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Imprint

NEWS: Komax AG customer magazine

Published by: Komax AG, Industriestrasse 6, 6036 Dierikon, Switzerland

Printing: Famo AG, Alpnach / Copyright: Komax AG

TECHNOLOGY PARTNERSHIPS THAT HELP YOU GET AHEAD

Dear Readers,

Cultivating partnerships with customers and representatives is an elemental part of our business policy. It extends far beyond mere cooperation, allowing for no compromises in the pursuit of joint success. In this issue, we present a technology partnership that we have with TE Connectivity. This leading international technology company is one of the most important suppliers to the automobile industry.

For about thirty years, we have been teaming up with TE Connectivity to develop solutions that benefit our customers and OEMs. A typical example of a joint advance is the fully automatic processing of the TE Connectivity connector for aluminum wires, a type of wire that is increasingly important in the automobile industry. Aluminum connectors from TE Connectivity can only be processed on machines from Komax.

A further example is the technology partnership with iTAC Software AG located in the town of Montabaur, Germany. This firm specializes in Internet-capable information and communication technologies for the manufacturing sector and our partnership with it has given rise to a manufacturing execution system (MES) geared to meet the requirements of the wire processing industry.

In this issue we also present new solutions for the automation of processes that until recently have only been able to be performed manually. A further highlight is the newly established Komax Academy. This worldwide training system is unique in our industry and offers professional trainings geared to the participants' position. With its standardized training modules and modern instructional aids, the Academy ensures certified competency for your employees.

I hope you find this issue to be an engaging and enjoyable read.



Marc Schürmann
Vice President Marketing, Sales & Service



40
YEARS
CUTTING
EDGE

KABATEC – THE BRAND TO TURN
TO IN TAPING TECHNOLOGY

COMBINING FORCES FOR INNOVATIVE SOLUTIONS

In June 2016, Komax took over Kabatec GmbH & Co. KG, further boosting its capabilities in taping technology. For 2017, the Komax Group plans to merge Kabatec and Ondal Tape Processing GmbH, a firm Komax acquired early this year. The two enterprises are located in Fulda, a district in the German state of Hesse. With their merger, the vast experience of both can be brought to bear much more effectively and will accelerate the next advances in innovation. Following the merger, our customers will profit from an optimum product portfolio featuring standardized taping machines and special solutions under the brand name Kabatec.

KOMAX DE MÉXICO

EVEN CLOSER TO CUSTOMERS WITH OUR NEW FACILITY

In September 2016, the construction of Komax De Mexico was completed at the new site in Irapuato, Mexico. Located in the center of Mexico and the fast growing automotive market, the site will combine sales, service, the Komax Academy and production operations for TSK products.

The city of Irapuato is situated in the Bajío region of the federal state of Guanajuato. The region is already home to several vehicle plants, with new operations being added frequently. With the ongoing growth of the automotive manufacturers, most of their major suppliers – and our direct customers/prospective customers – are represented in the area as well.

The new building has room to accommodate sales and service operations as well as product training. Once the local training organization is set up, the Komax Academy will offer programs for the markets of Mexico and Central America. Many customers view this as a significant benefit as their employees can travel trouble-free and without a Visa – oftentimes even by car.

Expertise for customer-specific products

In the future, training will not only be provided for standard cutting machines but customer-specific products as well. This will also include taping machines, HSD and Fakra solutions. Komax customers can take their products/applications to Irapuato and our team of experts will provide support/guidance to select the most efficient solution to meet the requirements of their end clients.

A large production unit is also set up with the facility to support the increasing demand of TSK Innovations, a company situated in El Paso, Texas. The location is vital to ensure even faster response to meet the increasing demands and reduced design cycles in the automotive manufacturing segment.



KOMAX GROUP

SUCCESSFUL FIRST HALF-YEAR

We are pleased that the first two quarters of 2016 were so successful. That gives us an ideal point of departure for expanding our core business, wire, and for offering further solutions along the value chain.

There are various reasons for this success. One is that the automotive industry continues to be in fine shape. Another is that the number of vehicle wires being processed is growing steadily.

An even stronger position as a leader along the entire value chain

"The sale of Komax Medtech in the first half of 2016 increased our entrepreneurial freedom to expand our core business (wire)," explained Matijas Meyer, CEO of the Komax Group. "As a result, we continue to allocate significant resources to research and development and consistently seize opportunities to further develop our company.

"The acquisitions over the past six months are also important," Matijas Meyer added. "With the purchase of Ondal Tape Processing and Kabatec, for instance, we became the worldwide market leader in taping technology. That improves our position as global market leader along the entire value chain."

Bright prospects for the second half of the year

The Komax Group has a business strategy geared to long-term success and aspires to further strengthening its role as market and technology leader in the years ahead. Based on its excellent position right now, we expect the second-half result for 2016 to be of similar magnitude to its first-half result.

MARCUS SETTERBERG

NEW HEAD OF COMPETENCE CENTER TESTING

In August, Marcus Setterberg succeeded Thomas Lohwasser as Head of the Competence Center Testing. As a result he has also become a member of the Executive Committee of Komax Wire. Setterberg has already been working at Komax for nine years, a little more than the last two and a half years as Managing Director of Komax China. During this time, he gained valuable experience in the testing business. He oversaw the integration of TSK China into Komax China, so he is well networked within the TSK Group.

His successor at Komax China is Tim Jutta, a 39-year-old industrial engineer. Jutta worked for a German machinery manufacturer in China for more than eight years and in the railroad industry in Australia for four years.

The Executive Committee is delighted to have found such qualified successors for both positions and looks forward to a very pleasant and highly successful collaboration with both gentlemen. The Committee thanks Thomas Lohwasser for the work he has done over the past two and a half years and wishes him all the best for the future.



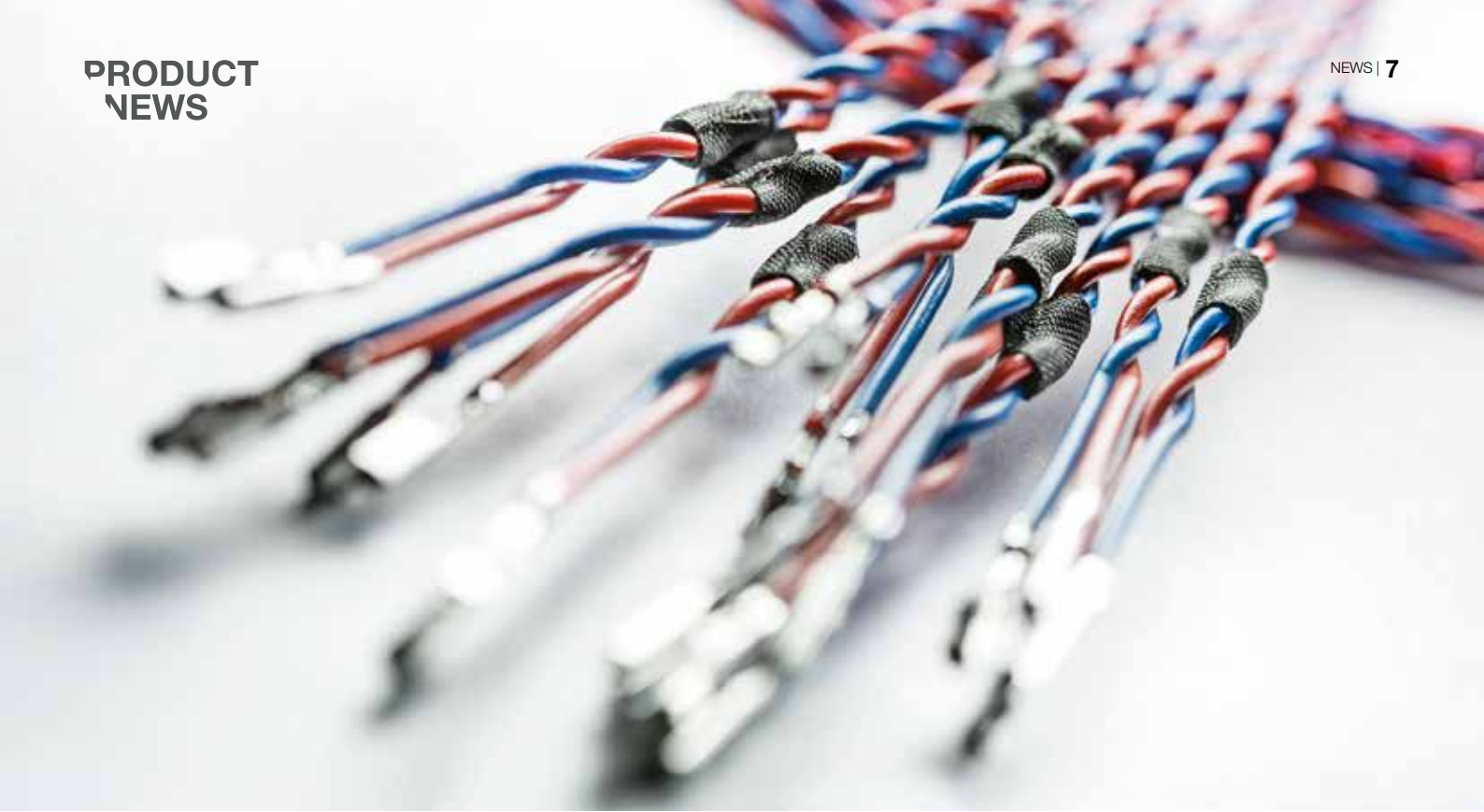
A close-up photograph of a metallic machine component, likely part of a wire twisting machine. The component is silver-colored with a brushed metal finish. The word "KABATEC" is printed in a bold, sans-serif font, with "KABATE" in red and "C" in black. Below the text is a thin red horizontal line. To the left of the text is a black handle. To the right is a black rectangular block with a red indicator light. The background is blurred, showing other parts of the machine and a blue and red wire.

KABATEC

SPOT TAPING UNIT FOR THE BT 188 T

INTACT TWISTING UNTIL ASSEMBLY

Our bt 188 T semiautomatic twisting machine has a useful new option that makes it all the more effective. An integrated spot taping unit automatically binds both ends of twisted wires with tape.



Even with the most careful twisting during production, there is a risk that the wire ends unwind during transport or assembly. This can reduce the positive characteristics of a twisted pair. Twisting of two individual wires to create one unshielded twisted pairs (UTP) is a cost-effective and optimum-weight solution for data cables with respect to electromagnetic compatibility. Twisting the two wires is the easiest way to reduce the mutual effects the electrical conductors can have on each other. The bottom line: Unwanted unwinding and enlargement of the open wire ends diminishes the quality of the data transmission.

Consistent quality up to final installation

The bt 188 T semiautomatic twisting machine itself assures an extremely high level of quality in the twisting of the two wires. In addition, it enables flexibly adjustable final lengths, pitches, wire cross sections and outer cable diameters. It automatically calculates the necessary cutting length based on the entered parameters. As a result, a new article can be set up with minimum use of test material and made ready for the start of production in no time at all. But how can this high level of quality be assured in the further work steps? Binding both ends of the twisted wires with tape is a simple solution and assures consistent quality from production to transport to final assembly.

An advance that came from taping technology

An integrated spot taping unit for our bt 188 T semiautomatic twisting machine was the first advance we developed jointly with Kabatec, our center of competence for taping technology. With this unit, taping can be done precisely and automatically on both wire ends at the same time. For this purpose, it binds the ends of the twisted wires with spot tape made of cloth or PVC. During the entire procedure, the position of the module remains in the wire axis at all times.

Our answer to ever tougher demands from customers

The spot taping unit can be mounted on the new bt 188 T semiautomatic twisting machine but also installed as a retrofittable option on existing systems. This is a very worthwhile investment because of the steadily rising demand for communication cables in automobiles and the ever more stringent quality requirements placed on these cables. With automatic binding, the tape position and thus the open end remains constant. This has a positive effect on quality.



New and unique: bt 188 T with fully automatic spot taping unit

KAPPA 315 AUTOMATIC CUTTING AND STRIPPING MACHINE

A NEWCOMER THAT IS A WELCOME ADDITION

Anyone who has been searching for an alternative between the Kappa 310 and 320 models will now hit pay dirt. The Kappa 315 cutting and stripping machine satisfies these requirements splendidly. It is highly efficient thanks to the simple and intuitive operation.

With its powerful cutting and stripping unit, the new Kappa expands the cross-section range to 10 mm², in other words to a range greater than that of the Kappa 310. Of course, it also has compelling features that make the Kappa product family so popular in general.

Quick, simple setup

Being so flexible to operate and control, this model can be set up for even difficult-to-process material quickly, easily and without tools. The innovative sensor assists the users by automatically detecting the cross section of a conductor. During production, the same sensor detects the wire end and stops the machine. This intervention reduces non-productive times to an absolute minimum. Setup is as quick as can be thanks to the intuitive and easy-to-learn TopTouch operator software.

Convenient connections to peripheral equipment

Consistent standardization allows easy connection of up to four peripheral devices such as prefeeding, marking and deposit systems. The Kappa has a USB interface for data backup, software upgrades, and the import of product and wire data.

The bottom line: All those interested in expanding their range of applications and processes will find the Kappa 315 an interesting entry-level machine in terms of price.



The Kappa 310/315/320 in comparison

	Kappa 310	Kappa 315
Wire cross section of stranded conductor	0.02 – 6 mm ² AWG34 – AWG10	0.05 – 10 mm ² AWG30 – AWG8
Flat cable processing	Optional 8 mm (0.32 in.)	Optional 12 mm (0.47 in.)
Short wire lengths	Optional 18 mm	Optional 30 mm
Max. wire transport speed	4.0 m/s (157.5 in./s)	2.0 m/s (78.75 in./s)
Automatic conductor diameter sensor (conductor detector)	Optional	Optional
Wire monitoring (cable detector)	Optional	–
Length measuring system	–	–
Drive system	Single roller with motorized closing axis	
Dimensions (W×H×D)	465×385×460 mm (18.3×15.2×18.1 in.)	465×385×460 mm (18.3×15.2×18.1 in.)



Kappa 320

0.05 – 10 mm ² AWG30 – AWG8
Optional 12 mm (0.47 in.)
Optional 30 mm
4.0 m/s (157.5 in./s)
Optional
Optional
Optional
510×380×470 mm (20×15×18.5 in.)



MICROLAB 10

COMPACT ALL-IN-ONE-CASE SOLUTION FOR MICROGRAPHS

It has never been so simple, fast and uncomplicated to produce micrographs – anytime and anywhere thanks to this compact all-in-one-case solution. Whether the task is cutting, grinding, etching or imaging: The MicroLab 10 can perform all relevant work steps and deliver an efficient quality assessment of crimp and splice connections.

Seamless quality control is an increasingly crucial factor for competitiveness. Micrographs are indispensable for the release of new crimp terminals and crimp tools. The mobile MicroLab 10 is a central component within modern quality engineering.

On-site analysis: at any time and in any location

The compact MicroLab 10 comes in a carrying case and is designed for terminals and conductors with a cross section of up to 5 mm². The samples are clamped into the holder in no time and just once for all work steps. A complete on-site analysis goes quickly because this lab comprises autonomous preparation, evaluation and documentation modules that are independent of each other.

Seamless intelligent documentation

The integrated USB digital camera with microscope handles the imaging and seamless documentation of the micrographs. The Smart Vision software is simple and easy to use and evaluates the micrographs quickly and precisely.

Early detection of quality shortcomings

With this all-in-one-case solution, users can produce a meaningful micrograph as a random sample whenever and wherever they wish. That yields real advantages because it allows quality shortcomings to be uncovered and expensive failures to be prevented early on-site.

ALPHA 530 WIRE PROCESSING MACHINE

EXPANSION FOR THE INDUSTRIAL SECTOR

High flexibility, fast response times and the production of custom wire harnesses for a broad clientele – these are three chief characteristics of our industrial customers. With the Alpha 530 and the newly integrated process modules, these customers now have an optimum machine available to them.

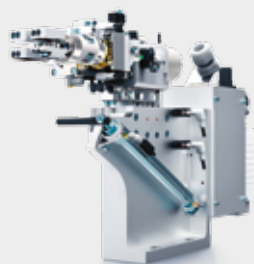
Smaller order sizes demand even shorter conversion times

The market segment covered by our industrial customers is extremely heterogeneous and consists of the widest variety of branches, e.g. metrology, mechanical engineering, household equipment and appliances or control cabinet construction. The needs of the respective sectors differ markedly and range from simple cables to complex, custom-designed wire harnesses.

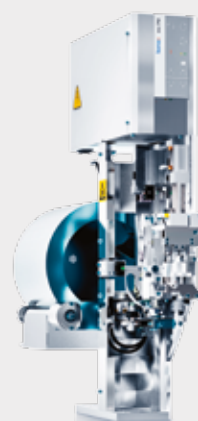
To address the requests of their respective clientele flexibly, our industrial customers need machines with extensive configuration possibilities. The job volumes are often small, too, because their clientele includes small and medium sized enterprises. These small job volumes, in turn, necessitate even faster conversion and even greater flexibility. After all, extensive conversion times and downtime cause costs to rise and reduce competitiveness.

Alpha 530 – the ideal base machine for the industrial sector

Industrial customers have a new and exciting choice. In the Alpha 530, they now have a machine available to them with characteristics that make it ideal for industrial applications: productivity and short conversion times, increased performance thanks to ultra-quick machine setup and operation, ultra-fast and efficient changeover of wires, crimp tools and terminal reels, and a choice of belt drive or roller drive. The Alpha 530 also has an extremely diverse spectrum of configuration possibilities: Process modules optimized for the industrial sector are now integrated and boost flexibility considerably.

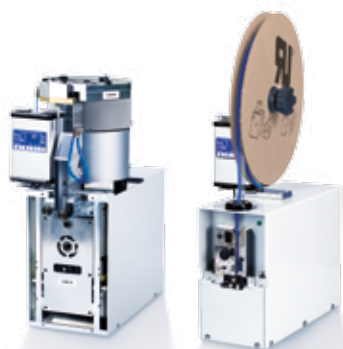


DC
DOUBLE GRIPPER MODULE



MCI 792
SLEEVE MODULE





AEH-LS/AEH-G
FERRULE MODULES



C1320
CRIMP MODULE



Four newly integrated modules

With the following four modules for the Alpha 530, we have taken important requests and ideas from our industrial customers and made them reality.

Integrated double gripper module

With this module, double crimps can be processed with ease. The ingenious rotary gripper brings together two wires, keeping them available for the following process. The wire gripper then simultaneously takes the two wires – arranged horizontally or vertically depending on the setting – and swivels them to the crimp module, where they are crimped with a terminal.

AEH-G/AEH-LS ferrule module

These modules can crimp ferrules 0.5-2.5mm² used e.g. in control cabinets. They are flexible and are controlled processing solutions for crimping of reeled or bulk ferrules on stripped wires.

C1320 crimp module

This is the new cost-effective model for a large number of crimp terminals. With a crimp force of 20 kN, it covers a variety of applications from different industrial segments: Even closed-barrel type terminals can be processed using a manually adjustable split cycle function. As an option crimp force monitoring is possible.

mci 792 sleeve module

This module reliably and efficiently inserts various types of sleeves on a single module. By the exchange of the application set, it can be retrofitted quickly for other types of sleeves.

The short conversion times of the Alpha 530 combined with the flexibility of newly integrated process modules provides ideal support to our industrial customers to tackle their daily challenges. These strengths make this model the machine of choice.

KABATEC GMBH & CO. KG, BURGHAUN

COMPELLING TAPING TECHNOLOGY

The acquisition of Kabatec GmbH & Co. KG lays important groundwork for our heavier concentration on taping technology. By combining our powers of innovation, we can further develop existing solutions while strengthening our overall range along the value chain.

Kabatec GmbH & Co. KG is a leading company in taping technology with years of experience. Located in Burghaun in the German state of Hesse, it has been cultivating a strategic partnership with Komax for several years. Kabatec's more than thirty creative and highly qualified employees have a broad range of know-how and years of experience in developing and producing high-performance cable and wire taping technologies tailored to customer needs.

Lasting durability and flexibility as absolute musts

Solutions from Kabatec are compelling for their efficient and cost-conscious taping and bundling of the widest variety of cable and wire types to meet the demands put on today's wire harnesses; specifically, protection from heat and mechanical abrasion through vibration as well as resistance to chemicals such as gasoline, diesel, oil, and coolants. In addition, the tapes used for taping and bundling also dampen noise (from rattling).

» MACHINE-BASED TAPE PROCESSING OFFERS SIGNIFICANT ADVANTAGES OVER CONVENTIONAL MANUAL TAPING «

There are five ingredients in Kabatec's recipe for success: consistent orientation toward customers, top quality, sustainability in production and service, custom advice, and absolute reliability. Its core competency includes the processing of adhesive and nonadhesive tapes on semiautomatic and fully automatic machines.

On the one hand the market is calling for optimum processing quality in terms of a long service life and safe, reliable functionality. Even after being put to years of hard use, the covering still has to look flawless and the wire harness has to perform all its functions. On the other hand, wire harnesses are supposed to remain flexible, be easily installable, and be able to resist movements and vibrations without mechanical wear.

KTR 10

Taping has never been easier!

Compact, user-operated taping machine for simple or pre-fixed cable harnesses.



KTR 100

The all-rounder

Program-controlled machine with numerous useful features for efficient cable harness production with a diverse range of taping tasks.



KTR 160

The perfect solution

Taping with differing overlaps within a winding step.



From manual device to automatic processing machine

Bundling today is still largely done in classic manual work procedures. By comparison, machine-based tape processing is compelling with its much shorter application time, reproducible quality, and reduced consumption of materials. In addition, it is more cost effective than the use of tubes.

Taping and bundling on a harness assembly board is amazingly simple with hand-held devices as the first automation step for reproducible quality. Constant tape tension and an ergonomic sequence of movements assure a uniform pitch and a wrinkle-free surface.

High-end Kabatec processing machines are the best way to assure the efficient manufacturing of complex wire harnesses and modules to meet the widest variety of requirements. The machines are an operator's delight with their optimum user friendliness, ergonomic design, and top performance data.

Kabatec combines years of experience with the very latest technology. Constant innovation and development are at the very core of the company and assure special customized solutions even for highly distinct customer requests and needs.

An entire range of taping applications

Whether the task is taping, bundling, insulating, or tape dispensing, you as a customer can look forward to a product portfolio with standardized machines as well as special solutions. In the future, we will further develop these products with even greater consistency and innovation under the brand name Kabatec.

KTB E Plus

Economy redefined

Insulating, spot taping, fixing, marking and labeling – process-controlled, fast and efficient.



KTHB Smart

smallest, electric stationary cable taping tool

Made for fast, easy handling thanks to an open winding head controlled with a foot pedal.



KTL 10

Compact, program-controlled taping machine

This machine is ideally suited to the taping of cable harnesses and small modules with a maximum tape length of 1,000 mm.



KTHB Micro

Smallest, mobile taping tool

This machine is the first step towards reproducible quality compared with manual taping.



KTHB Mini

Mobile taping tool

Mobile, electric taping tool for use on assembly boards.





DISTINCTIVE REDUCED COSTS AND PRODUCTION TIME THANKS TO AUTOMATION

BOOSTING THE EFFICIENCY OF CONTROL CABINET CONSTRUCTION

A company can render the arduous manual processing in control cabinet construction much more efficient by taking automation steps in line with its needs. Komax Wire provides solutions that are ideally suited to any size of production operations. In the same breath, these solutions can cut production time by as much as 50 percent while reducing costs substantially and improving quality.



In many places, control cabinet construction is still carried out in arduous manual processes. Skilled workers wire and equip the cabinets manually. The wires are individually cut to the desired length, stripped, crimped, marked and wired, all by hand. That is extremely time consuming and generates high costs.

Automation solutions from Komax Wire yield considerable savings. Efficient, needs-based automation steps can make the overall production process more independent and economical while simultaneously boosting quality. With the risk of entry mistakes

eliminated, this higher quality is achievable with fewer specialized personnel and the inkjet marking of the wires corresponds each time to the designation in the diagram.

Saving immense amounts of time

With semiautomatic manufacturing, the production time can be reduced by as much as 35 percent and with fully automatic production, by as much as 50 percent. Assuming an output of 100 control cabinets a year, this corresponds to time savings of 500 to 810 hours depending on the degree of automation.



Cut and Strip

low level of automation

For smaller control cabinet construction enterprises, the first step in automation is machine-based marking, cutting, stripping and crimping.



Crimp to Crimp

moderate level of automation

Larger volumes require a higher degree of automation. Komax Wire provides the suitable automation solutions for bringing about vital boosts in output with reasonable investments.


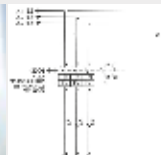









Harness Manufacturing


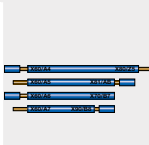



high level of automation

The maximum degree of automation reduces manual work to a minimum. Wires are processed and bundled in sequence, all in the correct order, so they can be laid easily in the control cabinet. That makes production highly efficient even for a batch of one.





A comparison of production times – manual work versus full automation

								
Reading diagrams	Stripping	Crimping	Marking	Wiring	Cutting/stripping	Crimping	Marking	
15 sec	5 sec	10 sec	15 sec	30 sec	5 sec	10 sec	15 sec	

Total 105 sec

					
Data transfer	Marking, cutting and stripping	Crimping	Transport	Wiring	time saving
5 sec	20 sec	10 sec	30 sec		up to 35%
Total 65 sec					

Total 65 sec

					
Data transfer	Marking, cutting, stripping and crimping	Transport	Wiring	time saving	
5 sec	10 sec	30 sec	up to 50%		
Total 45 sec					

Total 45 sec



Efficient data processing using DLW (Digital Lean Wiring)

The first prerequisite for the automation of control cabinet construction is to determine the production data including the wire length. This task can be performed easily and flexibly with Digital Lean Wiring (DLW), a software developed by Komax. It offers different ways of importing and processing data. For instance, already available wire lists can be used to determine the marking

on connections. Moreover, 2-D drawings can be imported in different formats without any trouble.

Anyone interested in avoiding the cost-intensive management of a component database from off-the-shelf ECAD systems can do virtual wiring using a high-resolution image. The image is made up of several individual photos taken by the optionally available Roundshot camera and then combined



into a dimensionally precise overall image. Based on this overall image, the skilled worker routes the wires virtually on the screen. With this method, the wire lengths can be calculated very efficiently for each connection. Then the production data is converted and loaded into the wire processing machine, which produces the items to the point of installation.

The DLW process for efficient manufacturing

The DLW Viewer is a lean assembly aid with touch controls that is available for wiring. It guides the person carrying out the work along the wiring route during the laying of the preprocessed strands on the screen. That means less specialized personnel can also carry out this work step.



Author: Martin Heinz, General Manager D-A-CH, iTAC Software AG

KOMAX AND ITAC ARE COLLABORATING

NEW MES FOR THE WIRE PROCESSING INDUSTRY 4.0

As leading companies we are bundling our competencies effective immediately: Komax Wire as a specialist in wire processing solutions and iTAC Software as an MES manufacturer. This collaboration is giving rise to a manufacturing execution system (MES) specially geared to the sectoral specifics of the wire processing industry. The system will be unveiled for the first time at the Komax In-house Show from October 25 through 27, 2016, at Komax headquarters in Dierikon.

Companies of the wire processing industry face growing challenges with respect to the quality and efficiency of production as products become more complex. Marc Schürmann, Vice President Marketing, Sales and Services at Komax Wire, explained, "The requirements placed on the quality of wire harnesses and wire connections, for example in automobiles, will continue to rise because the number of electronic components in the vehicle is increasing and these components are taking on more and more functions critical to safety." He added, "The products being made will be more complicated to pro-

cess due to the miniaturization of contact elements. New materials will be used while the cost pressure on the products will continue to rise." In addition, there is the task of having to aspire to zero-defects production at the same time.

That is precisely the focal point of the collaboration between iTAC and Komax Wire: The resulting manufacturing execution system (MES) ensures end-to-end transparency in all production areas of wire processing while simultaneously boosting productivity and quality.

iTAC Software is providing an MES with a broad range of functions that help to control and optimize wire-specific processes and support production as a whole. This state-of-the-art system has proven itself in a variety of sectors and possesses the corresponding technological and functional intelligence required in the wire processing industry for the use of a modern MES.

Optimizing the value chain

Komax Wire contributes its years of industry and process expertise along the entire value chain in wire processing. As the leading manufacturer of innovative, high quality

well as to its modules for order planning and manufacturing optimization that are sector-specific and Industry 4.0 capable, and to its business intelligence for use in wire processing.

The new MES is a full-scale ME system for controlling the entire range of wire harness production: machines, manual workplaces, operating aids, material flow, resources. It enables wire harness manufacturers to produce their complex products on time in the desired quality while making optimum use of the materials and of the tangible and intangible resources. The machine specifics can be

» THANKS TO THE PARTNERSHIP BETWEEN KOMAX WIRE AND ITAC, OUR CUSTOMERS BENEFIT FROM COMBINED KNOW-HOW «

solutions for wire processing, Komax Wire provides support for safe and efficient manufacturing processes. Through the bundling of the competencies of the two companies, the resulting MES has specific functions that fulfill the requirements of the wire processing industry to a T. The solution is scalable and customizable, so it can be adjusted to meet customer needs. At the same time, it can be used by companies of different sizes; in other words, by small and medium sized enterprises as well as large corporations. The MES has a unique standing in the wire processing market owing to these facts as

depicted in detail, which means a product can be produced exactly to specification. All Komax machines and all other machines are fully supported in the process.

The end-to-end solution is designed for the entire supply chain of wire processing companies – from incoming goods to all production processes to shipping. Komax is thereby taking yet another important step toward being a supplier of complete solutions for wire processing companies. The MES will be presented to customers, partners and other interested parties at the Komax In-house Show on October 25, 2016.

About iTAC Software AG:

iTAC Software AG, an independent company of the mechanical and plant engineering group Dürr, provides Internet-enabled information and communication technologies for the manufacturing industry. Founded in 1998, the company is one of the leading MES providers in Germany. The iTAC.MES.Suite is a cloud-based Manufacturing Execution System that is used worldwide by companies in different industry sectors such as automotive manufacturers and suppliers, electronics/EMS/TC, medical technology, metal processing and energy. Additional services and solutions for the implementation of the requirements of Industry 4.0 round off the portfolio. iTAC's philosophy is connecting people, data and systems.

iTAC Software AG has its headquarters in Montabaur (Germany) as well as a branch in the USA and a global partner network for sales and services.



**Author: Elizabeth Schroeder, General Manager
TE Connectivity Application Tooling Division**

One clear example of our focus on the customer has been through the relationship between Komax and TE Connectivity. Our relationship, which has been in existence for several decades going back into the early 80's, has produced many new innovations. As wire harness manufacturers were looking for faster, more affordable ways to process leads, the two companies realized the synergy available by cooperating to leverage the expertise of both companies. TE's advanced terminal engineering coupled with an industry-leading application tooling expertise were a solid match to the advanced automation capabilities of Komax. The relationship began when the two companies then decided to work together to develop lead-makers.

Throughout the booms of home electronics and increased automation of the auto suppliers in the 1980's, TE's Application Tooling business and Komax continued to develop solutions to support our customers. New innovations such as the Komax K50 that had the ability to block load TE's AMPMODU housings and at the same time improved automation of crimped and IDC products, were also introduced in the 80's. Several projects designed to improve performance for wire harness manufacturers including seal applications and crimp quality controls were developed in the 90's and early 2000's. Always with an eye to better serving our common wire harness customer base.

TOGETHER BRINGING OVER 30 YEARS OF COMBINED
INNOVATION TO THE WIRE HARNESS INDUSTRY

WORKING TOGETHER TO ENABLE THE FUTURE OF CONNECTIVITY

This year is the Diamond Anniversary of what has grown to become TE's Application Tooling Business Unit. On September 15th, 1941 the solderless crimp was invented and along with it the tool that ensured the safety, quality and reliability of that crimp connection. It is upon that base and with those customer commitments that TE and its Application Tooling Business Unit have continued to grow and reinvent itself for the past 75 years.

As the relationship evolved, TE made the decision to retire our own lead maker product lines in order to focus on other core competencies like hand tools, applicators, heat shrink equipment, terminators and board processing machines. We knew that some customers would be concerned. So it only made sense given the relationships that already existed that, we would offer to those customers a mixture between Komax wire prep and TE Application Tooling solutions. Since the beginning of the new relationship TE has sold and serviced Komax machines for our customers, and we continue to do so today.

As TE continues to develop new terminals to meet evolving market challenges, the two companies continue to work very closely in the qualification and validation process to maintain repeatable crimp performance on Komax lead-makers using TE applicators. A great example of our more recent collaboration was highlighted with the early involvement of Komax to develop automation and lead-maker ready design approaches for new TE LITEALUM terminals. TE's advanced OCEAN Applicator product line combined

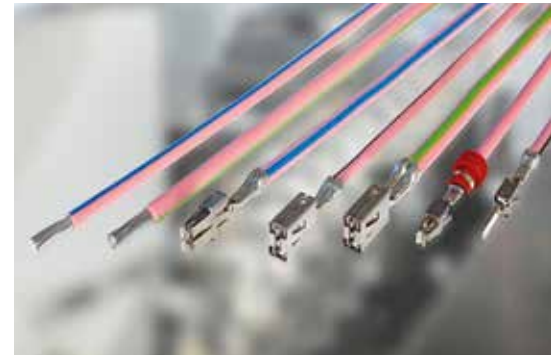
with Komax's lead-making technology, position the companies as experts in the groundbreaking application of aluminum in automobile wire harnesses. Aluminum enables significant weight savings allowing car makers to provide vehicles with improved fuel economy and reduced tailpipe emissions which are two of the most important market drivers for automotive OEMs today.

As our customers' requirements continue to evolve and more stringent demands are placed on all aspects of crimp performance, and as increased demands for connectivity continue, the TE Application Tooling and Komax relationship will continue to stay ahead of the curve through joint development and commercialization of leading edge technologies. Our customer focus and commitment remains just as it was 75 years ago to ensure the safety, quality, reliability of our products and our relationship with Komax helps us, in part, to deliver on those commitments.

TE Connectivity, TE, TE connectivity (logo), AMPMODU, OCEAN and LITEALUM are trademarks of the TE Connectivity Ltd. family of companies - Komax is a trademark.



Wire processing machine Komax K50



TE LITEALUM terminals

OCEAN Applicator



- **75** years in Business
- Over **9157** years of combined employee experience in Application Tooling
- Employee representation in **22** countries
- **66** unique patents issued in the past 3 years
- **2,681** unique OCEAN applicators
- **8,995** unique terminals that can be applied by OCEAN applicators



KOMAX ACADEMY

HIGH-QUALITY PROFESSIONAL TRAINING

The Komax Academy stands for a new modular training program complete with certification. Customers and their employees profit from greater competence in dealing with our machines and with wire processing in general.

This autumn, we will be featuring the Komax Academy for the first time at the Komax In-house Show. It is based on a concept we have been developing since 2014. The objective, strategy, and methodology are all sound and tested and have already been applied effectively for many months within the Komax service network. In an interview with Jürg Schneider, Director Global Service Management, we found out how the Komax Academy works and what concrete benefits it offers.

Clear added value for our customers

Isn't the designation Academy a bit overly ambitious? "It corresponds exactly with the objective of our entire training and certification process. Komax Wire is putting its entire expertise into these efforts in order to elevate employees' competency to a level that deserves the designation Academy. The requirements are as stringent as those of our machines. We thereby increase the added value and the competitiveness of our customers.

Highly qualified and methodically trained instructors with superb social skills train the employees in small groups of typically two to three participants – and do so in a way suitable for the position and related to the product for a particular machine. We use web-based modules featuring training content and learning checks based on the most modern concept of preparation during the course and as part of the certification process.

Consistently geared to customer needs

The training modules match the needs of the customers. For all machines currently being sold by Komax, there are training programs for the levels Basic (operators), Advanced (setup and service technicians) and Specialist (shift supervisors, production managers, or service technicians). Expert, the top level, is designed for future instructors.

Komax Wire offers its courses at five sites worldwide: Dierikon (Switzerland) for EMEA and global; Buffalo Grove, IL (USA) for North America and Mexico; Sao Paulo (Brazil), Shanghai (China), and Singapore for the SEA region. Languages of instruction are German, English, Chinese, Spanish, and Portuguese.

More consistent quality, fewer rejects

The employees are certified based on theoretical and practical assessments – in accordance with globally standard criteria for all four levels. In other words, a given certification is valid worldwide and entitles the holder to take part in a course at the next higher level.

Employees who are more competent in dealing with our machines and with wire processing in general: What concrete advantages arise from this situation? "If machines are optimally set up, operated and maintained, our customers achieve more consistent quality with fewer rejects. That not only lowers costs but also increases the trust their clientele have in them. And the clientele receive just what they ordered."

» THE KOMAX ACADEMY CONCEPT IS ABSOLUTELY NEW AND UNIQUE IN OUR INDUSTRY «

Satisfied motivated employees

Are there advantages on the cost side, too? "Of course there are. These employees can be resourceful even in demanding situations and do not have to rely on external assistance. So, the availability of the machines increases. That, in turn, lowers the costs while boosting our ability to be extremely dependable in meeting the deadlines the customers request." But our customers' employees also benefit and, with them, the companies. "Their task, indeed their occupation, gains in importance and standing. They can be even prouder because they see the big picture in wire processing and are more highly motivated than ever to get the utmost out of their machine."

More at www.komaxwire.com/academy

In short: Gaining competency and certification from the Komax Academy enables and motivates employees, from operators to experts, to maximize their performance. Certified competency is also an excellent sales argument and crucial for achieving an even greater edge over the competition. At "www.komaxwire.com/academy" you can find the latest news about the Komax Academy and the courses being planned and can request a quotation.

Certification at four levels

Basic Level

The participants can independently operate a particular machine in the production process as an operator, in other words prepare for production processes, load and replenish materials being processed, and perform daily maintenance.

Requirements: Computer skills as well as good oral and written command of one of the languages available at the Komax Academy.

Duration: 2–3 days depending on the machine

Advanced Level

The participants know the hardware of a particular machine and how it functions plus all points of maintenance. They can perform the setup procedures and the job of setup technician in configuration mode and as maintenance technician.

Requirements: Basic certification for the given machine as well as good oral and written command of one of the languages available at the Komax Academy.

Duration: 2–3 days depending on the machine

Specialist Level

For their jobs as shift supervisors, production managers, or in-house service technicians, the participants have in-depth knowledge of a particular machine. They know about its applications and safety devices as well as its hardware and software in troubleshooting and repairs.

Requirements: Advanced certification for the given machine as well as typically more than 2 years of experience at this level, good command of oral and written English, basic training in mechanics/electrics/electronics.

Duration: up to 5 days depending on the machine

Expert Level

Deepen the technical knowledge of the Specialist level. Participants build up specific teaching skills for training and instruction in connection with a particular machine, so that after passing the course, they can instruct employees and prepare them for future responsibilities.

Requirements: Specialist certification for the given machine, multiple years of operating or maintenance experience with Komax products.

Duration: 5 days

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YEARS
CUTTING
EDGE



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