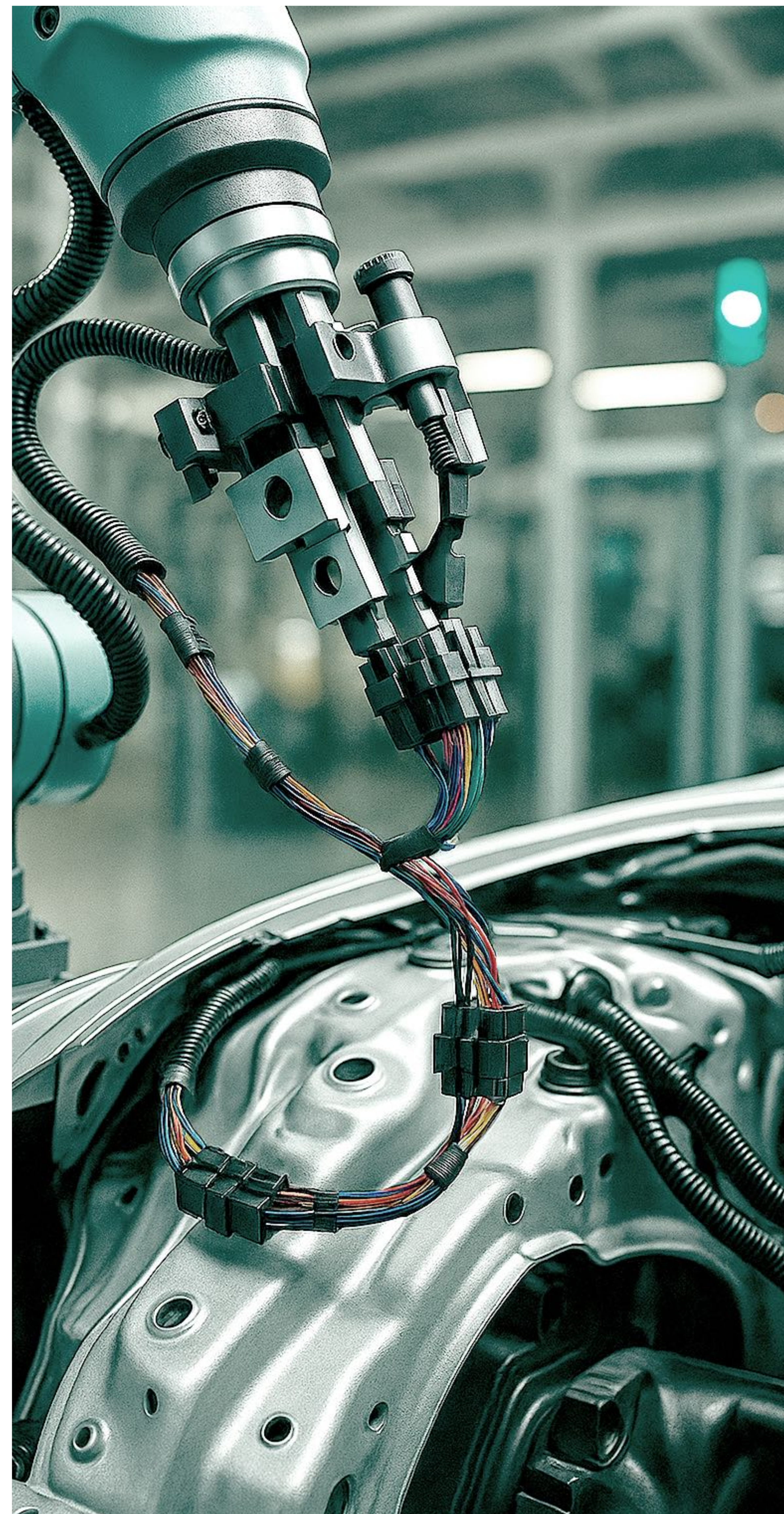
Fully automated platform for assembly and testing of electrical connectors



FEATURES

- Flexible feeding (camera vision, robot loading & unloading)
- Ionisation system
- Electrical test
- Separation of OK/NOK parts
- User HMI
- Quick reference selection
- Compatible with level 3 data interface
- Real time equipment performance
- Flexible design





SMART HARNESS ENGINEERING & AUTOMATION



Custom Test Benches for Wiring Systems

- Design and integration of custom end-of-line (EOL) or functional test benches
- Embedded traceability, diagnostics and reporting systems

Example: EOL test bench for automotive harnesses with continuity, isolation, and short-circuit tests.



Automation for Wiring Operations

- Deployment of automated equipment for crimping, cutting, stripping
- Integration of semi- or fully-automated workstations

Example: Automated crimping and stripping station for high-volume harness production.



Vision-Based Inspection for Wiring Quality

- Implementation of industrial vision systems for real-time quality control
- Detection of miswiring, missing terminals, insulation issues

Example: Vision system for verifying pin presence and correct wire color mapping.



Technical Support & Industrialization Assistance

- Operator training and process engineering support
- Development of technical documentation and manufacturing instructions

Example: Creation of harness assembly guides and work instructions for series launch.





INDUSTRIAL SOFTWARE SOLUTION

We develop tailored software solutions to support your industrial processes, testing, and traceability needs, ensuring seamless integration and operational efficiency...





Traceability Master

Centralized software for managing production traceability across workstations and equipment.

Example: Real-time tracking of serial numbers, operator actions, test results, and assembly steps, with data export for quality analysis or ERP integration.



EMS (Equipment Management System) Development

Custom software to monitor and control machine status, production flow, alarms, maintenance logs, and performance KPIs.

Example: Dashboard showing OEE, downtime reasons, and production targets for an automated assembly line.



HMI (Human-Machine Interface) Development

Intuitive interfaces for operators and technicians, designed for efficiency and error reduction.

Example: Touchscreen panel with guided steps, live test feedback, and part status indicators.



Embedded Test Software

Real-time software for controlling and acquiring data from test benches or embedded systems, often developed in LabVIEW, C/C++, or Python.

Example: Microcontroller-based functional test with CAN communication and automated pass/fail logging.





ENGINEERING & INDUSTRIAL- SERVICES

We support your industrial projects with expert services focused on performance, quality, and manufacturability...





Process Studies & Analysis

In-depth assessment of your current manufacturing processes to identify bottlenecks, inefficiencies, or quality risks.

Example: Time and motion study on an assembly station to optimize operator ergonomics and reduce cycle time.



Manufacturing Consulting

Strategic support to define or optimize your industrialization approach, equipment selection, and production setup.

Example: Defining a scalable production model for a new electronic product, including layout and investment roadmap.



Process Improvement

Implementation of lean methodologies, automation, and quality tools to enhance productivity and reduce waste.

Example: Introduction of poka-yoke systems and line balancing to reduce defect rate and operator downtime.



Design for Manufacturing (DFM) Services

Early involvement in product design to ensure manufacturability, cost control, and quality from the first prototype.

Example: Review of mechanical parts to reduce complexity and assembly time, while maintaining product performance. Design for Manufacturing (DFM).





ARTIFICIAL INTELLIGENCE & BIG DATA

We integrate Artificial Intelligence (AI) and Big Data analytics directly into your machines – unlocking a new dimension of performance, reliability, and responsiveness. Our systems don't just analyze – they learn, decide, and optimize.





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Predictive Maintenance 4.0

Early failure detection using multi-sensor data collection and AI diagnostics – reduces downtime and extends equipment lifespan.

Example: A machine-mounted AI system detects abnormal vibrations in a bearing and recommends maintenance 72 hours before a critical failure.



Autonomous & Adaptive Production

Self-adjusting production parameters in real time – reacting to part variation or environmental changes to ensure consistent quality.

Example: A vision-based inspection system identifies deviations in connector dimensions and adjusts test force and alignment in real time – no manual intervention needed.



Smart Logistics Integration

AI-driven synchronization of material needs with warehouse, AGVs, or operators – reduces delays, stockouts, and excess buffer stock.

Example: The system detects an above-average consumption of test adapters and autonomously triggers a prioritized resupply from the central warehouse.





OUR STRUCTURE, PARTNERS & NETWORKS

At Lion Smart Equipment Solution, we combine deep engineering expertise with industrial manufacturing power – supported by a hand-picked core team and a resilient partner network.



Organizational Chart



OUR NETWORKS & REFERENCES



LION SMART EQUIPMENT SOLUTION

<https://lion-se-solution.de>





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LiON WORK SOLUTION
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LiON ELECTRONIC SOLUTION
SUPPLY CHAIN PARTNER



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ENGINEERING THE HUMAN FUTURE





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