

THE WAY TO MAKE IT



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# FOR EVERY CHALLENGE THERE IS ONE RIGHT ANSWER

## Solutions for a wide range of applications

This issue of our customer magazine coincides with our in-house show in Dierikon from 22 to 24 October 2014 and gives you a comprehensive overview of our diverse areas of competence in wire processing.

We have ambitiously expanded our expertise ever since our founding in 1975. In countless, successfully completed projects we have also gathered valuable experience that we incorporate in our new advances. Consequently, we can present a unique range of solutions today that comprehensively address the widest variety of needs in myriad industries such as the automotive industry, the telecom/datacom sector and for other categories of industrial customers.

Along with our proven standard equipment for individual processes, we network our machines, processing chains and integrated quality monitoring systems to create total solutions that excel in their high levels of effectiveness and flexibility and their standard operation. Rounding out our range are systems tailored to specific customer requirements for individual work steps as well as fully automatic production lines and diverse services.

We consider the dialog with you to be of the utmost importance and are happy to talk with you about approaches to tackling the everyday challenges you face.

And we look forward to hearing from you. <



**Marc Schürmann,**  
Vice President Marketing, Sales & Service



# KOMAX WIRE – TWISTING COMPETENCE AND TWISTER FROM THE SAME COMPANY

## Production of twisted data conductors for Ethernet applications in automobiles

The production of twisted data conductors is a highly complex process. Komax Wire is a master of the process and has applied this expertise to develop specific options. When combined with the Alpha 488 S automatic twister, these options offer all the features needed for quick, reliable production of unshielded twisted pairs (UTPs).

The twisting of two individual strands to form an unshielded twisted pair (UTP) is an attractively priced solution for data conductors with respect to electromagnetic compatibility and to weight. Twisting the two conductors is the simplest way to reduce the mutual influence that electrical conductors have on each other. Many manufacturers favor this solution particularly because it can be carried out fully automatically.

### Economical solution based on a reliable concept

The monitoring of and effective intervention in the twisting process are indispensable to being able to produce a stable and high-quality UTP product. Komax Wire has been working intensively for more than a decade on understanding and mastering this highly complex process. Today we have extensive expertise that we share with our customers for the production of twisted pairs. With our new Alpha 488 S fully automatic twister in particular, we offer everything needed for fast, reliable and standardized UTP production.

### Quality features

Along with length of lay, conductor spacing and a wide variety of symmetry considerations, the length of the untwisted conductor ends is especially important. Data conductors with 100 Mbps (e.g., Ethernet BroadR-Reach®) require untwisted cable ends between 20 and 30 mm in length. Only precise compliance with the required dimensions can guarantee the requisite impedance values over the entire data link. However, this means the subsequent work steps must be precisely considered. For instance, the twisted pair must be able to be plugged in afterwards in any case.

### Specific options for Ethernet UTP production

We cater to these special requirements from the automobile industry with our carefully conceived lineup of options for the Alpha 488 S fully automatic twister. The option for short open (not twisted) ends allows an operator to achieve values less than 20 mm depending on the contact involved. Ideally and for the interest of a high level of process control, this option should be combined in the future with the option for orienting the contacts prior to twisting. This feature is the only way the operator can subsequently attach the contacts without incorrectly manipulating them. ◀

«Any company interested in wire twisting should simply contact Komax Wire. When it comes to the production of twisted conductors, Komax Wire has years of experience and competence. We are happy to share this expertise with our customers on the subject of Ethernet conductors in automobiles.»



**Daniel Politze,**  
Product Manager

### Your advantages

- Machines for UTP processing with reliable process control
- Solutions for demanding production of Ethernet BroadR-Reach® data conductors
- Twisting competence for more than 15 years



Option involving short open ends



Data conductor twisted fully automatically

# THE NEW GAMMA 263 S

**Functionality, reliability and efficiency all packed into a tiny space**



**Functionality, reliability and efficiency packed into a tiny space**

The Gamma 263 S enables fully automatic and gentle cable processing with a tiny footprint in the highly demanding automotive sector. It has an extremely compact and clearly laid-out design and is easy to use. The high production output and an optimum wear parts concept ensures efficiency throughout the entire service life of the machine.

## **Compact and user friendly**

The Gamma 263 S fully automatic crimp machine is compelling with its well-conceived engineering and tiny footprint. This compactness ensures an excellent overview of the production process as well as easy accessibility to the processing modules from all sides. With the quick opening function for the cover, the modules can be accessed much more quickly. All users can work ergonomically thanks to the extra low machine table. The TopWin user interface can be conveniently operated from the optional touch screen.

## **Sturdy and reliable**

The Gamma 263 S has been specially designed for operation in highly demanding work environments, particularly in the automotive industry. Superb repeatability with no quality losses is ensured by the optional hold-up device plus the extremely reliable Komax Wire swivel system with linear lowering function. The stainless steel tipping tray and the sturdy belt drive allow conductors to be gently handled 24 hours a day, seven days a week. Tough encoders made of metal and extra strong dampers transform the small machine into a reliable wire processing partner.

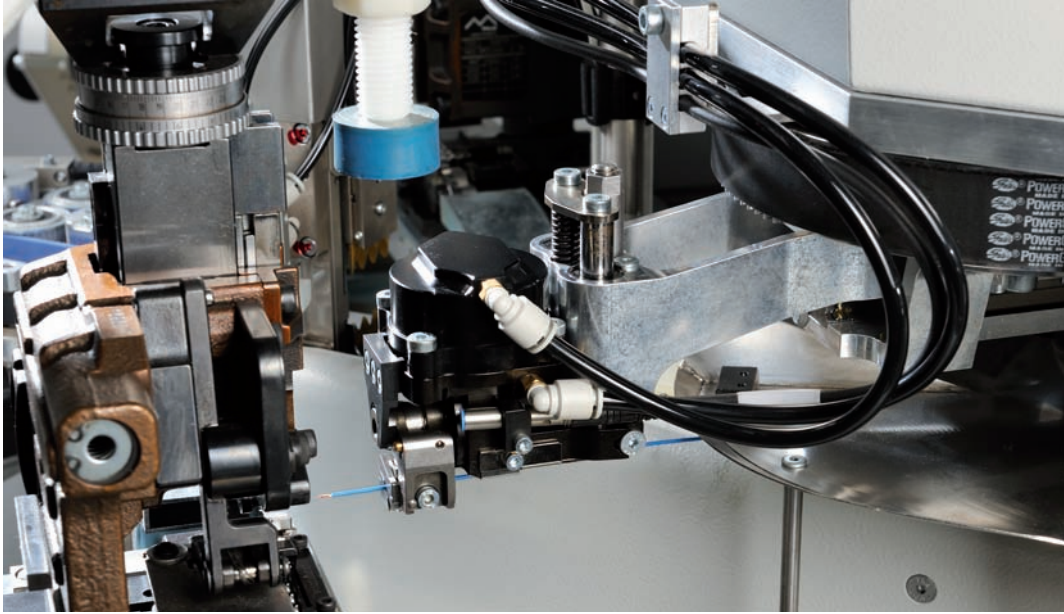
## **Economical thanks to carefully conceived wear parts**

A new approach to wear parts reduces machine downtimes. The guide parts are reinforced with ceramic, so they have to be exchanged only rarely. They are designed in a way that renders incorrect installation impossible. That means installation is quick and uncomplicated.

«The Gamma 263 S is ideal for customers looking for a reliable and attractively priced machine for fully automatic wire processing in the highly demanding automotive sector. This model's carefully conceived and perfected design enables processing that is efficient yet also ultra-gentle.»



**Daniel Politze,**  
Product Manager



#### The reliable swivel system

The belts in the belt drive are durable and can simply be turned around if need be. This feature increases the service life. With its fully automatic processes, the Gamma 263 S achieves a large output rate yet entails quite low investment costs.

#### Reliable Komax Wire crimp technology

The crimp technology made reliable by the mci 712 and mci 722 crimp presses incorporates all Komax Wire quality standards. In other words, most commercially available contacts can be processed with a maximum crimp force of 20kN at variably adjustable speed with use made of the double stroke feature. Integrated CFA/CFA+ crimp force analysis conducts absolute measurements of the crimp force even when the crimp tool is subject to non-symmetrical loading. In addition, the tried-and-tested mci 765 C seal module can be integrated seamlessly into the work process on one machine side.

#### The best in quality control

All quality control systems available from Komax can also be integrated into the Gamma 263 S. The motorized Q1210 precision pull-out force measuring instrument measures pull-out forces from 20 to 1000 N at a defined pull-out speed and all its features are fitted fully into the TopWin user interface.

The Komax 341 crimp height measuring instrument can measure contacts up to a height of 8mm. With crimp height adjustment incorporated into the crimp presses, the value is subsequently improved, thus eliminating the need for a manual correction of the desired crimp height. Conductors can be identified reliably and error-free with the bar code scanner.

The Komax 345 microscope provides a precise view of strip and crimp quality even in extremely small-gauge cables.

#### Fully developed marking technology

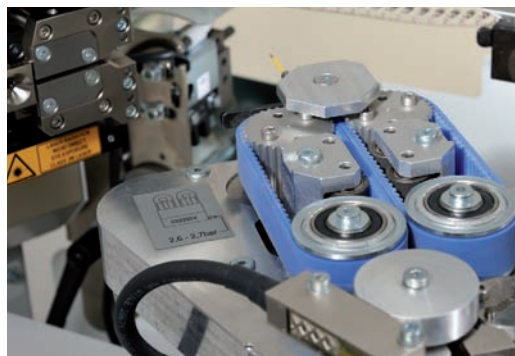
The marking technologies available at Komax Wire can be pre-connected using well-conceived interfaces. You can select from the complete ims 295 family, which carries out black as well as multicolor marking, and the k26 hot stamp marker.

#### Extensive choice of options

Komax Wire offers suitable options for a myriad of special applications. The sales team is happy to provide advice about everything from the addition of small-gage-wire processing, the installation of a pre-feeder for especially gentle wire feed, the incorporation of an existing production network and much more. <



#### Intuitive and user-friendly operation



#### Optimized wear parts design for the belt drive

### Your advantages

- Small investment yielding a high piece output
- Ideal combination of process control, reliability and efficiency
- Optimized wear parts design
- Processing that is gentle on the cable
- Compact and user friendly

# PROCESS QUALITY AND QUALITY CONTROL

## The suitable solution for every application

Process quality and quality control are becoming increasingly important in the production process. Komax Wire is constantly developing new solutions to make monitoring more reliable and easier to use. Recently Komax Wire put two innovative solutions on the market: SQC (Strip Quality Check) and ACD (Automatic Conductor Detection). Further products launched by Komax Wire include the high-performance Q1140 spark tester and the SL SBL micro A, a compact micrograph lab.

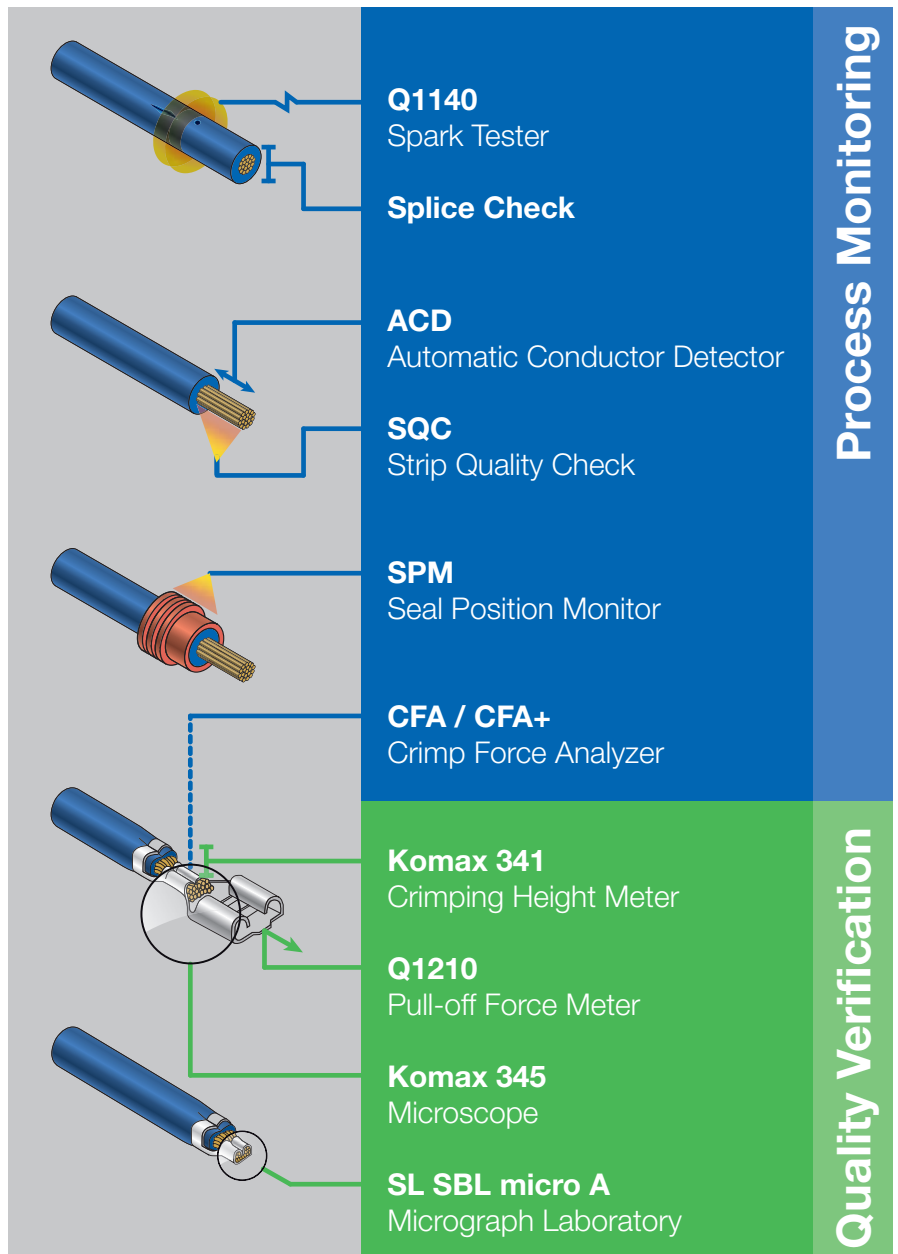
### Quality tools for fully automatic crimp machines

The market is constantly demanding new materials and processes owing to the trend toward miniaturization and toward increased costs and efficiency. To meet these diverse demands, Komax Wire constantly comes up with new and innovative solutions. The following overview describes the current processing and verification devices. In the extensive Komax Wire range, there is a suitable solution for every application.

«It is important that quality control innovations satisfy market demands promptly, precisely and in a customized manner.»



**Chris Schnellmann,**  
Product Manager



**Overview of process monitoring and verification devices**





**The new Q1140 spark tester can be installed on the Komax Wire processing machines Alpha 355, 355 S and 356**

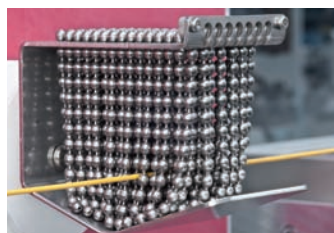
#### Q1140 spark tester

The new Q1140 spark tester is the successor of the reliable K371. The completely integrated Q1140 insulation test device measures the thickness of insulation during the production process. Speed is not reduced by the wire processing machine during these measurements thanks to the high speed of processing.

The cable being tested is guided through a high-voltage electrode. This electrode applies a test voltage (5 kV or 10 kV) to the cable. If the cable insulation is defective, a short-circuit occurs between the electrode and ground. The damage is reported to the wire processing machine. The defective cable is automatically ejected; the follow-up production of a cable to replace the defective one is also carried out automatically. This completely integrated test device conducts the tests fully autonomously. There is no need for the machine operator to intervene.

#### Micrograph labs with the new smart vision evaluation software

The line of micrograph labs has been further expanded. The reliable SL SBL automatic S lab with its extremely short throughput times and automated process sequences is now being joined by the new SL SBL micro A module and the smart vision evaluation software. The automatic process sequence reduces the variable influencing factors associated with the machine operator. The smart vision software provides the customary basic measuring functions such as distance, area and angle but also makes available special capabilities such as symmetry measurement and configurable guided measurement sequences. The modern and intuitive design of the user interface makes image evaluation easy and reliable.



**High-voltage electrode in the Q1140**

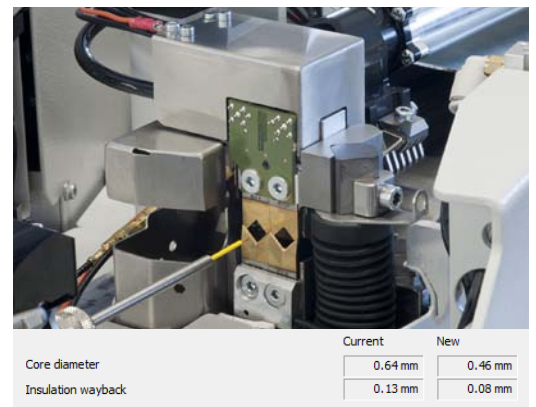


**SL SBL micro A micrograph lab with automated process sequences**

#### ACD with expanded functions

The automatic conductor detector (ACD) has been developed to meet the tougher requirements in car making for the processing of copper and aluminum conductors. Incision values must be optimally set when stripping is done with V blades – to ensure a clean cut surface, there must be no or only minimal contact with stranded wires. The ACD reliably indicates whether stranded wires are being touched. The quantity of rejected material in bad part separation varies with conductor quality, blade condition, incision values and the ACD parameters that are set.

A new software function was developed to assist operators in selecting suitable incision values. At the press of a button, the machine carries out a sequence of stripping operations fully automatically and then suggests incision values. Operators can accept or reject these values. The new function helps operators find optimum incision values and prevent unnecessary rejects from going to bad part separation. <



**Incision monitoring (ACD) with new function for selecting suitable incision values**

#### Your advantages

- Monitoring of insulation during production (Q1140)
- Automatic determination of incision values (ACD)
- Easy and reliable image evaluation (micro A)
- Traceability of quality data (smart vision)

# OPTIMUM PRODUCTION CONTROL FOR HARNESS MANUFACTURERS

**Modern production control thanks to the KomaxCAO – the manufacturing execution system (MES) for the wire processing industry**

One key factor of success is to be able to respond quickly and flexibly to customer demands and to economically produce a variety of versions with small batch sizes. KomaxCAO helps harness manufacturers optimize ideal production logistics.

## **KomaxCAO – the ideal MES for harness production**

The KomaxCAO is a highly efficient manufacturing execution system (MES) geared to meeting the needs of harness manufacturing. KomaxCAO is a versatile performer. Its range of uses extend from the networking of individual cutting machines to handling production control at large companies equipped with dozens of cutting machines and manual work stations. Thanks to the modular design, the scope of functions can be tailored exactly to the needs of an individual production facility.

## **Easy to install and quick to master**

KomaxCAO is as simple as can be to install. Database and server are installed in just a few work steps; no complicated system configurations are required. Staff from the worldwide Komax Service Network is available at any time to help customers put the KomaxCAO software into operation or to learn how to use it.

The next section will present several examples of the wide functional scope of this product and its extraordinary capabilities.

## **Setup optimization**

One main goal of the KomaxCAO is to boost efficiency in cutting operations, the cost-intensive part of manufacturing. Even the basic version has an ideally arranged distribution of jobs on the machines, whereby this step must be done manually. With setup optimization, job distribution is fully automatic. Since the system has exact knowledge of the states in production and the possibilities and resources of each machine, the jobs are sequenced and distributed in a way that minimizes setup costs and ensures that job deadlines are met. The system detects operational failures itself and compensates for them fully automatically.



**Modern production control thanks to the KomaxCAO**

## **Integration of micrograph laboratories**

With product quality requirements growing ever tougher, an increasingly common demand is that micrographs be made and archived. KomaxCAO offers optimum support for these procedures because it actively demands the making of a sample crimp and puts a label on it for identification purposes. Production is not enabled until the associated test is passed. The measured results and micrographs are saved by job so the taking of quality measurements can be proven seamlessly later on.

## **OEE analysis**

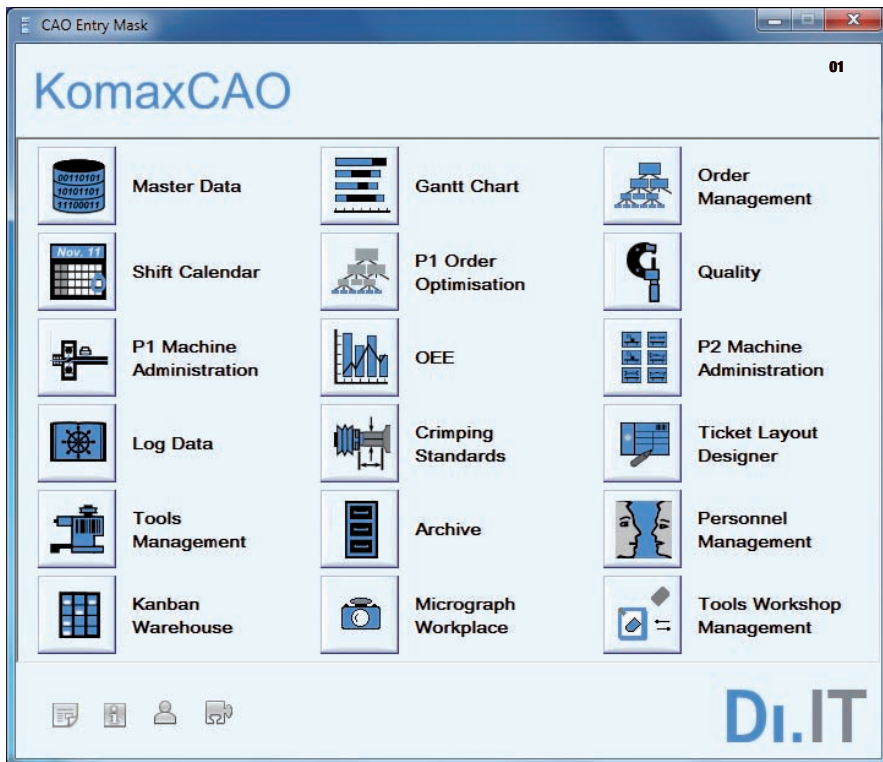
Information such as duration of production, conversion times, produced quantities or rejects are collected in log data and provide the basis for calculating overall equipment effectiveness, abbreviated OEE. The numbers acquired allow conclusions to be drawn on the causes of machinery downtime. They render machines, facilities and shifts comparable, thus leading to continuous optimization by way of analysis. The OEE is calculated individually for each machine and shift.

«The principles of lean production are increasingly shaping production in the wire processing industry. The object is to boost flexibility so as to improve productivity and readiness for delivery and to do so without any loss of quality.»

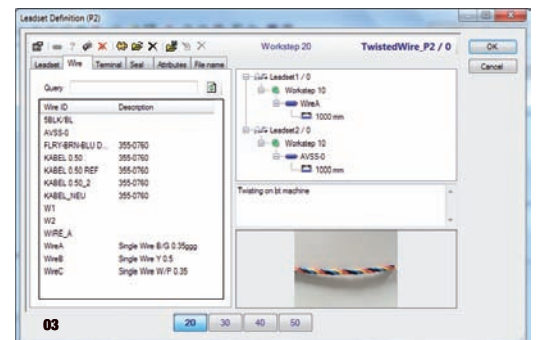
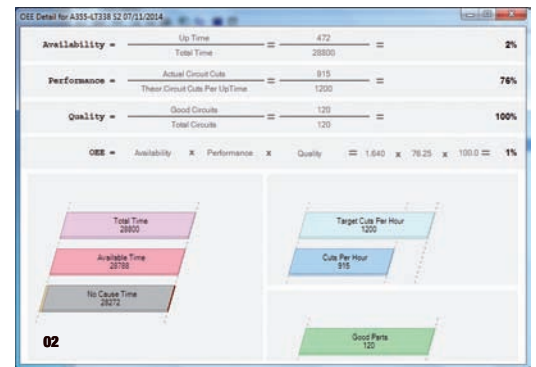


**Mirko Bulinsky,**  
Product Manager





- 01 The control center: KomaxCAO basic and optional modules  
 02 Results of an OEE analysis  
 03 Definition of a complex article entailing multiple work steps



### Kanban production logistics

Besides supporting production according to the push process, KomaxCAO also accommodates needs-based Kanban production. The Kanban warehouse is electronically depicted, thus enabling the inventory to be managed trouble-free. The Kanban process helps to boost production efficiency substantially. Depending on the Kanban scale, multiple jobs may be able to be combined and sent jointly to the cutting machine. This approach eliminates multiple changeovers, and the machine is in production mode longer.

### Integration of P2 (preliminary production)

P2 (preliminary production) is defined as the production area downstream from the cable cutting area. Various manual tasks are performed in the P2 area. Here are some examples of the machines you encounter there: bench top presses, manual twisters, splicers, injection molding machines for attaching seals, etc.

In the KomaxCAO, articles can be recorded that are needed for production in any number of work steps. The system then guides these articles automatically through production from one work step to the next. Production progress can be checked at any time from the production control center. Each batch is given its own individual label for identification purposes. KomaxCAO knows the delivery times and prioritizes the work steps in such a way that no delays occur.

## Your advantages

- Maximum product quality thanks to standard procedures and reproducible processes
- Optimum distribution of jobs to achieve the highest possible productivity
- Maximum efficiency thanks to implementation of optimum production logistics
- Traceability of production for quality or OEE purposes
- Highly adaptable to the needs of any factory operation

### Tool shop, tool management

Tool management in the KomaxCAO controls all processes in the tool room such as issuing, return or maintenance and generates complete and seamless documentation. All data is archived long-term and is part of quality documentation. In daily operations, KomaxCAO tool management helps obtain quick answers to a host of questions, e.g.:

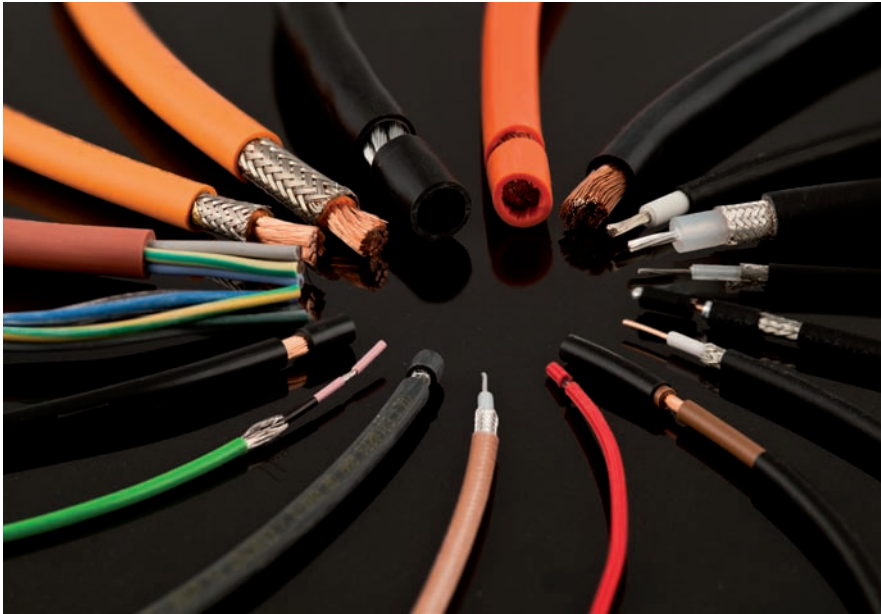
- What is the current maintenance status of the tools?
- Which tools are currently due for maintenance?
- Where is a certain tool currently located?
- Which tools are in circulation and how are they being used?
- What is the tool's error/failure record?

### ERP integration

The KomaxCAO is open to interfaces on the shop floor and therefore suitable for depicting the entire process in a homogenous system and for documenting all facets of the process. Through integration with SAP and other ERP systems, the data of the KomaxCAO is accessible at all business levels and can be used for making decisions. <

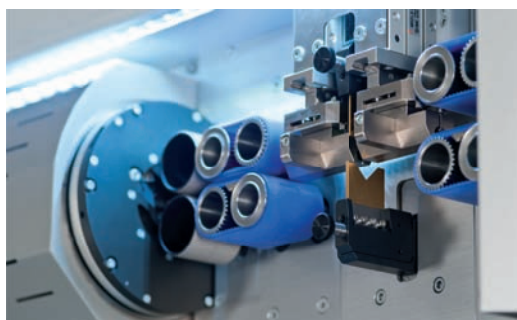
# KAPPA 331 – HIGH QUALITY COAXIAL CABLE PROCESSING

## Modular cut and strip machine with integrated rotating blade module



### Processing range

The Kappa 331 is a cut and strip machine with rotating blades. The rotation module enables precise, multi-step stripping of round, multi-layer cables such as, for example, coaxial and triaxial cables. The integrated length measurement system, the cable guide principle and the new operator guidance system all lay ideal groundwork for maximum processing precision and fast conversion. Even small batches can be produced economically.



**Precise and flexible processing that is gentle on the cabling thanks to module with rotating blades, length measurement and roller or belt drive**

«The quality requirements placed on stripping machines have become increasingly tougher in recent years. Reproducible precision in cable processing is enormously important in industry and in the telecom/datacom sector. The Kappa 331 offers new possibilities for processing coaxial cables efficiently and in unsurpassed quality and precision.»



**Martin Bossart,**  
Product Manager

The Kappa 331 expands its operational spectrum in the cross section range of 0.22 to 35 mm<sup>2</sup> and for specific applications, up to 50 mm<sup>2</sup>. The machine is available as a universal machine with swivel guide or as a universal/coax machine with split guides.

### Kappa 331 – flexible and precise

The module with rotating blades cuts precisely into single-layer or multi-layer cables with thin layers, shields or braided insulation. The length measurement system is integrated close to the cutting head, thus ensuring:

- Precisely positioned incisions by the rotating blades
- Reproducible and exact cable lengths even with inevitable roller or belt wear
- Wire slip compensation

High-performance drives with a roller or belt drive transmit forces optimally for the widest variety of sheathing. The applied pressure is optimized for transport and stripping. This feature is gentler on the drive unit and prevents the deformation of the cable while in turn increasing stripping quality and minimizing maintenance costs.

### Use as universal/coax model

This model is optimized for the precise processing of demanding conductors with stripping lengths of up to 60 mm. The highly precise rotating cutting unit, the independent length measurement system and the symmetrical layout of drives and blades combine with the split guides to create optimum conditions for this task.

There are several advantages to a split guide that opens automatically:

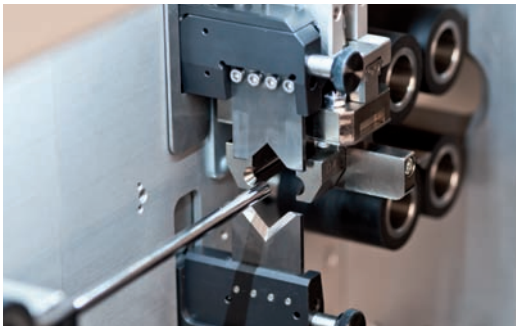
- Highest processing quality due to optimum support of the cable during the stripping process
- Removal of pulled-off insulation from the cable guide for reliable further processing of inner cable layers
- Blades cleaned by intelligent sequence control system

### Use as universal model

The universal model with swivel guide offers the broadest processing range. With this machine you can easily program and precisely process short and long stripping lengths, individual conductors, sheathed conductors, coaxial cables and other multi-layer cables. An inkjet marks the cable near the blade to minimize the number of incisions. Numerous accessories and options expand the processing range even more, e.g., the slit unit or the flat ribbon processing up to 16 mm.

### Optional split guide on the right

The modular machine design allows split guides to be used to the right side of the cutting head instead of the fixed guide. The split guides support the free end of the cable during the stripping process and open immediately after a full strip to ensure the reliable disposal of the pulled-off insulation. This setup allows access for the further processing of inner cable layers.



Optional split guide for Kappa 331

### TopTouch Kappa 14.3 – new interactive design for the Kappa 3xx series

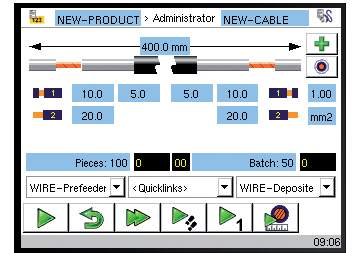
The user interface for the Kappa 3xx series was revised in Version 14 and is highly compelling. It features controls that are even more intuitive than before plus a multitude of programming possibilities. The new interactive design incorporates a number of suggestions from users. Easy stripping tasks can be defined and produced now with a minimum of previous knowledge. If you know one Kappa, you know them all.

The optimized user interface has four main features for quick setup and conversion:

- Complete entry of a product on a single page
- Quick definition of a product using the “+” button
- Automatic calculation of the incision values upon the entry of the cross section
- Quick access to key parameters such as speed, upstream devices, etc.

### Expansion possibilities to maximize flexibility, safety and efficiency

The Kappa 3xx cut and strip machines offer a full range of expansion possibilities. The Kappa with TopWin supports processing of sequences and parts lists and has a production logistics module that ensures safe, efficient production. It is possible to work through job lists in independent operation as well as network operation because all Kappa 3xxs can be operated in networks. <



The new TopTouch 14.3 offers user friendly operations for simple and more complex stripping tasks



The Kappa 331 is compelling with its broad range of cable processing

### Your advantages

- Broad processing range
- Stripping of demanding cables
- Quick conversion thanks to rotation unit
- Intuitive operation and a variety of programming possibilities
- Choice of belt or roller drive
- Excellent value for the money



# ADDED VALUE FROM MADE-TO-ORDER SOLUTIONS

## Optimum implementation of individual requirements

Thanks to its years of experience in wire processing, Komax Wire can understand its customers' individual needs and implement them. The broad selection of platforms is an important factor in giving customers the optimum solution to fit the complexity of the application and the production volume.

### Value added – based on solid expertise

The need for individual applications can be triggered, for example, by a special conductor material or the associated processes and insertion operations. Based on these individual customer requirements, Komax Wire develops special solutions that provide customers with decisive added value. Komax Wire has been a leader in wire processing for nearly 40 years. Value-added engineering at Komax Wire builds on this experience. Our competence in all aspects of wire processing from wire handling and classic types of processes to complex specialized applications is a key factor in our value added business.

### Expansion of value added competence and worldwide proximity to customers

Komax Wire continues to expand its scope of services in value added business thanks to its acquisition of competence, for instance, through its takeover of SLE quality engineering. As a result, the customers from Komax Wire receive even more comprehensive solutions from a single source. Komax Wire makes available sales and service support in about 60 countries through subsidiaries and independent representative offices. In Switzerland, Germany, the United States and China, Komax Wire also has competence centers for value added engineering, which carries out the customer-specific projects.

### A strong team

On the basis of the customer-specific requirements, the value added experts from Komax Wire conduct feasibility studies and generate the associated design proposals, functional modules and concept descriptions, including detailed offers. The customer benefits from the experience Komax Wire has in process and project management across the board, from consulting and test runs with customer material to the realization of projects. The team consists of experts from the fields of mechanics, electronics and software, project

«Demands often vary greatly within an industry. Based on these customer requirements, Komax Wire develops special made-to-order solutions that add value to the overall process and thereby optimize profitability.»



**Matthias Schulthess,**  
Director Business Development

management and service. They all have years of experience in wire processing and in value added engineering.

### Broad range of solutions

Another key factor is the broad range of platforms on which Komax Wire can draw. That means it can implement the economically optimum solution to fit the complexity of the application and the production volume involved.

Its lineup of customer-specific applications comprises the following basic machines:

- Cut and strip machines (Kappa)
- SL Compact system
- Fully automatic crimp machines (Gamma, Alpha, Zeta)
- Systems (Lambda 921 and 96x series) <

## Your advantages

- Has solid process and project expertise
- Gives competent advice to customers
- Carries out feasibility studies
- Provides complete solutions from a single source
- Simplifies process by reducing interfaces
- Offers worldwide on-site competence in value added



### Value added competence centers in America, Europe and Asia

- 1 USA / Komax Corporation
- 2 Switzerland / Komax AG
- 3 Germany / Komax Deutschland GmbH
- 4 Germany / SLE quality engineering GmbH & Co. KG
- 5 China / Komax (Shanghai) Co., Ltd.

# INCREASED EFFICIENCY FOR CONTROL CABINET WIRING

## Adapting the degree of automation to reduce costs and increase quality

Control cabinet builders face a number of challenges. Ever tighter delivery deadlines, lower prices, maximum quality and a lack of skilled labor are just a few of them.

A customized solution can greatly accelerate not just wire termination but also control cabinet wiring. After all, the consistent use of manufacturing data considerably reduces the risk of wiring errors.

### Challenges in control cabinet construction

As in many other industrial segments, control cabinet builders are expected to meet ever tighter delivery deadlines – and to do so at lower prices and in top quality. Companies that best succeed in meeting these requirements enjoy a significant competitive advantage in the fight for orders and market shares.

In conventional wiring, the wirer stands in front of the already prepared control cabinet with a number of reels of wire, labels, end sleeves and other contact parts plus several tools. He then carries out the work steps below for each of the several hundred wires in the cabinet:

- Read diagram
- Strip wire
- Crimp ferrule
- Attach label

- Wire assembly
- Cut / strip wire
- Crimp ferrule
- Attach label

Termination and wiring of the control cabinet account for the lion's share of labor costs. The many manual work steps also pose the risk of errors, which then have to be detected and remedied in the final inspection.

### Reduced manufacturing time and increased quality – a contradiction?

Wiring lists are available in electronic form in many cases and serve as the basis for this approach. They are automatically converted to the correct format and sent to the wire processing machine. This processing results in ready-to-install, individually labeled cables or harnesses. Even less qualified personnel can wire a control cabinet easily, quickly and free of error without a wiring diagram.

### Degree of automation adapted to the customer's needs

By taking a holistic view of the current situation and the situation desired in the future, Komax Wire can offer its customers a solution tailored to their needs. <

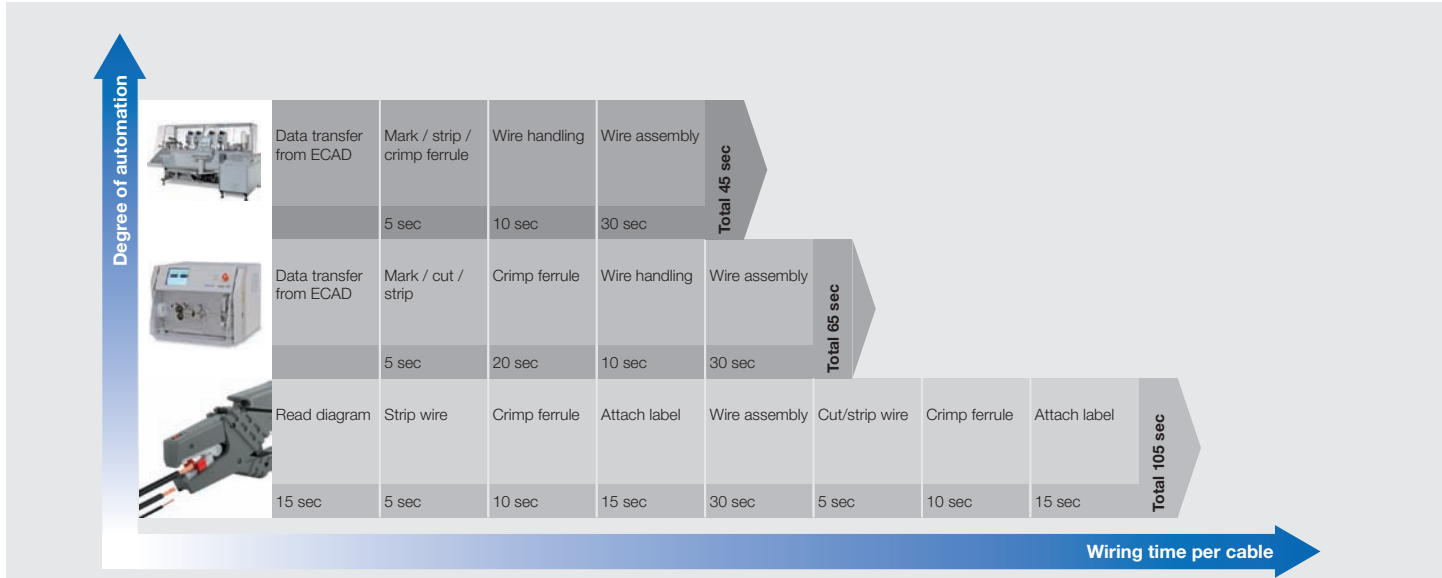
«What do you do when customers insist on tighter and tighter delivery deadlines? Komax Wire offers its customers optimally adapted solutions to further reduce throughput and manufacturing times for control cabinet wiring.»



Roland Liem,  
Product Manager

### Your advantages

- Total solution geared to customer needs
- Short production and throughput times
- Even less qualified personnel capable of wiring control cabinets
- Massive reduction in production costs
- Increased quality



Degree of automation adapted to the customer's needs

# FLEXIBLE MARKING POSSIBILITIES FOR INDUSTRY AND MAKE-TO-ORDER MANUFACTURING

## Direct inkjet interface: A simple and economical marking solution for the Kappa series

Cable marking with inkjet has matured into a versatile and flexible standard process. Customized interfaces are available today for a variety of requirements, from entry-level solutions to fully integrated models with networking capability. The direct inkjet interface is new in the range and enables the use of the most important marking functions at an attractive price.

### Advantages of cable marking

Marked cables have a number of advantages for systems, control cabinets or devices:

- Cable identification
- Marking of the ends of cables for reliable component insertion
- Allows use instructions or safety instructions to be applied
- Traceability
- Branding with trademarks or company logo

### Requirements in industry

Different requirements must be kept in mind in actual practice:

- Correct allocation of marking content to the cable. Data integrity is ensured if marking and cable data come from the same database.
- Short conversion times are the key to productivity. The best way to ensure fast conversion is if the setup requires neither the text to be recorded at the inkjet nor the head position to be shifted (centering).
- Marker integration is a prerequisite for networked operation.
- Marking functions: positional marking, distributed marking, alternating direction of marking.
- A short incision in the cable reduces waste and costs.
- Short cycle times.

### The TopWin interface: Maximum integration

The Komax TopWin inkjet interface meets all these demands in an optimum way: TopWin offers job processing by the manufacturing execution system (MES), automatic sequential production and just-in-time production. The TopWin interface is available throughout the Komax range and ensures that the markers can be used with all machinery and also beyond a generation change.

### New: direct inkjet interface as the golden mean

Komax Wire is now making available a new interface for the Kappa Cut & Strip series. It provides the functions that are most important in actual practice at an attractive price. The inkjet is controlled from the TopTouch software of the Kappa machine. The data for text and cable are entered at the touch panel and deposited in the database with the other cable parameters. The direct inkjet interface allows the inkjet models Komax ims 295 and Wiedenbach WP 405 and WP 407 to be used.

### Basic I/O for the inkjet interface: Keep it simple

The basic I/O interface uses the encoder and print-go signal to mark texts from the marker buffer positioned on the cable. Most markers can be used with an appropriate cable. Texts are entered or selected at the inkjet. <

«The design and the quality of the inkjet interface for cable marking are crucial for determining customer benefits. User-friendly marking functions and data integrity translate into substantial added value for operators.»



**Reinhold Vollmer,**  
Product Manager



**Kappa 310 with direct inkjet interface**



**Kappa 350 with TopWin inkjet interface**

## Your advantages

- TopWin for optimum flexibility in networked operation
- Direct inkjet interface for local operation with data integrity
- Basic I/O connection for free selection of markers



# THE KOMAX WIRE PORTFOLIO OF SERVICE PRODUCTS

## Customized service packages to meet all customer needs

Komax Wire provides just the right services for all phases of a machine's life cycle. The extensive portfolio of service products contains service packages that cover the individual needs of the customers. These needs may involve feasibility tests prior to a purchase decision or extensive services for the machine while it is in operation.

The services extend from advice prior to the purchase of a machine and on-schedule commissioning to the quick delivery of spare parts. Drawing on the extensive portfolio of services, Komax Wire can put together customized packages of services. Depending on needs, the packages can be limited to basic products or can incorporate further products to optimize value.

### Consulting services and feasibility test

Even prior to the purchase of machinery, Komax Wire helps its customers select the right machine and a service package geared to their individual needs. Feasibility tests are conducted to determine which machine would be best at processing the desired products efficiently and reliably.

### Installation and setup

Komax Wire and the service representatives ensure the on-schedule commissioning of every Komax machine. Professional commissioning ensures that the machine is ready for production as quickly as possible.

«Komax Wire is continuously expanding its portfolio of service products so that we can offer our customers optimum services tailored to their needs. Drawing on this extensive portfolio, we can put together customized service packages covering the entire service life of our customers' machines.»



Stefan Bachmann,  
Product Manager Service

### Training and support

Customers can benefit from our expertise by taking the training offered by Komax Wire. The superbly trained service staff from Komax Wire is happy to share its knowledge in professional, modular training with operators and maintenance technicians at the customers' premises in connection with production support or at our sales and service hubs.

### Ensuring efficiency

The services from Komax Wire for ensuring efficiency are geared to performance improvement and the optimum use of the machine. They include measures for a long service life such as agreements guaranteeing the best possible use of spare parts and wearing parts as well as production analyses to minimize downtimes and to maximize production output.

### Life cycle management

Komax Wire makes available customized maintenance and service agreements so customers can organize their machine maintenance trouble-free. Under these arrangements, Komax Wire conducts preventive maintenance and regular inspections on the machines and calibrates quality monitoring devices. These actions guarantee the proper functionality of the machine and its accessories for the entire life cycle. <

	Consulting and feasibility testing	Installation and setup	Equipment integration	Efficiency assurance	Life cycle management
Level 1	<ul style="list-style-type: none"><li>• Feasibility Test Wire</li></ul>	<ul style="list-style-type: none"><li>• Installation</li></ul>	<ul style="list-style-type: none"><li>• Basic &amp; Advanced Training</li></ul>	<ul style="list-style-type: none"><li>• Technical Support</li><li>• Spare / Wear Parts</li></ul>	<ul style="list-style-type: none"><li>• Preventive Maintenance</li></ul>
Level 2	<ul style="list-style-type: none"><li>• Feasibility Test Crimp</li></ul>	<ul style="list-style-type: none"><li>• Operation Support</li></ul>	<ul style="list-style-type: none"><li>• Specialist Training</li></ul>	<ul style="list-style-type: none"><li>• Breakdown Plan</li><li>• Parts Contract</li><li>• Recommended Spare Parts</li><li>• Software Functionality</li></ul>	<ul style="list-style-type: none"><li>• Maintenance Contract</li><li>• Relocation Services</li></ul>
Level 3	<ul style="list-style-type: none"><li>• Service Consulting</li><li>• Feasibility Test Block Loading</li></ul>	<ul style="list-style-type: none"><li>• Production Support</li></ul>	<ul style="list-style-type: none"><li>• «Train-the-Trainer» Program</li></ul>	<ul style="list-style-type: none"><li>• Quality Certificate</li><li>• Stock Optimisation</li><li>• Upgrade Kits</li><li>• Production Analysis</li></ul>	<ul style="list-style-type: none"><li>• Service Contracts</li></ul>

Comprehensive portfolio of service products

### Your advantages

- Customized services across the entire life cycle of the machine
- Advice and process verification prior to purchase
- Maximum availability of the machine
- Improved production efficiency
- Certified and motivated employees

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