

#1 | 2018

# NEWS

CUSTOMER MAGAZINE

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YEARS  
CUTTING  
EDGE

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**komax**



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## CUSTOMER FOCUS HAS TOP PRIORITY

Dear Readers,

"The varying needs of our customers are at the center of our activities. We listen to them carefully and ask the right questions. Understanding their requirements enables us to keep on improving." This statement is part of our understanding of the term "customer focus". For us it is more than a catch phrase. It is one of our five core values – along with innovation, quality, responsibility, and sustainable success.

Our goal is to offer you added value with our solutions so you can boost your productivity and maintain a competitive edge. To intensify the dialog with you, we reoriented our organization at the start of the year to be even more closely aligned with your markets. Two business areas are now specifically charged with caring for the different customer needs: on the one hand, **Automotive** in the motor vehicle market and on the other, **Industries** for the markets focusing on aerospace, telecom & datacom, industrials, etc. In addition, **Service** is considered vitally important at our company. Providing needs-based service following machine commissioning and delivering spare parts promptly are two central elements of our customer focus.

There are three experienced managers responsible for these three areas: Beat Wicki (Vice President Automotive), Patrick Blessing (Vice President Industries) and Jürg Schneider (Vice President Global Market Services). They report directly to me. Close, long-term relationships and partnerships with customers based on respect and esteem are top priorities for these gentlemen.

And now I wish you happy reading! Enjoy this latest edition of NEWS. Once again, you can look forward to a diverse range of topics.

Matijas Meyer  
CEO Komax Group







KOMAX GROUP

## GRAND OPENING IN IRAPUATO

**At the end of November, a two-day official opening ceremony was held at Komax de México in Irapuato. Among the invited guests were Matijas Meyer, CEO of the Komax Group, and Franco Herrera Sánchez, Undersecretary for Investment Promotion in the Ministry for Sustainable Economic Development, and a representative of the mayor. The opening was also attended by numerous customers from throughout Mexico and Nicaragua.**

Governmental representative Franco Herrera Sánchez said the federal state of Guanajuato had convinced myriad investors of the advantages of this region and many successful companies had therefore ended up settling there. He called Komax and its automated, intelligent wire processing solutions ideal complements to the automotive industry in his federal state.

After Komax de México General Manager Exiquio García had reported about how the new facility in Mexico had come about, Matijas Meyer thanked everyone involved. He expressed his appreciation to the customers in particular, saying they had made Komax's success possible in the first place.

During the two-day grand opening, customers and partners had the opportunity to familiarize themselves with the Komax products in the new showroom. Of course, all events were accompanied by local, culinary specialty dishes. The ceremonies concluded on the evening of the second day with a Mexican *taquiza*, to which all guests and employees were warmly invited. A *taquiza* is a traditional festive meal in Mexico for family and friends featuring a sumptuous buffet where people assemble their own tacos just the way they like them. It was a wonderful evening and the perfect end to the opening ceremonies.

Text: Armando García, Irapuato



**The official opening of the Komax de México facility (left to right): David Pascal, CEO Marabis Industrial Park; Armando García, Controller Komax de México; Tim Macalpine, General Manager of Komax USA; Matijas Meyer, CEO Komax Group; Franco Herrera Sánchez, Undersecretary for Investment Promotion at the Ministry of Sustainable Economic Development; Exiquio García, General Manager of Komax de México; Fernando Vera, Director of Economic Development for Irapuato, and Lee Humphreys, Regional Sales Manager Komax USA, flanked by two other charming Komax employees, Fabiola Vera (left) and Arlette Craviotto.**

KOMAX GROUP

## MORE SPACE FOR THONAUER IN VIENNA

**Thonauer opened its new 280 m<sup>2</sup> addition at its headquarters in Vienna. The addition houses an impressive showroom on the ground floor, where a Zeta and an Alpha can be exhibited simultaneously for the first time. A training and meeting facility was installed on the upper story.**

In a festive celebration, Friedrich Thonauer, the company founder, joined with Thonauer Group Managing Director Werner Renner to open the addition officially. Customers and partners from Austria, the Czech Republic, and Slovakia were invited to this special occasion. At the opening and the associated in-house show, many product innovations were presented and met with great interest on the part of the visitors. They included MicroForce 80 crimp force measuring, which was installed on a Mecal TT press, and the Mira 340. Along with the Komax fully automatic machines, the new showroom now also displays the broad range of one-stop-shop products. This gives Thonauer customers a chance to familiarize themselves with and test the machines right on site.

The company was delighted about the big demand among visitors for technical presentations in the new training room. Herbert Wiesinger, a field sales representative for Thonauer, taught the participants about the fundamentals of crimping. Thomas Fashing, Product Manager Mixing and Dosing, reported about ways to protect components while an employee from EPLAN explained how the workflow is optimized by having EPLAN transmit data directly to the Komax fully automatic machines.

Text: Monika Stepanek, Vienna



**Herbert Wiesinger explaining the fundamentals of crimping to the visitors attending his presentation.**

KOMAX GROUP

## NEW FACILITY IN BULGARIA

Production at the new TSK facility in Bulgaria began on December 1, 2017. With more than 15 employees at present, this TSK facility in Yambol concentrates on harness testing and spare parts business as well as providing servicing to its customers.

The Yambol facility is well selected because there are a number of automotive suppliers in the vicinity and the TSK facility in Turkey is just 250 kilometers away. Bulgaria is well-situated in general, being located in southeast Europe and close to Asia. Access to the Black Sea ports of Varna and Burgas is a further advantage. The economic and political situation in Bulgaria has been stable for years and the country has achieved steadily increasing rates of economic growth in recent years. Bulgaria also has well-trained workers. The young generation often has higher academic qualifications and speaks at least one foreign language. These positive conditions attract many companies to Bulgaria, further bolstering the upswing.



**The TSK team in Bulgaria is happy that production has started.**

MIRA 230 Q: THE FIRST WIRE STRIPPER WITH ACD TECHNOLOGY

# MIRA 230 Q: A GLOBAL INNOVATION QUALITY MONITORING WITH ACD TECHNOLOGY

When processing a host of different wire product types, it is essential to be able to control the level of quality and ensure that it is reproducible. This is why the Mira 230 Q by Komax is equipped with innovative ACD technology that perfectly monitors incision quality and supports processing through automatic configuration. These new features enable the Mira 230 Q to set new standards in the efficient, intelligent monitoring of incision and quality.

## An extensive range of applications – including multi-conductor wires – in a single step

In a world's first, Komax has integrated ACD monitoring technology into a benchtop machine designed for wire stripping. Specific functions, paired with simple handling, overcome the wire processing challenges faced by the sector today. The programmable Mira 230 Q comes with integrated sequence processing and a wire library to guarantee maximum productivity and reproducible quality. It can process individual and multi-conductor wires perfectly in a single step. What's more, these features can be used across a wide range of applications in a processing range of 0.03 to 8 mm<sup>2</sup> (AWG 32 – 8). A data backup can be performed via the USB port. The machine can also handle challenging wires and insulation materials with ease. Even wires with hard insulations can be processed thanks to the machine's robust design and high stripping force. These unique features make the Mira 230 Q the best machine in its segment.







The ACD incision monitoring of Mira 230 Q detects and indicates even the slightest contact between the blade and the strands.

#### ACD technology offers two advantages in one



First, ACD (automatic conductor detector) technology is able to detect and signal even the slightest contact between the blade and the conductor. This function can be activated during incision or pull-off processes. The user specifies whether defective wires that need to be rejected should be cut, or if the gripper needs to be manually approved.

Second, the Mira 230 Q uses the ACD technology as an automatic configuration aid, with the incision values being automatically modified based on the measured conductor diameter. This automation, paired with rapid access to frequently used functions and saved settings, makes the workflows highly efficient and helps to further enhance productivity.

#### Smart operation, flexible use and an award-winning design

Inspired by smartphones, the touch-enabled interface on the easy-to-read 5" screen allows the operator to input commands quickly and with no errors. Practical features and the ability to switch quickly between languages make it simple to set parameters. The ergonomic design helps the user to adopt the best possible posture when working. The outstanding functionality and design of the Mira 230 Q led it to be awarded the Red Dot Design Award. Thanks to its multi-faceted, superior features, the Mira 230 Q sets new standards for high quality, productivity and flexibility. The functional diversity and attractive price make it the go-to choice in benchtop wire-stripping machines.



S1441: THE LATEST GENERATION OF SEAL MODULE

# INCREASED PRODUCTIVITY THANKS TO PROCESS STABILITY

Exceptional process stability and minimal changeover times allow the seal module S1441 to raise productivity to a new level when deployed in fully automatic wire processing machines. The improved processing speed, stability and quality all help our customers to remain or become even more competitive.

## High productivity thanks to stability and short changeover times

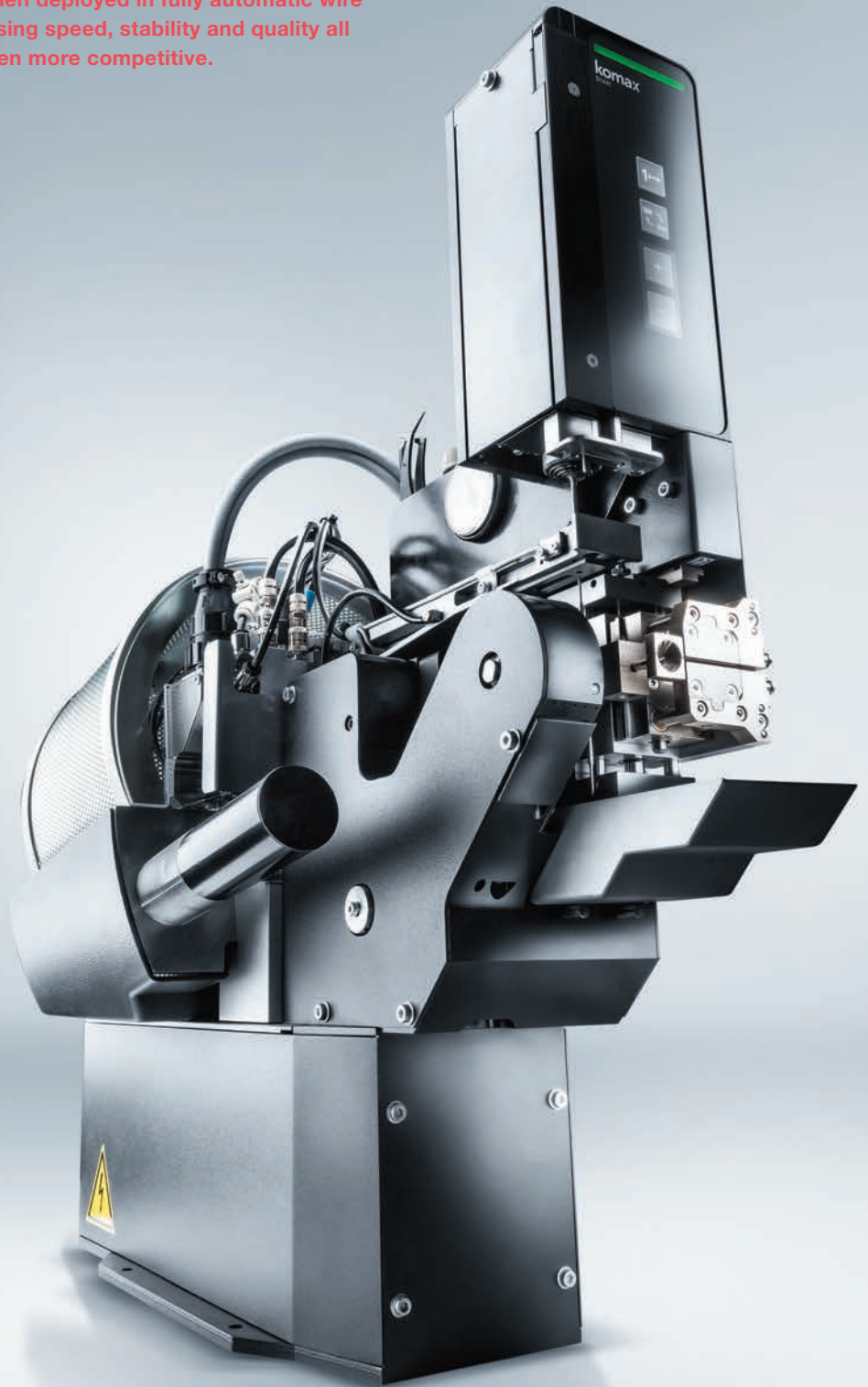
The innovative seal module enables up to 380 different seal variants to be processed, and is especially adept at processing mini-seals. The air pressure value is easy to regulate, ensuring stable conveyance of the seals. The intuitive controls, automatic configurations, finely tuned tool sets and interactive process lighting contribute to optimum production. Seal tracks from previous generations of seal module can continue to be used.

## Smart seal track saves parameters

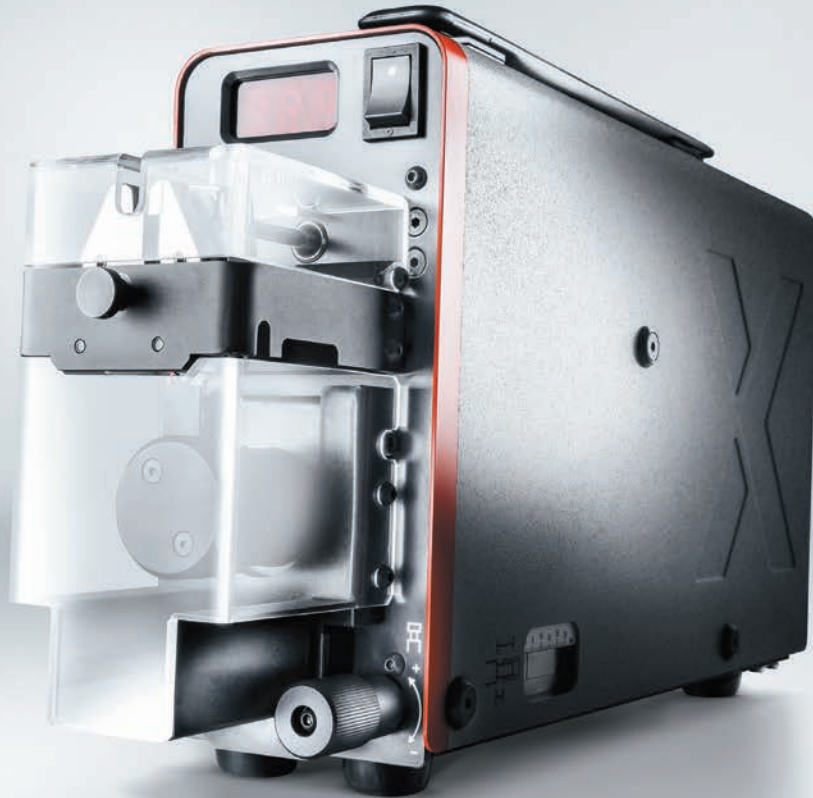
The newly developed smart seal track (SST) saves the operating parameters and is automatically detected. This enables production to be restarted without having to make additional manual adjustments. It also reduces changeover times and prevents input errors.

## Integrable quality monitoring without the need for programming

The tried and tested Q1240 quality tool can be integrated for quality monitoring purposes. The seal position and optional visual seal monitoring are set up automatically, meaning that nothing has to be programmed or configured in advance. The Q1240 is extremely efficient at detecting the quality of the stripping process, the seal position and any pierced or twisted seals. The image analysis is performed during production.







MIRA 32 – A WIRE STRIPPER FOR STANDARD WIRES

## MIRA 32 – A TRIED AND TESTED MACHINE WITH THE NEW KOMAX DESIGN

**The Mira 32 is not just an eye-catching piece of hardware, it has everything you need for the rapid electrical stripping of standard wires. Komax has incorporated all of the functional benefits of the reliable Cosmic 32M into its successor model. The new design, which embraces the look of the Komax product portfolio, now visually reflects the machine's outstanding quality.**

Thanks to this new corporate industrial design, the latest generation of machines now shares the visual appeal typical of all Komax products. The concept of new product design is a way for Komax to express brand values such as leadership in innovation and premium quality, and the visual transformation of the Mira 32 reflects this.

### Versatile use

The compact, robust, semi-automatic wire stripping machine is the number one choice when manual stripping is no longer able to satisfy the demands for speed and quality. Mira 32 can be used in a number of different settings, is easy to operate and is compact and mobile. These benefits make it a top entry-level model that meets the requirements

of its intended customer groups in the automotive and industry sectors.

### Also suitable for multi-core cables with short breakout lengths

The machine's universal V-blade enables single-conductor wires and inner wires of multi-core cables to be processed (full or half stripping) without having to change the blade. The short breakout length of up to 12.6 mm – and 7 mm on request – means that wires for compact plug housings can also be stripped.

### Simple operation

It takes just a few minutes to learn how to operate the machine. Three dials are used to adjust the cutting diameter, strip length

and pull-off length. The incision diameter is displayed to an accuracy of 0.01 mm on the large LED screen.

Processing starts automatically as soon as the wire tip touches the trigger sensor. For flexible and very thin wires, processing can also be triggered via a foot-operated switch. If necessary, an air jet can be installed for cleaning purposes.

### Robust and mobile

With its integrated ergonomic carry handle and compact dimensions, the 4.5 kg machine can be transported easily and conveniently. The machine runs off a standard electrical connection.



**CONSISTENTLY  
EASY**

**KOMAX HMI  
software & networking**

The Komax HMI exploits the full potential of a fully automatic wire processing machine. With the new operating philosophy, you can produce wire harnesses error-free, more flexibly, and always under control. Experience a whole new level of productivity.



KOMAX SURVEYS CUSTOMERS ON THEIR SATISFACTION

## WE KNOW WHAT IS IMPORTANT TO OUR CUSTOMERS

**The “heartbeat” of our customers is the pulse of the market. As the market leader in our field, this is what we focus on when developing our products and services. With this in mind, we conducted an in-depth customer satisfaction survey in fall 2017. Thanks to their honest feedback, we are now equipped to meet the requirements of our customers even better.**

The acceptance rate for the survey – conducted by telephone – was high. Many customers participated, allowing us to obtain representative results. We are extremely grateful to everyone who took part. We were supported in our efforts by the renowned market research institute MaritzCX, based in Germany. Products manufactured by our subsidiaries Kabatec and TSK were included in the survey for the first time. The direct style of the survey enabled us to understand our customers perfectly, which will help us to improve as we work side by side with them. Conducted on a global scale, the study revealed that the level of trust in our company is extremely high among our customer base.

The computer-assisted survey and analysis prepared by our partner MaritzCX gave us the insights we wanted, along with relevant findings on what our customers expect and the actual situation. This is just the information we need to understand the various requirements of our customers and refine and expand our range of services accordingly.

### **What we wanted to find out from our customers**

We prepared a series of questions about Komax's products, services, advice and image. We started by looking at our machines: how simple it is for customers to operate our products and how satisfied they are with the performance, quality and maintenance aspects. In terms of service quality, we asked them to assess our competence, availability and spare parts delivery service. We then focused on our advisory skills, commitment,

trustworthiness and the professional and social relationship between our customers and the Komax sales and service staff. Finally, we asked customers how satisfied they are with our complaints management process. On a much more general level, we were also interested in finding out the overall impression that our customers have of Komax.

### **Komax lives up to its claim to be a leader**

The results of the survey showed that we live up to our credentials as the leader in our field. In comparison to the customer survey conducted in 2013, we have improved significantly. Even more important to us, however, was finding out which areas we can continue to tweak and improve. This is something that we are working on now. We are also proud of the positives highlighted by our customers: they see Komax as a technology leader and product innovator that is both credible and focused wholly on its customers. The performance of our sales staff was rated highly. They were singled out for being able to provide transparent solutions expertly tailored to meet the requirements of customers. Furthermore, our customers greatly value our local presence paired with our top-tier, global range of products and services.

Komax's leading position is bolstered by our promise to you as a customer that we will do everything we can to guide you into the future with innovative products and services. You can rest assured that we will keep our promise.



FUTURE SCENARIO FOR THE AUTOMOTIVE INDUSTRY

# MEGATREND TO AUTONOMY CHANGES THE INDUSTRY

Autonomous vehicles promise unprecedented safety and convenience. This advance poses huge technical and design challenges for the automotive industry. The megatrend to autonomous mobility will change the industry in lasting ways – that much is already clear today.

For some time, observers have noted a rapidly increasing number of driver assistance systems with each new model generation. By 2025, their scope will be so complete and coordinated as to enable fully automatic driving depending on the OEM involved. Systems that still sound a little like science fiction are being tried out today in countless practical tests by Waymo, Tesla, Aptiv, GM, Ford, BMW, Mercedes-Benz, Nissan, Honda, etc.

**The advantages of autonomous driving are obvious**

The objectivity of the technology provides greater safety. After all, human beings have a limited attention span and may take wrong actions. Statistically, the majority of all severe accidents can be attributed to human error. In the United States, more than 37,000

people died in car accidents in 2016. Autonomous vehicles could make a vital contribution to increasing safety and preventing accidents.

Aside from the comfort and convenience of having yourself driven instead of driving yourself, much of the time in a car passes unused. The time individuals spend behind the wheel adds up to hundreds of hours depending on their profession and situation in life. From that standpoint, too, vehicle automation opens up enormous potential for putting heretofore wasted time in the car to more efficient use. Furthermore, autonomous mobility can tap into new user groups. Elderly or disabled people can reach their desired destinations individually in autonomous vehicles.

## ERAS OF SAFETY SYSTEMS FOR PROTECTING VEHICLE PASSENGERS



### Changing mobility behavior will turn the market upside down

The change in our mobility behavior is greatly affected by urbanization, demographic change, environmental aspects and social conventions. Earlier generations wanted a car as a personal possession whereas people in the future will put the focus more on general mobility. Consequently, the choice will center not so much on driving per se but rather on selecting a suitable means of transportation. That will have enormous ramifications for the industry.

### Future scenario for the automotive industry

– OEMs will have to reinvent themselves because vehicles in the future will be associated much less with emotions than they are today. The BMW slogan “Freude am Fahren” (driving pleasure) will likely be outdated by then.

- In newly emerging business models, cars will be relegated to articles of daily use. In the future mobility service providers will occupy a place between the OEM and the end customer.
- Customer specific vehicle configuration seems hardly expedient any more in the context of whole vehicle fleets. Much more likely there will be demand for vehicles with a standardized design that are produced in large numbers.
- Infotainment applications will grow in significance as differentiation features. Passengers who inhabit the vehicle, as it were, have different expectations of the interior. Their focus is on using the available time more efficiently or enjoyably.
- The quality requirements placed on supplier parts will increase and will entail full traceability of all manufacturing processes the parts have gone through – an absolute imperative as soon as the vehicles attain a level of automation of 4 or 5.

## 2016–2025

## 2025+

### Features

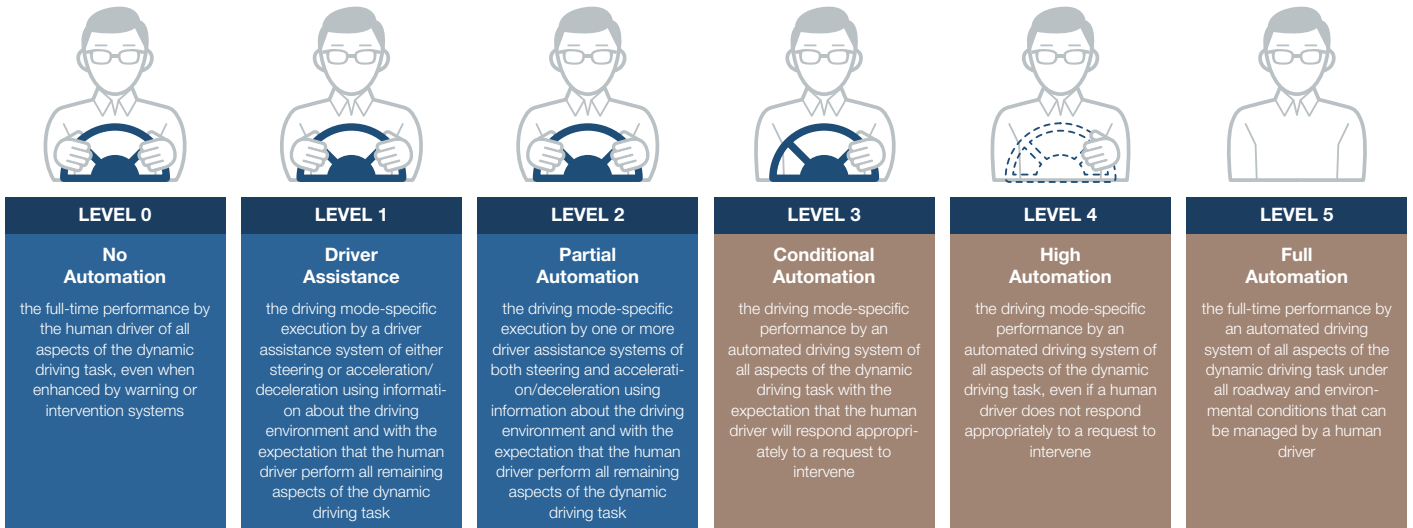
cy braking

### Partially Automated Safety Features

Lane keeping assist  
Adaptive cruise control  
Traffic jam assist  
Self-parking

### Fully Automated Safety Features

Highway autopilot

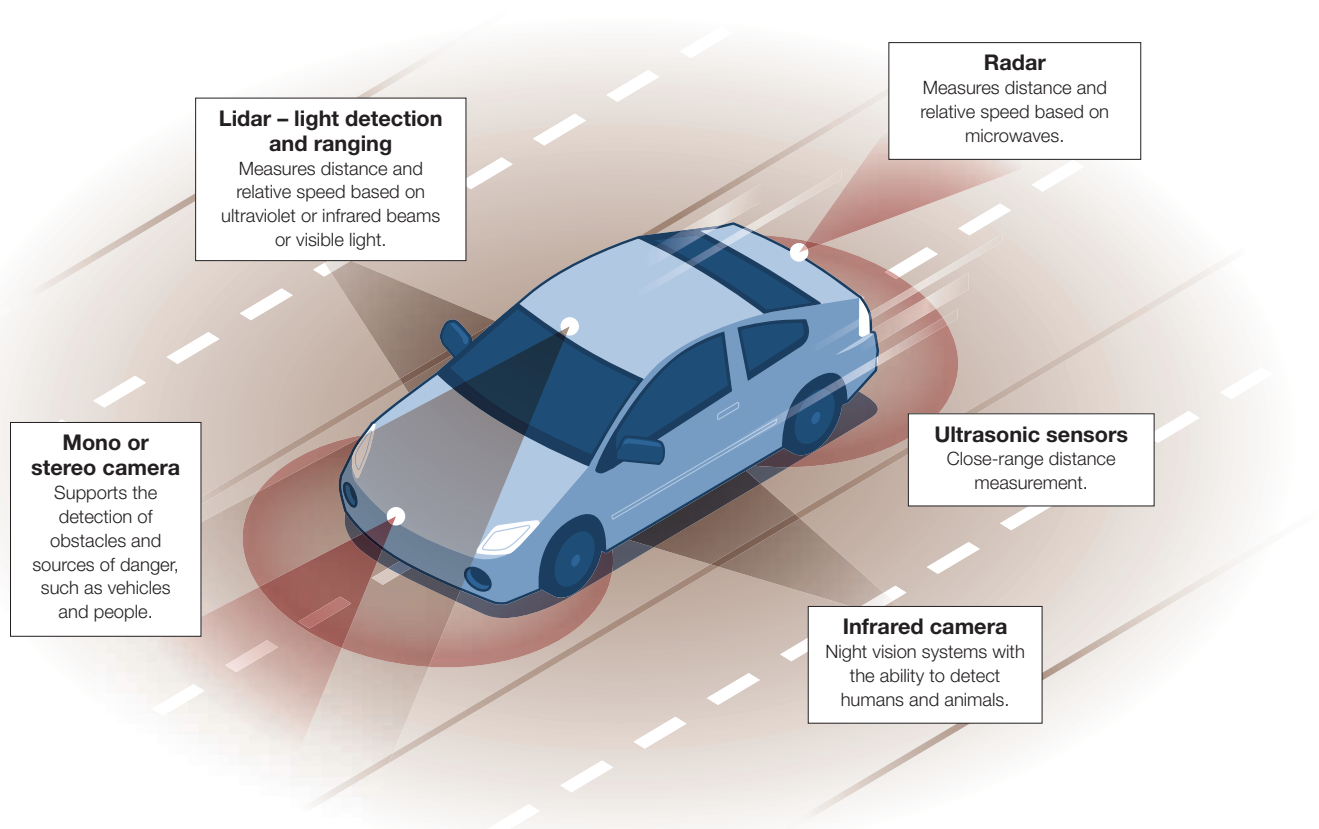


Automation levels for autonomous driving pursuant to SAE J3016.

New cars currently have an automation level of 2. With its A8 model, Audi recently unveiled the world's first vehicle technically capable of attaining level 3. Permission for the on-road use of this function has not yet been granted, however. Unclear legal aspects and insurance issues pose big challenges for car makers, as does the technical implementability of the next levels of automation.

### Autonomy functions require more and better cables

To achieve automation levels 3 or higher, various sensors must be employed: cameras, radar, lidar and ultrasound that scan the surrounding area. At the same time, GPS and acceleration sensors determine the current vehicle position, which is then aligned with high-resolution real-time maps.



Sensors for driver assistance systems.

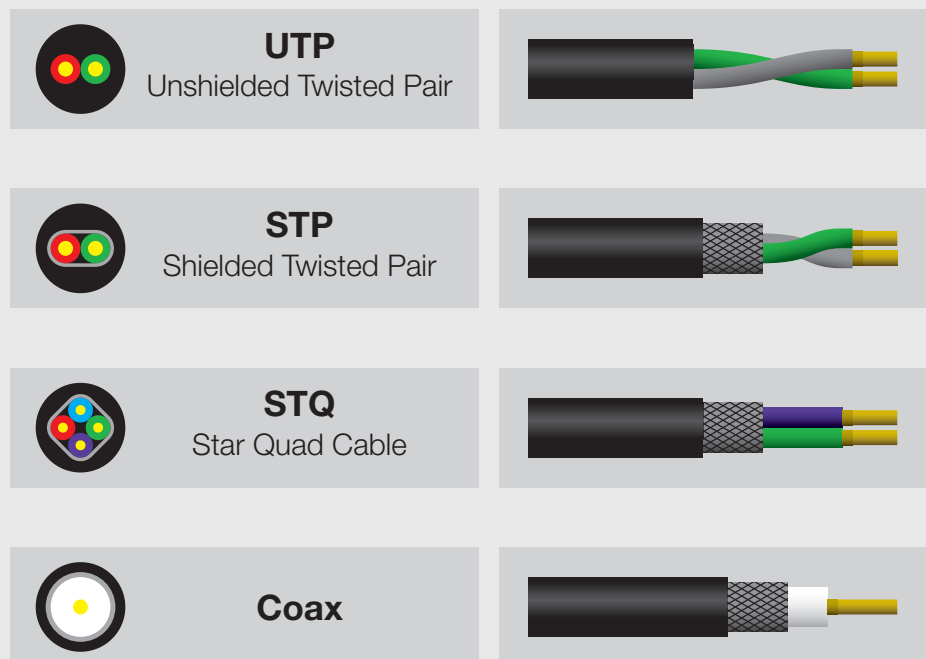


Thereby, immense quantities of data are exchanged within and also between vehicles and their surroundings. This task requires an expanded network of data links within the vehicle. This network must be manufactured in accordance with the highest quality standards while full traceability of individual process steps must be guaranteed. All that is only achievable in the first place with automated solutions.

#### Equipped for the “Mobility of the future” with Komax

The market is currently preparing itself for the changes ahead. The high degree of dynamism is manifested in the many acquisitions, partnerships and strategic alliances with which each company is trying to gain a competitive edge. Telecom service providers, chip manufacturers, and software firms are increasingly rushing into the hotly contested automotive supplier market, because

there is more software in modern premium vehicles than in the Space Shuttle, in fighter jets, at Facebook or in the Android system. To enable the wire processing industry to rise to the challenges with suitable resources and keep pace with the rapid advances, Komax is charging ahead with corresponding automation solutions. Komax has a broad range in the data cable segment, offering solutions for fully automatic UTP production as well as specific processing systems for coaxial cables (e.g. miniFAKRA, FAKRA) and shielded cables (e.g. HSD or Gbit Ethernet). This enables wire harness manufacturers to produce the needed cables economically in the required quality at a high rate of productivity – including products in the miniature range. Driven by a pioneering spirit and technological leadership, Komax offers itself as a partner to the industry so that the upcoming challenges can be jointly met with suitable automation solutions.



Data cables for autonomous driving that can undergo automated processing on Komax machines.

KOMAX CHINA

## “DEVELOPING AUTONOMOUS DRIVING IS A CORE STRATEGY”

**Tim Jutta, 41, has been running our branch establishment in China since August 2016. He studied industrial engineering in Berlin and has years of experience in mechanical engineering. After working for a German machine manufacturer in China for more than eight years, he had a four-year stint with the Australian railroad industry. Our conversation with him revolved around the development and challenges of the Chinese market and their significance for Komax.**

*Tim Jutta, Komax China based in Shanghai has about 150 employees today. You have service outlets in Weihai and Chengdu and are setting up distribution facilities in Beijing, Guangzhou and Chongqing. In other words, you run quite a sizable enterprise. Could you give us a picture of your operations? What services do you offer?*

First, we sell the entire product range, with installation and service included. In addition, we are the distribution partner for one-stop-shop products from Mecal, Mecalbi, Schunk and others.

*From what we heard, you also run your own production operation.*

Yes, we do! In Shanghai, we make localized products to meet the special requirements of the Asian market, particularly those of local customers. Moreover, we do local production in the testing sector. It enables us to meet the customers' tough requirements regarding delivery periods.

### «THERE ARE GENERALLY VERY TOUGH REQUIREMENTS FOR SHORT, FLEXIBLE DELIVERY PERIODS»

*So, delivery periods are especially important in China?*

Chinese customers can sometimes make highly emotional purchases; there are generally very tough requirements for short, flexible delivery periods. Basically what they want, though, is good quality at a reasonable price. However, we are observing increasing price sensitivity, too.



Tim Jutta, Managing Director Komax China

*What else is important to the Chinese customers?*

Of course, the qualified advice of our sales team counts as well. Newer customers in particular often still lack experience and rely on that advice. Another factor is short reaction times in the service sector. Add to all of that good personal relationships and the trust that goes with them. These aspects are extremely important to local customers in China.

*How has the company developed in recent years?*

We are currently seeing strong sales growth in the wire and automotive business but also a rise in industrials and solutions business. The CC machines are the top sellers, just like in Europe. They make up our core business. We have the best solutions on the market and a solid reputation with the customers. We are experiencing increases in automation solutions and the more complex wire processing machines because there is great pressure to automate in China.

and IT integration. All of them want to be part of the action although many projects are questionable economically. Everyone wants to be prepared if the government passes stricter laws to force companies to increase their level of automation. China, too, is aware that it can no longer remain competitive worldwide if its labor costs continue rising. Everything along the value chain must be accelerated in the direction of innovation.

*How are the manufacturers reacting to these local subsidy programs?*

Crucial factors for the selection of new production locations are labor costs, logistics and the availability of labor on the one hand. But for OEMs in China, politically motivated subsidy programs also count and wire harness producers following them there. Wire harness producers have also been known to move to regions of this kind on their own.

## «EVERYTHING IS LEADING TO A CONSTANTLY RISING LEVEL OF AUTOMATION»

*Considering the low wages in China, you might think that automation would not necessarily be the top priority.*

That would be mistaken. Everything is leading to a constantly rising level of automation because industry keeps being stretched to its limits in all kinds of respects. Among them are the rising quality requirements, for example, being able to achieve levels 4 and 5 in autonomous driving. Ongoing miniaturization is another factor, for instance PicoMQS, which will hit China too with somewhat of a delay. And let us not forget that countries with previously low costs are also seeing wages rise along with the demand for automation solutions.

*The master plan MADE IN CHINA 2025 is certainly playing a pivotal role in this context as well. With the help of innovative smart manufacturing technology, China wants to develop into the world's most advanced and competitive economic power in the course of the coming decades.*

*What standing do Chinese wire harness producers currently have?*

China generally remains to be No. 1 in wire harnesses worldwide. However, most of their products are only used in low-end models. On the other hand, the Chinese wire harness producers are striving to gain a foothold in segments with bigger margins and are turning to automated solutions to do so.

*You often read contradictory things about China's road to electromobility. How would you assess this trend?*

China's government is waging a hard fight against air pollution with stricter environmental regulations. For the automotive industry, there are clear signals for a strategy leading to electromobility. By 2020, the percentage of hybrid and electric vehicles is expected to make up 10% of the total vehicles sold.

## «CHINA IS AWARE THAT IT CAN NO LONGER REMAIN COMPETITIVE WORLDWIDE IF ITS LABOR COSTS CONTINUE RISING»

The master plan corresponds approximately to that for Industry 4.0 in Europe and the entire country is focused on it. There are significant subsidy programs for automation and high-tech companies. Nearly every industry and every major company have at least lighthouse projects for automation

*Such a huge change occurring in such a short time is amazing. Is the government steering this move toward electromobility?*

And how! In big cities like Shanghai it is almost impossible to obtain a license plate for vehicles with a combustion engine.





By comparison, licenses for e-cars are free of charge. It is unlawful to found companies linked to combustion engines. China has also completely abandoned all attempts to catch up technologically in the field of conventional engines with European, Japanese and American manufacturers. With new tailor-made laws and regulations, the government is

*What are the chances today of foreign vehicle manufacturers of being allowed to build production facilities in China? Earlier, only joint ventures were possible.*

In the meantime, China has adjusted its legal requirements for foreign car makers. Today, permission is also given to manufacturers that are fully foreign owned.

## «TODAY, PERMISSION IS ALSO GIVEN TO MANUFACTURERS THAT ARE FULLY FOREIGN OWNED»

putting its full energy behind achieving a lightning takeoff for domestic e-car makers. Further measures involve stricter emissions standards, lower battery costs, and a tighter-knit network of charging stations. All these steps are meant to increase acceptance among consumers and greatly contribute to enabling a breakthrough for e-vehicles in the years ahead.

*Just recently it became known that China wants to force manufacturers of imported vehicles and of vehicles produced in China to have e-vehicles make up a certain minimum percentage of the total. How will that work?*

The plan is to have a point system based on the range of vehicles offered. Vehicles with electric engines receive more points than those with a hybrid drive. If a gap occurs, a man-

*You mentioned autonomous driving earlier in our conversation. I would have thought China would be concentrating on other projects for now.*

And yet the opposite is true. Developing autonomous driving is a core strategy. China has the clear goal that by 2020 vehicles attaining levels 0 to 2 should comprise half of all cars sold. As a result of the master plan to develop smart vehicle systems, there are demonstration sites for autonomous driving in Shanghai, Shenzhen, Zhejiang, Anhui and Liaoning. Baidu is starting a small production operation in July for autonomous Kinglong shuttle mini-buses rated level 4, with no steering wheel. They will be used for trials in large cities. Parallel to those efforts, advances with radar antennas are also emerging on the infrastructure side. Great things are currently expected of autonomous vehicles. However, it is

## «THERE ARE ALSO SIGNS OF GROWTH IN THE FIELDS OF TELECOM, INDUSTRIALS AND AEROSPACE»

ufacturer can purchase points from a competitor or pay a fine. This system puts German car makers under pressure in particular because they only offer hybrid drives for top segment models like the Audi A8 or the Mercedes S-Class.

expected to take the next ten years for them to become a general trend. As soon as the technology and the associated regulations are in place, up to 15% of all new cars will presumably be fully autonomous by 2030.



Komax China employs around 150 people at its headquarters in Shanghai.

*Up till now, we delved quite deeply into automotive manufacturing. Is business moving primarily in this direction due to the master plan?*

No, the Chinese government wants to intervene in other markets as well, for example, the aviation industry. China has set a clear political goal of developing the Comac C919 into an aircraft that can compete with the product ranges of Airbus and Boeing, the market leaders. This model already took its maiden flight last year and is expected to be successful at least in the Chinese market.

*Thank you for your expert insights into topics that keenly interest us. What prospects and outlooks do you see for Komax in China generally and especially considering the master plan?*

We expect Komax to continue enjoying business success in the years ahead. The prospects of the core business in the automotive sector are good but there are also signs of growth in the fields of telecom, industrials and aerospace. At Komax, we have initiated the necessary steps to continue growing in these segments in China. We will be able to offer our customers competitive and innovative products coupled with first-class service and the quick delivery of spare parts.



Komax service and sales network in China.



ZETA 630 FOR CONTROL CABINET CONSTRUCTION IN BULGARIA

## **“TO BE PRECISE, THROUGHPUT TIMES ARE NOW 40-50% SHORTER”**

In 2017, we delivered the first Zeta 630 to Bulgaria. This report from our local representative Sevdalin Sevdalinov of Tekuni Eood reveals how automation is already a topic of discussion even in a country in transition with relatively low wage costs.



The cables are bound in the right order, which simplifies wiring in the control cabinet.



Among other things, our customer Oskar-El produces control boards and control cabinets tailored to the special requirements of customers in metallurgy, airports, hospitals, wastewater treatment systems, filling stations and power plants. We have taken care of this customer for approximately ten years. First, we provided entry-level solutions such as hand tools, workbench equipment, and wire strippers from our One Stop Shop portfolio. In 2015, Oskar-El purchased a mobile Komax MicroLab 10 from us. In 2017, Oskar-El received the first Zeta 630 delivered to Bulgaria by Komax.

I was able to have a long discussion with founder and owner Elena Mincheva about her experiences with the Zeta 630 and DLW. A few years ago, she started looking for solutions to increase output and quality with the existing staff. "To be precise, my concerns were especially to optimize labor costs, shorten throughput times, and adhere to the delivery deadlines customers were demanding."

## **"MY CONCERNS WERE ESPECIALLY TO OPTIMIZE LABOUR COSTS, SHORTEN THROUGHPUT TIMES, AND ADHERE TO THE DELIVERY DEADLINES CUSTOMERS WERE DEMANDING."**

Does she already have problems finding qualified employees? "We're still able to find them. However, our total labor costs are increasing year by year. Nevertheless, Bulgaria has still one of the lowest labor costs within the European Union, but the lack of qualified employees here, too, is just a matter of time. Because Oskar-El always thinks ahead and still wants to be competitive in five to ten years, automation is the only way we will be able to continue producing in Bulgaria."

Before the Zeta 630 came out, we were talking to Oskar-El about the Zeta 633, but it was simply too expensive for her company's needs. Then Komax launched the Zeta 630. Right away, Elena Mincheva was ready to attend the 2016 in-house show at Komax in Dierikon with me. This event is always a good opportunity for us to show our customers all Komax products under one roof.

While she was at the show, Elena Mincheva ordered the Zeta 630 on the spot. "It was love at first sight. We want only the best and we can no longer make do with wire strippers and hand tools. As a family-owned, medium-sized, future-oriented company, we do not have a lot of extra time to calculate every detail of complex investments. But we could see the potential of the Zeta 630 immediately and, due to our long-term relationships, we trusted the recommendations of Tekuni and Komax. This is how we took the critical step towards the complete automation of our cable production."

Did Elena Mincheva also evaluate other solutions beforehand? "Tekuni is the only supplier for cable equipment. Thanks to its ongoing support with products and services, we have developed a strong, trusting relationship. Therefore, it was clear to us that we have found the right partner for additional investments. In addition, no other supplier can offer solutions like the Zeta 630 and DLW."

Tekuni installed the system in May 2017. Komax employees Rolf Graber and Andreas Bitzi were there to provide technical support. From the very beginning, it was clear to Oskar-El that this solution would have a long-term effect on the internal production process. However, all the challenges could not be foreseen. We were able to control certain flows through the right machine configuration, software solutions, etc., but we had to analyze and optimize others step by step in the factory together with the employees.

During the introductory phase, we assisted Oskar-El intensively with questions and in cases of doubt. One of the challenges related to the conversion of data; another to the configuration of certain modules. Elena Mincheva vividly remembers the introductory phase. "Tekuni assisted us promptly and courteously, and we are happy that everything worked so well. After just two weeks, we were able to start normal production."



**Sevdalin Sevdalinov,  
Tekuni Eood**



**Elena Mincheva, founder and  
owner of Oskar-El**



**Using the roundshot camera, a custom-tailored, high-resolution composite picture is created in a few steps from several individual pictures.**

when laying prefabricated wires. “Important is that new equipment be used step by step. Our employees must be able to follow the development and may not be overloaded.”

Does Elena Mincheva believe that Oskar-EI has achieved all the goals it set for itself with the Zeta 630? “Yes, we are making great progress with regard to capacity and quality and we have incorporated innovations into our company. It took a while until we were familiar with the machine, but today we could never survive without it. As soon as it was running and the software was installed, we all thought about how we could optimize our processes and further increase our efficiency.”

For very complex orders, sometimes more than 20 different wires are used at Oskar-EI. However, there are reserves here, for the automatic wire selector of the Zeta 630 can handle up to 36. The wire cross-sections can be between 0.35 and 180 mm<sup>2</sup>;

EPLAN is used for the electrical engineering. Oskar-EI uses other tools on customer request. For projects, information about cable lengths is often missing. Oskar-EI now determines these thanks to virtual wiring in the DLW. The basis for this is a photo of

## **“NOW WE ARE ON A LEVEL ON WHICH WE CANNOT ACHIEVE THE VOLUME THE MARKET REQUIRES WITHOUT THE ZETA 630.”**

in most cases, they are between 0.5 and 2.5 mm<sup>2</sup>. Some control cabinets are produced in small series, but there are also projects with a batch size of 1. “Naturally these are the most challenging processes,” confirms Elena Mincheva: “But here, too, we have made great progress thanks to the Komax solution.”

the control cabinet once it has been set up. Using the roundshot camera, a custom-tailored, high-resolution composite picture is created in a few steps from several individual pictures. One of the next steps for the digitalization of the production process is the introduction of the DLW Viewer, which guides the employees through cabling on-screen

“With the Zeta 630, our production capacity increased suddenly – and we didn’t even have to hire more personnel. To be precise, throughput times are now 40-50% shorter. In addition, we improved quality and could deliver faster; our deadlines shrank by half. Because our manufacturing costs dropped, we became more competitive. Now, all control panels are finally wired identically because all cables with exact lengths are available to our employees. Before, nearly every control panel had its own layout because



### **Oskar-EI**

Today, the company established by Elena Mincheva in 1992 has 110 employees. The company's headquarters and production are in Bozhurishte in the northwest industrial zone of Sofia.

Oskar-EI specializes in power supply, automation, and the control and monitoring of technological processes in the industrial, power, and water sectors. It sells its solutions primarily in Germany, Russia, France, Oman, Italy, the Netherlands, and, of course, in Bulgaria itself. Its absolute strength is reacting to its customers' special requirements. In addition, it offers comprehensive project support from engineering to cabinet manufacturing through to installation on-site.

### **Tekuni EOOD**

The headquarters of this company established in 2006 is in Dragalevtsi, a southern suburb of Sofia. Its target markets are manufacturers of automobiles, consumer goods, household appliances, and industry.

we were not able to persuade the employees that they should always use the same routes.”

“Now we are on a level on which we cannot achieve the volume the market requires without the Zeta 630. As a result, we have acquired new customers. At the moment we don't want to reduce prices, but perhaps when the entire process is complete and we can expand our volume, for we have reserves thanks to the Zeta 630.”

Actually Elena Mincheva wants to automate further. “It would be nice if it were possible to automate the wiring on the control panels.” But there is not yet a solution for this with a sensible price-performance ratio.

**“STARTING WITH THE EVALUATION, WE HAVE WORKED VERY WELL WITH TEKUNI AND WE ADMIRE KOMAX'S POWERS OF INNOVATION.”**

In summary, Elena Mincheva has only praise for Komax and Tekuni. “Starting with the evaluation, we have worked very well with Tekuni and we admire Komax's powers of innovation. It is always the first provider to offer essential, practical solutions. You can also see that Komax supports its representatives and customers perfectly and that it keeps an open ear for their needs.”

After successful completion of this project, it was once again clear to me that Tekuni should count itself lucky that it will soon celebrate twelve years of working with Komax. Many of our customers want to grow sooner or later, which means that they need a higher degree of automation. We have the best partner for this in Komax. I do not think there is anything about this relationship that could be improved.

ZETA 630

## ECONOMICAL AUTOMATION OF CONTROL CABINET CONSTRUCTION



This machine, which was launched in 2016, revolutionized control cabinet construction thanks to automated flows and batch or sequence production without changeover. It assembles all required cables automatically and provides them in the correct sequence and length, completely equipped – including labelling and terminals. They only have to be laid on the control cabinet. Manual processes such as cutting to length, stripping, labelling, and pressing on sleeves are no longer required.

### DLW (Digital Lean Wiring)

In order for the control cabinet construction process to be automated, the first step is to collect the production data, including the cable length. The DLW software developed by Komax offers the ideal solution for this with its clear focus on simplicity and flexibility.



**40**  
**YEARS**  
**CUTTING**  
**EDGE**



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