komax

AERO SPACE

WIRE PROCESSING & TESTING

EN

AERO SPACE

DIGITIZED, AUTOMATED SUPPLY CHAIN SOLVES CHALLENGES IN THE PRODUCTION AND INSTALLATION OF WIRE HARNESSES IN THE AEROSPACE INDUSTRY.

Quality assurance, traceability and component minimization are just three of the top challenges faced by wiring harness suppliers for the aerospace industry. At the same time, factors such as a shortage of skilled workers, rising wages globally and the increasing demand to comply with ESG criteria make it difficult to work economically. A significant contribution to problem solving is the combination of digital data management with (step-by-step) automated wire harness production together with quality assurance. This includes the installation, assembly and quality assurance of wire harnesses in aerospace components and aircraft sections through to the final assembly line (FAL) and maintenance, repair and overhaul (MRO). The solutions of the Komax subsidiaries, adaptronic and Cirris, take testing technology to a new level.

As a Smart Factory partner, the Komax Group enables wire manufacturers to use their devices, machines, plants and modern services to redesign and flexibly organize their business processes along the entire value chain.

MODERN TOOLS SOLVE MOST CHALLENGES IN MANUFACTURING WIRE HARNESSES FOR AIRCRAFT

Modern technologies in aircraft increase the importance of precision and quality assurance in Electrical Wiring Interconnection Systems (EWIS). The Komax Group's tools and machines facilitate the manufacturing process along the entire value chain, right down to the MRO area as well as all tests in accordance with the strict specifications of government agencies and aircraft manufacturers.

1 Zone 1– Shop floor area: Harness engineering & data preparation

The development process for the digital wiring harness begins in engineering. Consistent data flows across departments make processes transparent and reduce cost and deadline risks. At the same time, they increase productivity, process and product quality.

2 Zone 2 – Shop floor area: Marking and cutting cables

In view of the tough operating environment of wire harnesses, permanent wire marking ensures traceability. This happens when the wires are cut to the right length before machines sort, bundle and label the wires at high speed, namely in series with high volumes or for high mix/low volume (HM/LV) jobs.

3 Zone 3 – Shop floor area: Wire end processing

Modern, semi-automatic solutions greatly simplify the preparation of the wire end for pre-assembly of the wire harness to a first main connection. Automated quality controls with archived test results remain traceable.

4 Zone 4 – Shop floor area: Harness forming, assembly & testing

Modern, modular assembly tables interactively support assembly. Based on the design data, they visualize the wiring harness layout with its wires and connection components. Software-driven solutions simplify extensive quality testing and ensure the results.

5 Zone 5 – Assembly area section: EWIS testing

Once the wire harnesses have been installed in the sections and aircraft components are prepared for connection to the on-board systems, extensive quality assurance is carried out with mobile, smart test systems inside or outside of the section. These tests run automatically using previously created test programs.

6 Zone 6 – Final assembly area: EWIS testing

In the FAL, the interaction of all on-board systems in the finished aircraft is tested. The test results are documented and archived for automatic traceability. Modern test systems are network compatible and can be easily integrated into any IT landscape.

MRO
Like wiring harness production, all MRO processes also require final functional and safety tests of the electrical system. Software-based test programs enable automated quality assurance with archived results documentation for traceability.

ZONE 1

WIRE HARNESS ENGINEERING & DATA PROCESSING

Project planning of the wire harness and preparation of the data for production
Experience and understanding of the requirements of modern aviation technology are one challenge. The economical design and production of wire harnesses in the face of strict compliance requirements and tight delivery deadlines with increasing cost pressures are another challenge. Aircraft manufacturers can hardly do without digitized business processes with automated production and quality assurance.

Engineering and production preparation
Disruption-free solutions that safely and powerfully supply the aircraft and its systems with energy and transport control signals in real time require wire harnesses with demanding topologies and a wide range of wire types, connection and processing techniques. In the logic, layout and routing of wire harnesses, engineers produce large quantities of data for downstream processes such as procurement and production.

Wire database
Saved in the CAD database, the product data can be sorted and converted into digital bills of material and overviews to suit the production processes of the wire manufacturers as well as the assembly service. Even dynamic changes can be flexibly integrated digitally into the creation process of the wire harness in order to manage them safely and precisely.

For the automated production of wiring harness components, software solutions translate the ECAD data into machine-readable data. This avoids manual, error-prone input on the machine.

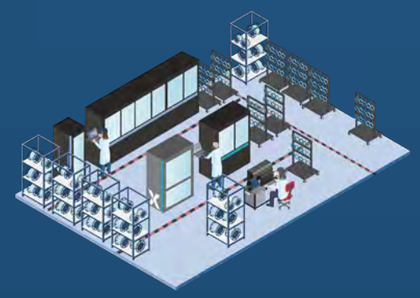
Data2Wire
Structured from the design tool, derived and processed, the data can be used directly, for example, for partially or fully automated production as well as for quality checks with digital archiving of the test results. The development process becomes completely traceable.

A defined protocol transmits the structured specifications and bills of material digitally to the production planning system. Here they are integrated into the production plan and converted into production orders. These jobs are forwarded to the wire processing machine.

Quality assurance parameters
Data also plays an essential role in quality management. Automated quality checks can now be integrated in-line or end-of-line into production. Based on the engineering and production data, test parameters and tolerances are generated using a software-supported test data generator. For traceability purposes, the inspection and test protocols of each wire harness assembly are kept here by serial number.

**Digital end-to-end processes with (partially) automated wire assembly represent audit-ready processes that meet the compliance requirements of the aerospace industry.
At the same time, they minimize error rates and material waste while increasing productivity.**

ZONE 2



MARKING AND CUTTING

Flexible and modular platform for different requirements
Step 1 of wire harness production: The wire is cut to length and identified by UV laser marking or sleeving in accordance with aerospace standards.

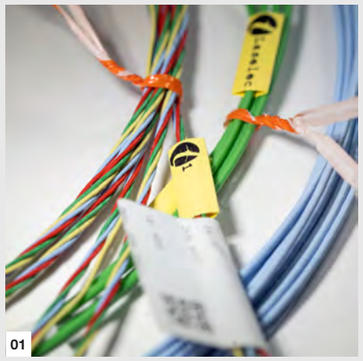
Komax offers a comprehensive range of wire identification solutions that are specially tailored to the requirements of the aerospace industry. They are suitable for a variety of applications, materials and working volumes.

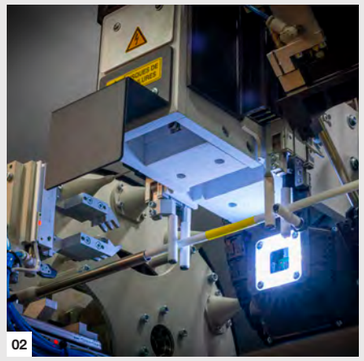
Automated wire assembly with the Optima 600/400 line
In aviation and industry, the trend is moving away from manual wire processing, since machines such as those in the Optima line can do this in a significantly shorter time. In fully controlled processes, the Optima line performs tasks such as cutting to length, marking, sleeving, sorting, tying and labeling – both for high-volume series production and for small quantities with varying characteristics.

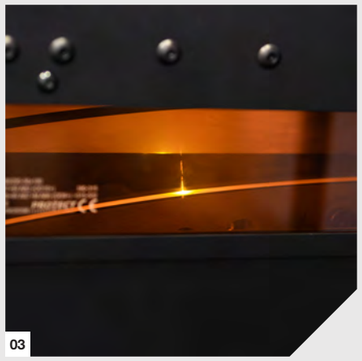
Thanks to automated, operator-independent processes, every single machine-produced wire set meets the industry's exceptionally high quality requirements.

The quality inspection of single processing steps can be integrated into the production process using vision control image processing. Digitally recorded test results can be archived to ensure traceability.

01
The Optima 600 has automatic sleeving assembly and labeling of the wire ends. The wires are coiled and bundled and are ready for transfer to the next processing station.
02
An infrared device can shrink the sleeve after its position has been checked by visual inspection.
03
The laser marking module is also available for the Optima line.


01


02


03

Clear, inalterable and permanent cable marking by UV laser

In aerospace, the complete traceability of all components is essential. For this purpose, wire manufacturers must clearly mark all cables, regardless of whether they are single or multi-core wires, sheathed or twisted.

UV laser marking offers several advantages for UV-markable cables: Unlike inkjet printing, it remains permanently legible – and unlike hot stamping, it protects the plastic insulation. The foremost requirement is that the cable manufacturer must guarantee that the cable is suitable for UV marking. If this is not the case, sleeving is an alternative identification method. The Optima line can combine both marking methods to make restructuring a mixed production easier.

UV laser marking with the MRO Line 200

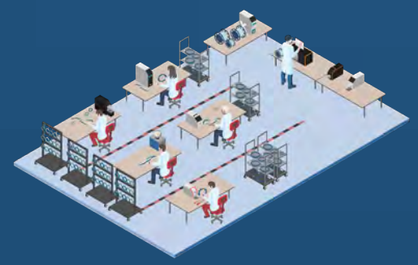
With its excellent cost-benefit ratio, the compact MRO 200 is ideal for small to medium production volumes for aircraft manufacturers, wiring harness manufacturers and MRO centers. It was specially developed for their high demands for an efficient and identification process. The MRO 200 can be easily upgraded for higher marking speeds and larger production volumes.

With mask technology and the diode-pumped laser system, the MRO 200 offers two proven technologies that ensure permanently legible marking, even on twisted single or multi-core wires with a jacket of 6 to 26 AWG.

Frequent spool change can be avoided by grouping wires by type and cross-section so that the system processes similar wires in stacks.

The MRO Line 200 stands out for its high availability, since it does not require any external adjustments or daily maintenance. Test menus and remote maintenance software facilitate a fast and reliable diagnosis.

ZONE 3



WIRE END PROCESSING

Semi-automatic solutions for individual workstations on the shop floor

Wire end processing of a wide range of wires and cables: The installation preparation of a wire set varies depending on the wire type and wires. Stripping, crimping and heat shrinking require different methods and tools as well as quality controls. The machine support ensures that all cables and wires are processed consistently and exactly as specified so that they meet the high quality requirements of the aerospace industry with minimal material waste. Automated quality controls with smart tools enable the archiving of test results so that they remain traceable.

Source: GKN Aerospace

Mira 230 Q for mechanical stripping

The Mira 230 Q wire stripper can be used to strip wires with a maximum outer diameter of 6.5 mm up to a length of 46 mm. The ACD function ensures that the strands are not damaged. The integrated drawer provides a clear tray for all Mira 230 Q tools.

Everything important is always handy in the integrated accessory drawer.

Mira 340 Q for a programmable rotary cut

With the unique and patented electronically supported ACD conductor detection, the Mira 340 Q precisely strips difficult wires with an outer diameter of up to 8 mm to a length of up to 72 mm – in whole or in part as well as in several steps with short cuts, e.g., for multi-core or multi-layer cables. The rotation cut with 4X blades ensures particularly smooth cutting surfaces even on demanding insulation such as tough Teflon®, flexible silicone or fiber mesh. The ACD monitor prevents any contact between blade and conductor. The cutting parameters are programmed via the quick article selection via barcode scanning. This prevents incorrect entries.

01+02
Processing a wide range of cable types and demanding insulations.
03
The incision monitoring ACD detects and signals the slightest contact between the blade and strands.

01

02

03

ILC Bench Top for demanding applications

The ILC Bench Top is a versatile solution for demanding applications such as stripping complex cable constructions or out of round wires and cables. Coaxial cables with dielectric or multilayer outer jacket made of composite material are just one example. Creating stripping windows as well as the longitudinal slit function of the ILC BTS version simplify the removal of the insulation of these cables and wires. Once loaded, stripping programs can be selected repeatedly via a menu or by a barcode scan. The stripping program starts automatically when the cable is inserted.

▲
High-precision stripping of a wide range of even the most demanding cable types.

Semiautomatic stripping of stranded, multi-conductor, coaxial and optical fibre cables

The programmable tools of the series B240, B440 and B540 have been developed for stripping as well as for longitudinal, cross and window slitting of special cables with a cross-section of 0.05 – 70 mm² and a maximum diameter of 12 mm. Three rotating blades also prove themselves on insulation such as Kapton and silicone as well as PUR, PVC, rubber, Teflon®, Tefzel® and textile glass braiding. For a pull-off length of up to 50 mm, the B440 cuts linear or perpendicular to the wire axis. Because the blades, centering jaws and gripper jaws can be used universally, there is no need to retool when changing wire types.

ShieldCut 8100 for cutting cable shields

The ShieldCut 8100 is an unrivaled flexible, semiautomatic machine for cutting the braided shield of round and irregular cables. A rotating brush first combs out the braided shield strands in order to cut them between two rotating blades. The machine is quickly and easily operated via a color touchscreen.

IRMO for infrared heat shrinking

The IRMO is a mobile infrared shrinking device for products up to 16 mm (0.6 inches) in diameter. Thanks to its small size and integrated trigger button, IRMO is suitable for mobile use in small installation spaces, such as on wire harness mounting plates.

Pneumatic-assisted crimping

The WA27F, WA22P and WA22 pneumatic crimp applicators are directly equivalent to the corresponding hand tools. Therefore, they also use the same accessories, such as turret heads, positioners and measurement devices. If production requirements increase, only the appropriate tool frame is added. The resulting performance is in many cases comparable to that of an automated system.

Hand tools on request
Hand tools are not part of the Komax Group's portfolio. However, local contact persons will be happy to help you select suitable tools.

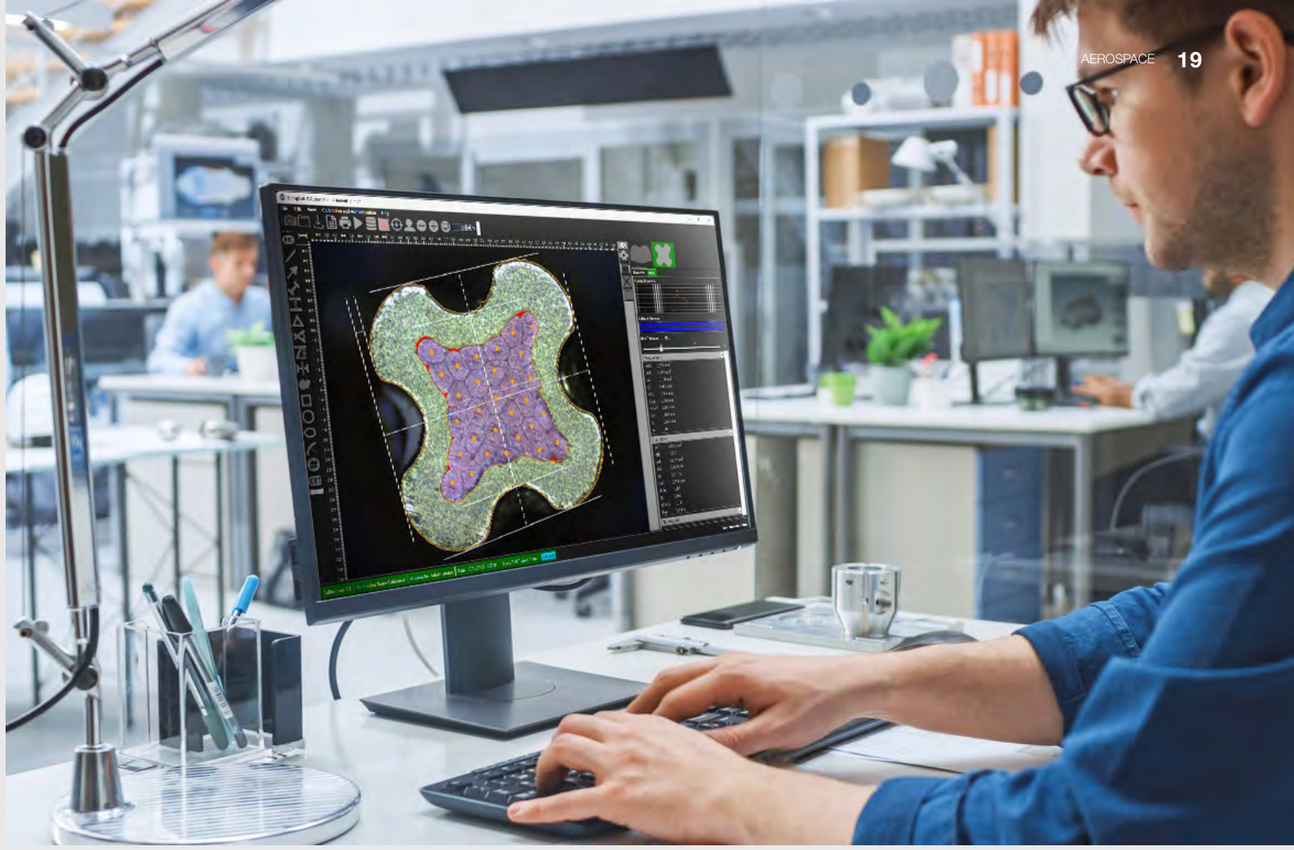
IRDC-2000-1 for digitally controlled heat shrinking

Software-supported and therefore precise, the IRDC-2000 controls the heating process of either one or two infrared shrinking devices. Using the touchscreen or remote access, the user seamlessly runs through the entire process from initial configuration to programming, testing and production. The burn power and time parameters of the single-step or multi-step heat shrink programs can be precisely adjusted in test mode.

ZONE 3

QUALITY CONTROL IN THE PRODUCTION AREA

Final inspection of crimps and marking
Modern systems simplify the various quality assurance and control procedures. They ensure the consistently high quality level of products required in the aerospace industry when they leave Zone 3. The tools help to monitor and measure the crimp force, crimp height and pull-off force of open and closed terminals. For the purpose of high transparency and traceability, these network-compatible systems manage the test results in a central database.



PullTester 26T for measurement of pull-out forces
The motorized PullTester 26T benchtop device verifies the critical pull-out forces of crimped, welded, plugged and other connections. With a constant pull-off speed, the device measures the pull-out forces evenly up to 1,000 N. In two separately calibrated measurement ranges, the PullTester tests samples of a wide range of cross sections. The contact and cable holders can be easily replaced using the quick-change system.

The system visualizes the pull-out curve in real time, and in conjunction with WinCrimp software, it archives the measurement results together with the production orders. Statistics increase the potential for optimization.

WinCrimp 8 for software-assisted quality assurance
The WinCrimp 8 software combines the measurement results of different devices for the analysis of pull-out force, crimp height and crimp force with the corresponding production orders. The software automatically stores the result data in an SQL database, which in turn makes it easy to connect other systems. Reference data for measurements, such as cables, terminals, applicators or tolerances, facilitate continuous process optimization. WinCrimp 8 is available in three versions:

Basic: This free WinCrimp 8 package works exclusively locally and also stores the result data in a local database.

Standard: This package is client-server compatible and supports data export in various formats.

Pro: The professional version allows you to define tolerances, monitor calibration intervals and execute complex job functions.

Flexible statistics and freely configurable dashboards enable continuous analysis in realtime.

Crimp height measurement with CHM (Crimp Height Measuring)

CHM simplifies and speeds up the measurement of the crimp height. After the operator has correctly positioned the terminal between the measuring contacts in the illuminated work area, the spring-loaded measuring pin ensures even pressure on the terminal. This reliably generates accurate height values, even with different operators.

SawInspect System 6 (SIS 6) for micrograph analysis of different crimp shapes

Cutting with a carbide saw blade followed by safe electrolysis helps to prepare samples for testing quickly and easily. Microscopically supported, the software automatically evaluates different crimp shapes. Customizable reports can be generated from the archived test results. The flexible parameterization of the system as well as the variety of different gripper jaws for holding the specimens, various saw blades and suitable electrolyte solutions make the SIS 6 very flexible to use.

EasyContrast checks the legibility of the wire marking

EasyContrast simplifies the verification of wire marking by measuring the contrast of all types of white and light-colored wires. It guarantees precise and consistent contrast measurement in accordance with the EN 3475 - 705 and SAE AS 4373 standards. The process saves time and ensures accurate identification. EasyContrast generates detailed reports for traceability.

ZONE 4

HARNESS FORMING & INSTALLATION

Quickly create error-free wire harnesses with an interactive assembly board

The wire harness is nowadays assembled on an increasingly digitized wiring board. The board visualizes the wire harness layout with its wires, suction cups and other elements. Continuity and functional tests ensure correct wiring before integration into the wire harness. Advanced, software-controlled solutions increase efficiency, productivity and facilitate quality assurance. Before series/semi-series production of these wires, a prototype can be created for validation purposes.

EasyWiring – the software-driven harness assemby solution

Multi-variant wire harnesses in small batch sizes (LV/HM) make drawings on classic wooden boards a problem due to the numerous changes. EasyWiring enables the transformation of wire harness manufacturing into the digital age. Thanks to smart import of CAD data, fast electronic updates ensure error-free production. Dynamically displayed assembly instructions with visual aids guide the operator through the entire production process including Harness Testing. At the same time, the EasyWiring software ensures traceability. Flexible, reusable tables can be assembled from 75'' and 86'' modules for installation of a variety of wire harnesses, which optimizes the workshop area.

EasyWiring is the ideal solution for the production and prototyping of electrical wire harnesses.

EasyControl – Bluetooth wristband replaces mouse and keyboard
EasyControl increases the ergonomics of the workplace by allowing direct control of the EasyWiring board via the wristband unit.

ZONE 4 TEST AREA

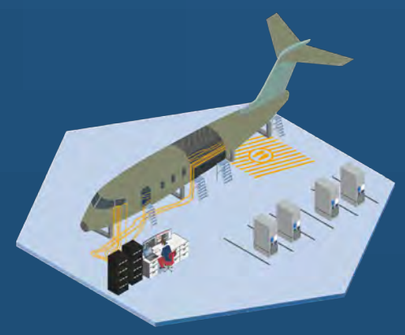
Cirris-5150 Automation Controller for customer-specific tests
In addition to assembly processes, the 5150 Automation Controller also controls customer-specific, complex test tasks in combination with external devices. It checks wire harnesses and sub-assemblies with the defined aerospace parameters. The open structure of the 5150 allows integration into existing MES systems. All protocols such as OPC-UA, MQTT... as well as all fieldbuses are supported. This means that the 5150 fits perfectly into a modern assembly and quality landscape.

Cirris-8100 Test System for low voltage wire harnesses
Due to its highly compact design, the 8100 offers the option of both centralized and decentrallized checking of wire harnesses and wiring. The different test modes, “Guided Test”, “Random build” and many others, enable the implementation of complex test specifications. The EasyWire software, which is used in many areas of aerospace, offers complete process control thanks to its intuitive operation, end-to-end documentation and connectivity. The 8100 provides up to 100,000 high-speed test points and can check wiring as well as components. The EasyWire software has a connector database in which almost all plug-in systems are integrated and thus enables graphically guided checking.

Cirris-8250 Test Racks for high-voltage wire harnesses
The 8250 test racks meet the particularly stringent test standards for the high-voltage range, even for increasingly complex aircraft systems. The test programs for safety and functional checks can be flexibly configured, whether it is high-voltage tests or active, passive components. Up to 100,000 points are available for large wire harnesses. State-of-the-art control functions and the control of external devices ensure optimum implementation of the test specifications. The 8250 test system also supports the guided and visual creation and checking of wire harnesses.

Subsequent stripping on the assembly board with the Sylade 7 H
The lightweight, portable Sylade 7 H can be placed directly on the assembly board for wire stripping during wire harness production. It processes different types of wires, including twisted, shielded or non-round wires. The Sylade 7b H and 7v H models can store pre-programmed procedures with parameters such as intensity, rotational speed and number of passes. The device automatically detects wire diameter and optimizes the cycle time for the same program.

ZONE 5



ELECTRICAL SYSTEM WIRING AND QUALITY ASSURANCE

Secure EWIS (Electrical Wiring Interconnection System) wiring thanks to modern test systems
In this production area, the prefabricated wire harnesses are installed and processed in the intended components (such as doors, seats, galleys) and aircraft sections (cockpit, fuselage, wings). Strict quality controls ensure connectivity and integrity of wiring after installation.

Installation of wire harnesses and further processing
After installation in the respective structures, the wire harnesses are reworked in a variety of manual ways, and additional terminals are attached and fitted in plug cavities. These reworking and assembly processes must be re-checked to ensure the integrity of the overall wiring. To prepare for the test, all connectors must be adapted to the test system. When all connectors are connected to the test system, the automated test run is started according to the guidelines and international norms like EN DIN 2283 of the aircraft manufacturers.

Smart measurement and inspection systems for customized tests
Powerful technology makes electrical tests in the low-voltage and high-voltage range highly efficient. The wiring is checked automatically regarding continuity and insulation resistance, completeness and function. Despite increasingly complex electronic systems and the associated increasing testing requirements, our measuring and testing systems deliver the results quickly, reliably and economically.

In addition to permanently installed test stands, Komax also offers mobile and decentralized test solutions. These allow a flexible test setup and thus an optimized test sequence. Their modularity and expandability in terms of hardware and software make them very future-proof.

The documented test results are the prerequisite for handing over the tested aviation components to the next assembly process. At the same time, they are used for traceability and enable the quality of the production to be analyzed.

ZONE 6

FINAL ASSEMBLY OF AIRCRAFT AND QUALITY ASSURANCE OF ELECTRICAL SYSTEMS

EWIS final assembly and completion of the electrical system
In this production area, the aircraft are assembled and equipped with the complete electrical system. Smart tools support test program creation and a wide range of tests to ensure that the electrical system is complete and correctly installed. The measurement and test results are documented and archived for traceability.

In the final assembly line (FAL), the prefabricated aircraft sections, components and systems are assembled into the final aircraft. Finally, all wire harnesses are also connected together to build the entire electrical system. The necessary work steps vary depending on the manufacturer and aircraft type.

Finally, electrical wiring tests are carried out, which serve as a final check of the entire electrical system. For this crucial final inspection, the Komax Group offers powerful test systems with which the integrity of the entire wiring can be verified after final assembly.

Smart test systems support safety-relevant final tests
The test systems are mobile and can therefore be used inside and outside of the aircraft. To prepare the wiring tests, all plug connections of the electrical system must be adapted to the test systems. After these preparations, the automated test sequence can be started according to the guidelines and standards as well as international regulation like EN DIN 2283.

As with the upstream test processes, the wiring is checked for continuity and insulation resistance, completeness and function. The test results are documented and are used for traceability.

Check of final assembly in accordance with EWIS in the FAL area
After the final assembly of all prefabricated aircraft parts, components and systems, the final functional and safety tests according to the aircraft type and the manufacturer's requirements are pending. For this crucial final inspection, the Komax Group offers powerful, mobile systems to check and document the integrity of the entire wiring of the aircraft.

Once all the wire harness connectors are connected to the tester, the automated test sequence can be started.

The test systems can be integrated into the Komax Smart Factory for monitoring production, for statistics in knowledge management and for optimization as well as for the required traceability.

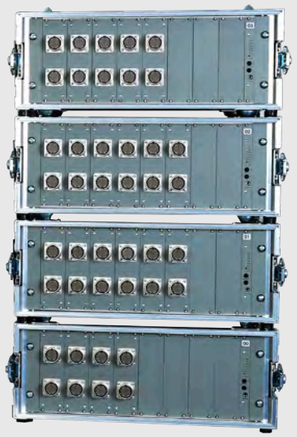
ZONE 5+6 PRODUCTS

NT 800 is a universal test system for cable and electrical assembly testing. With its high-voltage capability up to 1300 V DC, the system meets the requirements of EN 2283 and is therefore suitable for applications with increased electrical safety and quality demands. NT 800 combines compliance, flexibility, and efficiency within a single system platform.

NT 800 the solution for large test objects

The NT 800 test system meets the special requirements for test environments of very large unit under tests (UUTs) during pre-assembly and final assembly in accordance with standards. The test system consists of a central base unit with control software and measurement electronics as well as several TPUs (Test Point Units) for off-site test points. The NT 800 is highly scalable thanks to its modular design and wide variety of application-specific plug-and-play test interfaces.

Four factors reduce the costs of series production:
The high degree of automation during test program creation, the space saving due to the miniaturized hardware as well as the reduced number of adapter cables and their length by up to 70 %.



Comprehensive solutions from a single source

In addition to the actual test devices, KOMAX offers comprehensive integrated solutions from a single source.

These include adapter cables, adaptations in line replacement units (LRUs), storage solutions, customer-specific software importers as well as services such as test program creation, training and maintenance contracts.

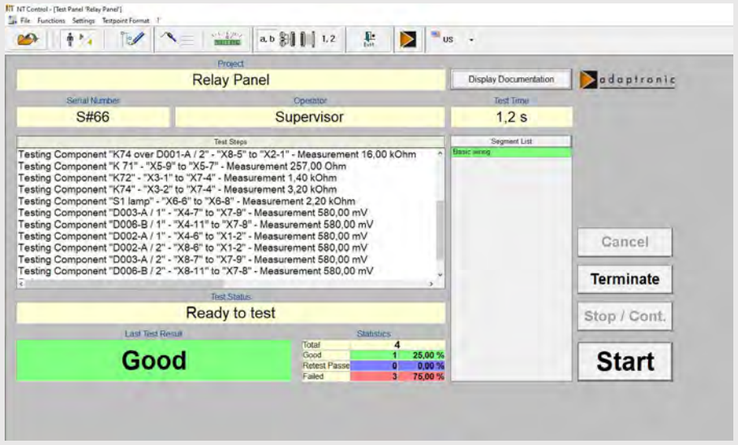
NT 800 with Active Termination Adapters (ATA)

The NT 800 test system can be equipped with Active Termination Adapters (ATA). These significantly reduce the number of required adapter cables by enabling flexible and intelligent signal termination directly at UUT Cable.

This solution results a reduction of required adapter cables by up to approximately 95 %, significantly lowering costs due less system complexity and setup times, while increasing overall flexibility and efficiency of the test setup.

Control of NT systems for quality assurance

The NT series test systems are predestined for application-specific function and safety tests of wiring and assemblies in the aerospace industry. They have already proven themselves thousands of times. A wide variety of test applications, including individual ones, are operated and programmed via an intuitive user interface. Existing test programs and CAD data in third-party systems can be converted and applied. The NT Control software also offers multimeter and pin probe functions. Meaningful error history lists and detailed error displays help the operator to locate and correct errors easily and quickly. The final test report can of course be adapted depending on the content and layout!



MRO

MAINTENANCE, REPAIR AND OVERHAUL (MRO)

MRO processes for aviation components include a wide range of activities to ensure airworthiness and reliability. The most important activities include inspection, maintenance and carrying out repairs on the electrical system.

Final inspections are essential to ensure that the electrical system meets standards and functions properly.

The maintenance, inspection, repair and overhaul of electrical systems are subject to the strict guidelines and standards of aviation authorities and aircraft manufacturers. Wiring and the electrical system are an important aspect of the regular MRO processes for aviation components. After carrying out work on the MRO device electric system, electrical tests ensure that the electrical system is functioning properly.

The wiring is checked regarding continuity and insulation resistance, completeness and the function of components. These tests are primarily and reliably carried out with the help of wiring test systems. Individually created test programs support automated quality inspection, create test protocols and archive them so that traceability is guaranteed.

MRO PRODUCTS

KT236 the lightweight and mobile wiring tester

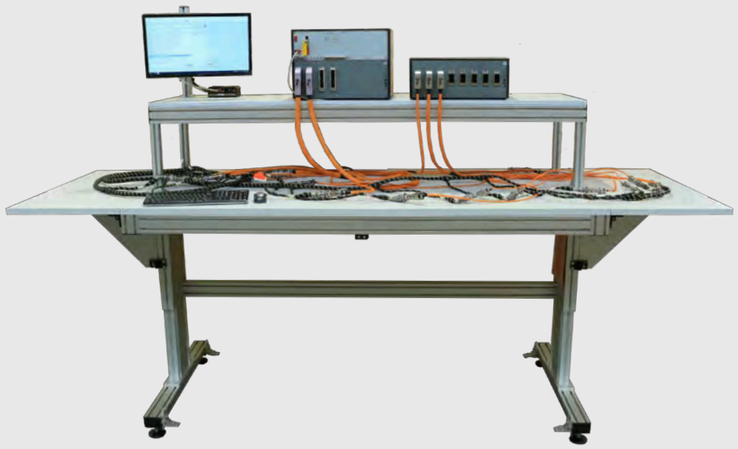
Extremely robust, mobile and flexible in stand-alone operation, the KT236 supports quality assurance with up to 512 freely selectable test point interfaces. Simple and multilingual, the device manages all test programs and provides meaningful result reports for continuity, short-circuit, component and up to 1.000 VDC insulation resistance testing.

Looking for an efficient wire marking solution for your MRO activities? The MRO200 laser wire marker meets the needs of MRO centers with its precision, durability and compliance with industry standards. **See page 10 - 11.**

NT 600 - the modular tabletop tester

The NT 600 modular wiring tester enables the user-friendly editors to adapt the test programs in the NT Control software to the requirements of the respective continuity, short-circuit or component test.

The tester can perform high voltage tests up to 1,500 VDC and dielectric tests up to 1,060 VAC and 1,500 VDC. Thanks to its modularity, the test points can be expanded from 1,024 in the NT 600 basic unit to up to 5,120.



NT 700 – NT 600's big brother

The NT 700 enables continuity, short-circuit and component tests in higher test voltage ranges than the NT 600, such as low voltages up to 250 VDC or dielectric strengths up to 6,000 VDC / 5,000 VAC. In addition, it offers features such as the insulation test up to 6,000 VDC, the high current connection test up to 2 ADC and the protective conductor up to 25 AAC. The function test also allows active components of the test item to be controlled/activated. The modular NT 700 can be expanded in many ways. To gain important insights, the NT 700 can be connected to a database to centrally manage and evaluate the result logs.

OWP – Open Wire Probe

The OWP probe enables the measurement of open wire ends and connections in control cabinets, control panels and in pre-assembled wire bundles.

Using the test probe, the system logs all line information and connection points together with all measurement results, such as the continuity and component test (switches, resistors, diodes) or AC/DC voltage measurement.

NT control editors for customizing link lists and components as well as data import of open wires from wiring lists make OWP easy to integrate into any test sequence. An info screen guides the operator through the respective test steps.

To monitor the MRO services, create statistics for knowledge management and process optimization and ensure the required traceability, all test systems can be integrated into the Komax Smart Factory.

KOMAX GROUP SERVICES

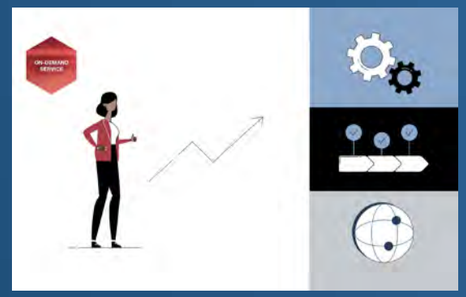
THE BEST EQUIPMENT DESERVES
THE BEST SERVICE

CARE Service Agreements

Our CARE Service Agreements are attractive service packages tailored to your maintenance and service demands, offering scheduled annual checkups and comprehensive support. With yearly inspections, calibrations, and maintenance services provided by our technicians as well as warranty extension and educational services for your operating and technical personnel, your technology assets are set for longevity and flawless production.

ON-DEMAND Services

Our ON-DEMAND services are tailored to meet the needs of our customers and are designed to support flawless, uninterrupted production with consistently high-quality results. Our service technicians assist you in your daily operations, making the setup of new machines, asset maintenance, and even relocations and emergencies hassle-free.

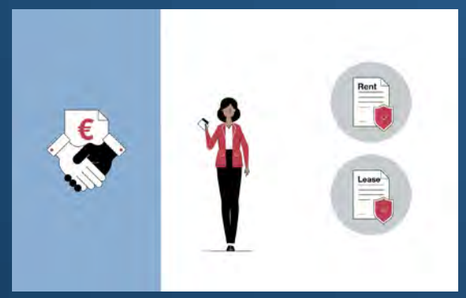


Original Parts Services

Using original wear and spare parts for your technology assets ensures high compatibility and longevity of your machines, resulting in flawless, uninterrupted production of high-quality output. To ensure that your Komax Group assets are maintained with the exact original parts they need, we offer our Original Parts Service.

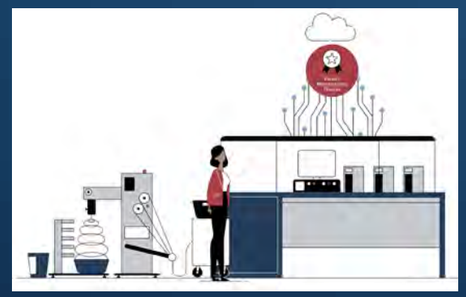
Financial Services

Having the latest technology, a diverse equipment mix for automated wire production, and custom assets can give you a competitive edge. We support your investment in the future by offering financial services, including payment options such as leasing in cooperation with Siemens Financing Services or any other local provider.



Digital Services

Our technology is IoT-ready and comes with DIGITAL SERVICES that provides insights and control over your machines, systems, and production data. With the annual licensing your applications are always up-to-date. Getting real-time production data statistics and alerts when standard deviate have never been easier.



WELCOME
TO THE KOMAX GROUP

komax
Schleuniger
adaptronic
CIRRIS
DI.IT
TECHNOLOGY HOSVER
WUSTEC

Komax – leading the field now and in the future

As a pioneer and market leader in automated wire processing, Komax provides its customers with innovative solutions. Komax manufactures series and customer-specific machinery, catering to every degree of automation and customization. Its range of quality tools, test systems, and intelligent software and networking solutions complete the portfolio, and ensure safe, flexible, and efficient production.
Komax is a globally active Swiss company with highly qualified employees and development and production facilities on several continents. It provides local support to customers worldwide through its unique sales and service network and offers services that help them get the most out of their investments.

Komax AG
Industriestrasse 6
6036 Dierikon, Switzerland
Phone +41 41 455 04 55
sales.din@komaxgroup.com

komax
komaxgroup.com

Aerospace V3 03-2026
Subject to change