

POWER

#11



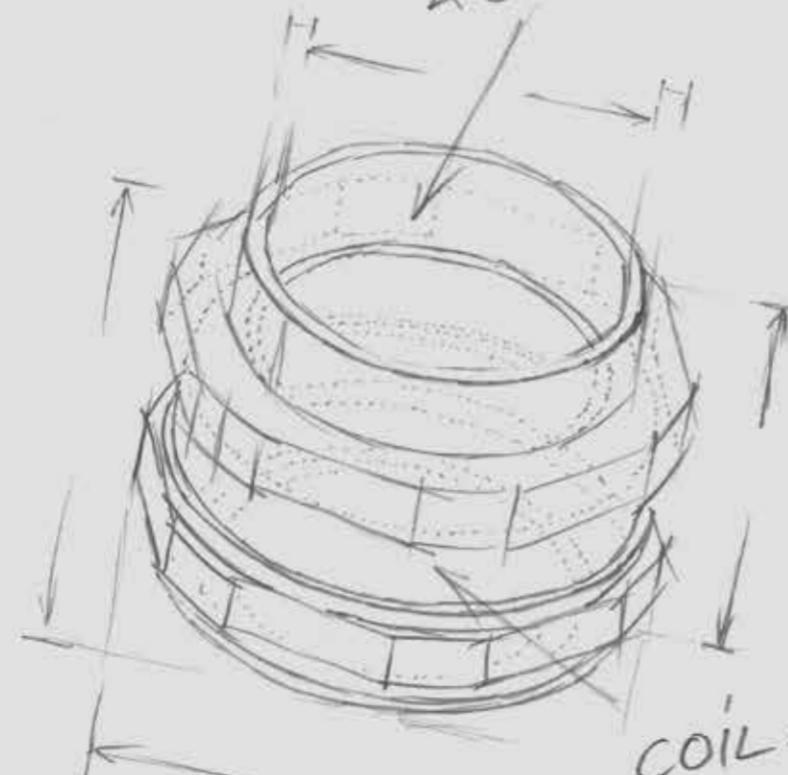
**Stronger
together**

**Serie: The stranding process turns
individual cores into a robust,
flexible cable** page 24

WHAT COULD IT BE?

FOR CABLES
with $\phi > 42\text{ mm}$

VARIOUS SEALING
INSERTS FOR
A SECURE FIT



GOOD STRAIN
RELIEF

COIL SPRING
CONTACTS IN
EMC VERSION



Socrates realised this fact: "Stagnation is the beginning of the end." This sentence is as relevant to me today as it was in antiquity because if you want progress, you have to be prepared to move forward. We've been doing just that the last 41 years at HELUKABEL. Clear vision and the courage to make changes are essential for development and sustainable growth. For me, initiating progress also means going in new directions. We have thus put plans in motion to secure the future success of the company with a major step this spring when the first spade went into the ground marking the start of work on our new company headquarters in Hemmingen (report on page 6). With this investment in the future, we not only want to continue the growth of our family-owned company and strengthen our position as an attractive employer, but we also want to create optimal conditions for productivity, efficiency and innovation.

Internal communication and cross-departmental work processes will benefit from the open, light-filled room concept and consolidating previously separated locations under one roof in Hemmingen. I'm also particularly excited about how a modern working environment will allow our employees to feel completely at home, while enabling them to develop and respond to new challenges with motivation, enjoyment and curiosity. Furthermore, the new building will create new ways to bring our services and products closer to customers in a variety of applications and market segments. The new headquarters is also a clear sign of our commitment to our continued growth in Baden-Württemberg.

The interesting stories in this new issue of POWER are proof that standing still is not an option for us. I do hope you enjoy reading this issue of POWER!

Yours sincerely,
Helmut Luksch, Managing Director HELUKABEL GmbH



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In Brief

New Additions

NSGAFÖU 3 KV – NOW AVAILABLE IN ORANGE

HELUKABEL is now offering the NSGAFÖU 3 kV in orange. The advantage of this classic, short-circuit-proof wire in the switch cabinet is that no coiling and heatshrink tubing is required. This saves time, reduces inventory and provides a better appearance without creases. The smaller outer diameter also facilitates insertion into the terminal block. There is no danger of the heat gun overheating the ferrule. Additional information: www.helukabel.com/NSGAFOU_Eng

CU GROUNDING STRAP

The CU grounding strap for EMC applications is suitable for use in the automotive industry, robot systems and in switch cabinet construction. HELUKABEL offers the tinned copper grounding strap with seamless pressed terminations in standard lengths from 100 to 500 millimeters (4 to 20 inches) and stud holes from 4,8 to 8,5 millimeters (3/16 to 11/32 inches) from stock. Other measurements and stud hole sizes are available on request. Additional information: www.helukabel.com/CU-Earthing-Strap

MULTISPEED-522 TPE

The MULTISPEED-522 TPE is HELUKABEL's top drag chain control wire product and is particularly suitable for applications with extreme technical requirements, as well as long travel distances. It is used wherever the highest demands are placed on flexibility, abrasion resistance, ozone and chemical resistance. Additional information: www.helukabel.com/11001824en



First spade in the ground for new company headquarters

Construction work on the new HELUKABEL headquarters in Hemmingen began in May with the symbolic "first spade in the ground" ceremony. With a gross floor space of 12,000 m² (129,167 ft²), the highly functional building will provide room for 450 attractive workplaces and boast modern architecture. Four floors on an all-glass base will house offices, a light-

flooded foyer with a company restaurant and café, as well as a modern conference centre and exhibition spaces. Parking spaces with charging stations for electric vehicles and e-bikes will perfect the investment in the future. The construction work is expected to be completed by the end of next year.

3,000m² of glass surfacing

to create a bright, light-flooded atmosphere and maximise daylight in working spaces of the new building in Hemmingen.

© plan b / wittfoht architekten bda

HELUKABEL

For use under extreme conditions

To ensure optimal healing of implants after orthopaedic surgery, manufacturers use special procedures to treat their surfaces. Among other things, implants are equipped with a special rough and porous coating. This coating facilitates the attachment of bone cell deposits, which fosters a permanent bond between the bone and implant in the body. In addition to the aforementioned coating, DOT GmbH medical implant solutions provides a wide range of innovative surfaces, making it one of the leading suppliers in the field of medical coating technology for orthopaedic and dental implants. The company relies on both the technological know-how of its employees

and the quality of HELUKABEL products. Its so-called vacuum plasma spraying systems are fitted with HELUTHERM® 145 MULTI-C control cables that control the 6-axis robots used to apply porous coating to the metal implants. The HELUKABEL cables demonstrate their fitness for the job by coping with conditions such as high UV radiation from the plasma flame, temperatures of up to 130°C (266°F), and constant changes between atmospheric pressure and vacuum conditions. To date, HELUKABEL products have been used in two systems at DOT GmbH medical implant solutions. A third one is in the pipeline.

Like us!
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We ❤️ Instagram

HELUKABEL has not only been available on Facebook and Twitter since June, but is also accessible through Instagram. There is a lot to discover – updates about the company, information about products and people, as well as sweepstakes! Link: www.instagram.com/helukabelgroup



Two cotton buds for one life

On October 17th, HELUKABEL staff had the chance to attend a recruitment event in Hemmingen to join the German Bone Marrow Donor Register (DKMS). Each new stem cell donor could potentially give a second chance at life to a blood cancer patient somewhere in the world. Cotton swabs were used to conduct a cheek swab to determine the tissue characteristics of the donor. HELUKABEL covered the costs of the laboratory analysis as well as all other costs associated with the event. 81 staff members added their support to DKMS fight against blood cancer by participating in the event.

Welcome Romania, Welcome Peru

Since the beginning of the year, HELUKABEL has been represented in Romania by its own subsidiary. In the capital, Bucharest, cables and wires for industrial and infrastructure applications are stored in more than 550 m² (5,920 ft²) of space. A team of eight takes care of customer concerns on site. Their focus is on short delivery times, technical consulting and the development of long-term customer relations. "Our mission is to fully satisfy our customers' needs by offering high quality products and bespoke service," says Managing Director Ionut Nica.

Another international HELUKABEL subsidiary opened its doors in Peru in August. The new logistics hub for western South America is located in a duty-free zone in the capital, Lima. From there, HELUKABEL products are shipped to customers throughout South America. The continuous economic growth in Peru over the last 10 years, which is mainly due to the mining sector, has resulted in an increase in demand for cables and wires. HELUKABEL wants to tap into this potential.



The journey was not an easy one: sandy and marshy ground, and extreme weather conditions posed complex challenges to the experts from Elektrotechnik Hafner GmbH when they were installing cables at Park Allgäu. Here is there story about the gigantic construction site.

The countryside village with 1000 holiday homes awaits visitors. It has been fitted with cables and wires from HELUKABEL.



Feat of strength in a holiday paradise

The French company's Groupe Pierre & Vacances / Center Parcs' holiday village in Leutkirch promises a relaxing holiday. The homes here sit among woods and meadows in beautiful Allgäu, have access to a huge swimming complex with a spa & country club, as well as a tropical swimming paradise, Aqua Mundo. But before families could feel at home there, several challenges had to be overcome. Among them was the installation of cables, as Franz Graile from Elektrotechnik

Hafner in Thannhausen explains. The basic provision of electricity to 1000 holiday homes presented the family-run company with a huge task. They had just under 18 months to get everything up and running with the aid of a 1000-person workforce. "We installed the entire power supply," reports Purchasing Manager Graile. Approximately 60 kilometres (37 miles) of cable had to be laid from the 17 transformer stations at the park entrance to every single house via trenches. "The 50 kilometres (31 miles) of

© Center Parcs

low-voltage cable was 30 to 50 millimetres (1.2 to 2.0 inches) thick, making it difficult to handle," he recalls.

DEEP BELOW GROUND

The ground was also very sandy and marshy, which meant the cables had to meet special demands. "When buried in this type of ground, they have to withstand moisture and be very robust because of the mechanical stress," says Graile. The NAYCWY cable with PVC sheathing stipulated by the project's electrical planner and designed, among other things, for underground installation, was delivered directly to the construction site on short notice by HELUKABEL.

CHALLENGE ACCEPTED

Thomas Hörmann, HELUKABEL's area sales manager, says the exceptional challenges weren't just the forest floor, but also the huge quantities of cable that had to be delivered at precisely the right moment. The largest drum had a diameter of three metres (10 feet) and weighed six tonnes. In his opinion, such quantities and weights can only be shouldered by a market leader such as HELUKABEL.



Cable installation was a real challenge in the face of variable weather conditions, a tight schedule and sandy ground.

Hafner employees also had a lot to shoulder: the construction site turned out to be a real feat of strength for them. Drums with 800 to 1000 metres (2625 to 3280 feet) of cable and weighing several tonnes had to be moved along the trenches on trucks and off-road vehicles. Graile describes the procedure. "First the heating pipes were laid in the trenches and covered with sand. These were followed by the medium and low voltage cables, which were also covered with sand to allow empty ducts for glass fibre connections to be placed on top of them. We were moving four to five drums along the edge of the trench at the same time," he reports.

The geological condition of the ground and weather did not make the work of the Hafner experts any easier. The trenches had to be pumped out several times after heavy rain, and the sandy sides of the trench partially collapsed. "But thanks to our expertise and the just-in-time availability of HELUKABEL products, we were able to react quickly," says Graile.

Despite the adverse conditions during the construction phase, the project was successfully completed, and vacationers can now enjoy a worry-free stay at their holiday paradise resort. ▶



Thomas Hörmann
has been working for HELUKABEL for more than 10 years and is currently area sales manager for Southern Germany. The high availability of HELUKABEL products and smooth logistics were important factors behind his impressive performance with the "Center Parcs" project.

Full speed ahead into the mobility revolution

E-mobility and Industry 4.0 are boosting business at Prowin A + W Automations-technik GmbH. The mechanical engineering specialist from Lower Bavaria uses networked robots and state-of-the-art camera technology to manufacture assembly lines for the automotive industry. HELUKABEL products help the company meet the extraordinarily high demands placed on these semi-automated or fully automated production lines.

The mobility revolution is in full swing. Alongside new economical combustion engines, the majority of vehicle manufacturers are currently developing fully electric or hybrid models. Rapid action is required to keep up with the advance of these drive technologies. Shop floors must be reconditioned to manufacture electric vehicles – something that often requires completely new assembly lines.

For Siegfried Anetseder, this means running his factory at full speed. "We can hardly cope with the inquiries from car manufacturers at the moment," says the founder and managing director of Prowin A + W Automations-technik. Its workforce, which now numbers around 210 employees, is spread across three locations: Hauzenberg, Hundsorf (both in the district of Passau) and Magdeburg. The specialist is a single source supplier of everything: sensor technology, measurement technology, robotics, test engineering, electrical assembly, software and connectivity to higher-level control and database systems. "This broad spectrum makes us a particularly powerful partner," says Anetseder.



© Tobias Bugala



Close customer cooperation: Günter Ehrentreich (right) clarifies questions about material procurement with Peter Degenhart, head of hardware planning and material procurement at Prowin.

Thanks to its own production facilities, the company can react flexibly and precisely to the requirements and wishes of its customers. Anetseder, who first set up a toolmaking business 25 years ago with his business partner Hubert Wimmer, describes on the latest expansion of the company: "Prowin recently built a new assembly shop at the Hundsorf site. Here, assembly lines for well-known automotive conglomerates are designed, built, tested and dismantled before being installed and commissioned at the customer's facility. The latest order was for a 104-metre (341-foot) long fully automated front axle assembly line for electric cars in which the motor and transmission, steering system, axle, and suspension components, basically the entire front section of a car, had to be assembled in 35 seconds."



"Inquiries, orders and sample inspections are handled in real-time."

Günter Ehrentreich, Area Sales Manager at HELUKABEL, key account BMW, AUDI

Such numbers aren't just impressive to the ordinary person. Even Siegfried Anetseder is sometimes amazed at the speed of manufacturing processes in the age of Industry 4.0. "Customers today expect 98 percent machine capacity," he says, explaining the requirements. This means an assembly line must function correctly around the clock with no interruptions.

to integrate robots into production lines, but anywhere flexibility and resilience are required. Typical products include control cables in a line's electrical sub-assemblies, hook-up wires in switching cabinet construction, data cables, glands and other accessories.

© Tobias Bugala

According to Anetseder, although cables only account for about five percent of the total cost of electronics in Prowin's customer projects, they play a disproportionately important role. Based on his experience, smooth assembly workflow is only possible if all components are high quality, exceptionally robust and durable: "We can't afford service interruptions," he says. For this reason, the company has been gradually upgrading to HELUKABEL products since 2016 and now completely relies on HELUKABEL quality for customer projects. Such quality is particularly important in production lines with industrial robots. "Think how often robots are continuously moving and rotating with parts in their arms in order to place them somewhere else."

At Prowin A+W Automationstechnik, HELUKABEL products are not only used

HELUKABEL's new special products for efficient EMC screening offer significant benefits here: Prowin is already using class 2 (multi-wire) and class 5 (fine wire), concentrically stranded, conductor grounding cables (tinned Cu) and copper straps in various cross sections and lengths. "These prevent electromagnetic waves from interfering with equipment," says Anetseder.

The managing director of Prowin A+W Automationstechnik GmbH is not only extremely satisfied with the quality of HELUKABEL products, he also appreciates the steady cooperation with the Hemmingen cable manufacturer and its



"These days customers expect 98 percent machine capacity."

Siegfried Anetseder, Managing Director of Prowin A+W Automationstechnik GmbH

commitment to delivery dates. Credit here also goes to HELUKABEL's area sales manager, Günter Ehrentreich, and his sales support colleague, Sina Staiger, who work closely with Peter Degenhart, Prowin's head of hardware planning and material procurement. "Our orders are usually delivered within two to five working days; even special products arrive within 14 days," says Degenhart. And there's a reason for this: "Thanks to good communication, we can always discuss new requirements on short notice. This ensures rapid processing and real-time sample inspections at all times. The rest is taken care of by our logistics centre," adds Günter Ehrentreich. ▶



Testing an assembly line on the shop floor at Prowin in Hauzenberg, Lower Bavaria.

ENERGETIC

Who: Prowin A+W GmbH, engineering, Hauzenberg, Hundsdorf, Magdeburg, 210 employees

What: Established in 1991, Prowin was founded as a toolmaker before turning itself into a highly skilled manufacturer of custom machinery and assembly lines for the auto industry.



Cabled container worlds

Containers are just steel boxes? Not if they're from Gföllner. The Austrians are manufacturers of sophisticated one-off items and small series – and rely on HELUKABEL's expertise and products.

Whether by ship, truck or train, enormous amounts of freight are transported in containers, day in, and day out. The standard sized steel containers have become synonymous with freight traffic throughout the world. Their deployment opportunities are far more diverse though, for example, modular container systems are used when fast and mobile solutions are required in plant construction or power plant engineering. They serve as temporary or permanent offices and facility rooms. The Austrian company, Gföllner Fahrzeugbau und Containertechnik GmbH, specialise in the production of exactly these types of containers, with a particular focus on custom-made and small series products. Over the years, the company has become the European market leader in the construction of large containers. The mega-boxes are up to 25 metres (82 feet) long, six metres (20 feet) wide and can carry loads in excess of 50 tonnes.

MODULAR CONCEPT IN XXL

Container engineering originated at the traditional company, founded in 1895, from the construction

of special vehicles. That was in 1970, and since then more than 50,000 units have been shipped all over the world from the Gföllner site in Sankt Georgen in Upper Austria. "There's no country in the world where our containers aren't located," says Patrick Samhaber, technical buyer at Gföllner and one of the company's 300 employees.

Gföllner manufactures, converts and tests the containers before transporting them to their destination. When they arrive there, they are often fitted together in a modular fashion. "For example, we once joined four containers together to create a large room for the switchgear that controlled power distribution in a copper mine," explains Samhaber.

Gföllner engineers the technology and infrastructure for these so-called modular room cells in collaboration with its customers. "We install whatever the customer wants - lighting, air conditioning, power distribution, ventilation, alarm and fire-extinguishing systems, to name a few," says Samhaber. The required cables run through an underground distribution chamber, which is a raised floor in the frame of the container.



Containers are often connected to form plant structures.

The top part, known as the hood, can be unscrewed from the base frame. This allows the cables to be laid quickly and safely in the floor. To make the cable installation within a module more flexible, the underground distribution chambers may be at different heights.

Such flexibility reinforces Gföllner's claim of "finding the right solution for all applications," as Patrick Samhaber puts it. And to ensure that the solution is the best possible, Gföllner relies on products from HELUKABEL.

"We install a total of 35,000 to 40,000 metres (22 to 25 miles) of HELUKABEL cables every year," says Samhaber. These are mainly control cables such as the MEGAFLEX 500, JZ-500 HMH or JZ-600 HMH. All three are halogen-free; the relevance of other cable properties depends on the application scenario and purpose. "If we're installing hydraulic systems in the containers, for example, cables must be oil-

resistant, so we order those types from HELUKABEL as well," says Samhaber.

OTHER COUNTRIES, OTHER STANDARDS

The entire container, including equipment and cables, must comply with a wide range of safety regulations. The hydraulic system mentioned above is just one example of many. "Needless to say, nothing in or on a container at a refinery is allowed to melt," says Samhaber, "and containers exposed to salty sea air must be treated with special paint. It's also critical to remember that each country has its own standards and certifications". In this context, it is important to understand that 90 percent of Gföllner containers are shipped abroad in a prefabricated state to permit quick on-site assembly.

Anyone operating a facility in the USA, for example, needs to be familiar with the National Electrical Code (NEC), the safety standard for electrical in-

© Gföllner Fahrzeugbau und Containertechnik GmbH, Helukabel Austria GmbH



"We did something like this for the Gföllner company for the first time in Austria; but it shows how well worldwide cooperation works within the HELUKABEL Group."

*Thomas Schmidbauer, Area Sales Manager
at HELUKABEL Austria*

stallations. "Compliance with such standards is extremely important," says Samhaber, "and HELUKABEL is a particularly strong partner for us in this respect." Thus, HELUKABEL contributes to the fact that Gföllner products are properly prepared for export.

8,000 METER SPECIAL CABLE - ACROSS THE ATLANTIC AND BACK

What this looks like in practice is illustrated as follows: Gföllner recently received an order for containers with pre-installed generators from an engine-based cogeneration plant in the USA. The customer wanted the DLO-Torsion 535kcmil power cable to be used in the containers as it met the requirements laid down in American standards for high mechanical loading and extreme weather protection. HELUKABEL was able to provide this cable in large quantities at the desired lengths – and by the required deadline. "Such cables are part of our product portfolio, so we were able to order them from our USA subsidiary," says Petra Hochrathner, area sales manager for this project at HELUKABEL Austria.

What followed was a logistical feat. "The cable drums, plus compression tools, had to be brought to us so that we could install the cables," says Patrick Samhaber. This meant shipping them from the USA to Austria, where Gföllner fitted and installed the 8,000 meters (26,250 feet) of power cable in and around the generators in the containers. They were then shipped back to the customer in the USA. The project was completed within half a year, an extremely short time for a project of such magnitude. "As far as the cables were concerned, it really was a case of travelling across the Atlantic and back," says Samhaber laughing. "It was indeed a mammoth undertaking," recalls Petra Hochrathner from HELUKABEL Austria. "We'd never done anything like that before. It also shows how well cooperation with the HELUKABEL subsidiary in the USA works."

For Patrick Samhaber, it's projects like this that distinguish Gföllner from their competitors. "We are faced with new tasks every day. We seldom have standard products because we normally just develop customised ones. That's what makes it exciting." A description that also applies to HELUKABEL – and the reason why Samhaber praises the Hemmingen company as "highly professional and customer-oriented." ▶



In use worldwide:
Gföllner also fulfills
special orders and
is supported by
HELUKABEL.

"We install whatever the customer wants in the container."

*Patrick Samhaber,
technical buyer at Gföllner Fahrzeugbau and
Containertechnik GmbH*

CUSTOMISED CONTAINER TECHNOLOGY

Who: Gföllner Fahrzeugbau and Containertechnik GmbH; 300 employees; already more than 50,000 containers manufactured; 70 percent export share.

What: The company, with headquarters in Sankt Georgen (Austria), was founded in 1895. In the 1970s, container technology was added to the portfolio of vehicles and trailers. Gföllner is now the market leader in Europe for large, lightweight containers.

Absolutely secure

Only genuine with a hologram: the Spanish company Pasaban S.A. makes banknotes counterfeit-resistant with a figure from mythology, and the support of HELUKABEL.

Euro banknotes with embossed holograms: Thanks to HELUKABEL, the SPF1000 runs smooth and precise

© PASABAN S.A.



The next time you hold a 100 or 200 euro note in your hand and wonder whether it's really genuine, try the following: hold the note against the light and look at the silver hologram strip imprinted on the right-hand side of the front of the note. Does the face of a young lady appear there? Congratulations, that's the mythical figure of Europa (after whom the continent is named) and proof that your note is not a forgery. Behind the security feature of the second generation 20, 50, 100 and 200 euro banknotes is a sophisticated process implemented originally by a family-owned company based in the Basque town of Tolosa. Pasaban S.A. is a specialty manufacturer of paper and cardboard processing lines, and can look back on nearly 100 years of company history. Today, it is a market leader in the paper converting industry, supplying more than 500 customers worldwide.

MACHINES MADE TO MEASURE

When it comes to designing and manufacturing of its machines, Pasaban places great emphasis on quality, precision and durability. Its high standards also apply to the cables and wires used in the processing lines. "Whether it's a sheeter, winding machine or paper ream wrapper, the individual components embedded in the machine always contribute to the overall quality. That's why we rely on HELUKABEL products for all our systems," explains Daniel Antonio, technical manager for electrical engineering at Pasaban. National and international standards are of particular concern for Antonio: "In order to be able to meet customer requirements in over 45 countries at all times, we need cables and wires with certifications for both the American and European markets." Because each machine is individually adapted to the needs of the customer, the Spanish company appreciates HELUKABEL's fast delivery times and high product availability. "After a precise analysis of the individual requirements, we develop a customised solution for every

customer. Delivery delays must not be allowed to jeopardise the often tight time schedule," says Antonio.

Pasaban uses HELUKABEL products in its SPF1000 foil stamping line, among other things. This high-tech machine stamps the "portrait window" security feature onto the notes as part of the process chain for the new euro banknotes. The line first perforates the special paper to the shape of the window and then applies a hologram strip bearing a portrait of Europa and the value of the banknote onto it. Several kilometres of flexible and highly flexible data, control and SENSORFLEX cables from HELUKABEL have been installed in the machine to ensure efficient and faultless operation. "The cables withstand the mechanical stresses of production and support optimum operating cycles," says Antonio. Electromagnetic compatibility (EMC) also plays an important role: "Our machines contain high-precision electronics. To avoid the risk of a system outage, effective screening must be guaranteed," explains the technical manager.



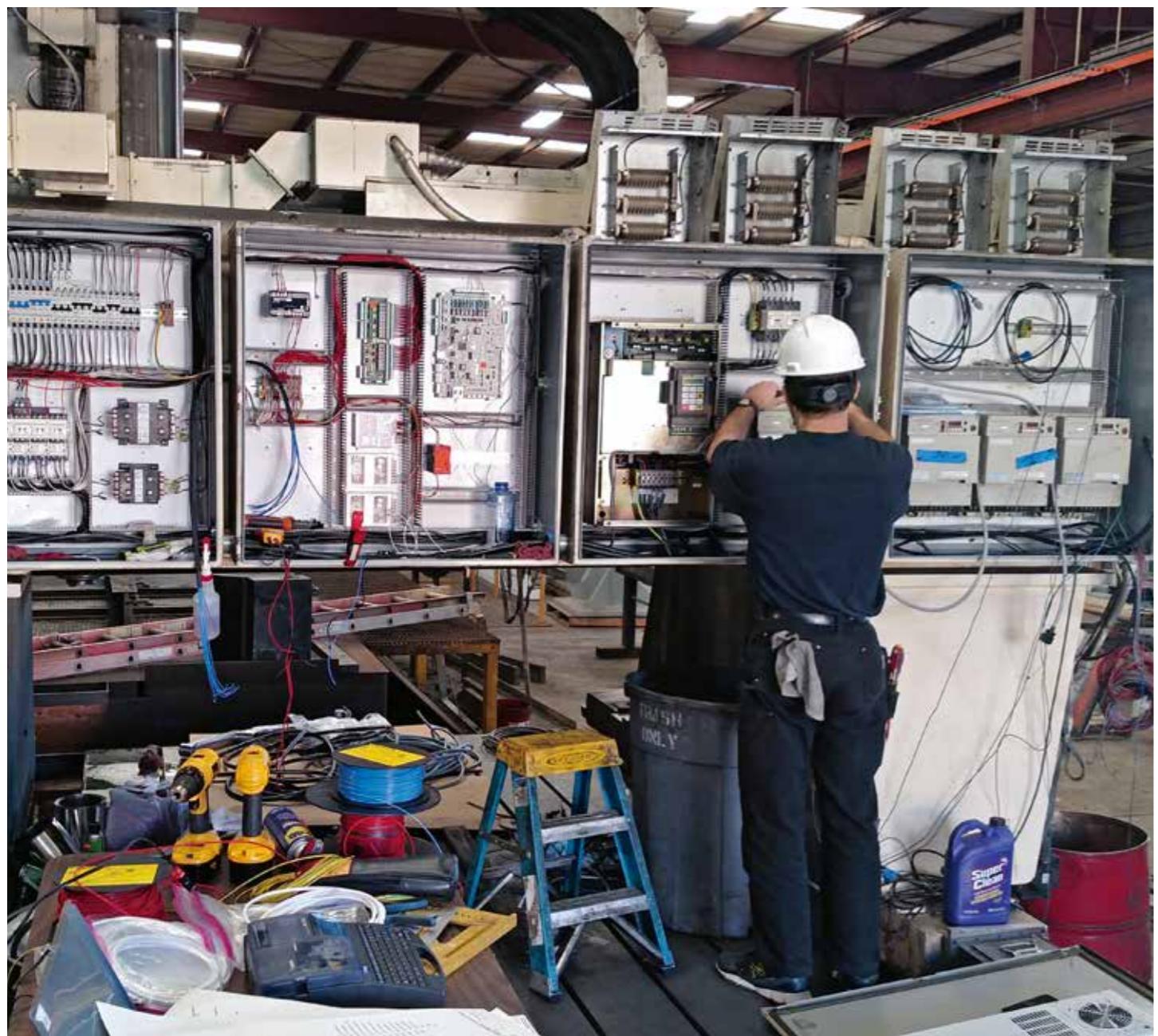
For Pasaban, the major challenge of the future is the integration of newer and more sophisticated technologies into its machines in order to guarantee the counterfeit-resistance of banknotes and other security documents. Antonio adds: "We not only want our equipment to be up-to-date with current trends, we also want to stay at the forefront of the global security technology sector – with the help of HELUKABEL." ▶

FROM SPAIN INTO THE WORLD

Who: Pasaban S.A.; 130 employees; over 500 customers and 700 machines installed in 45 countries
What: Based in Tolosa, northern Spain, the family business was founded in 1928 and specialises in the development and production of converting machines and solutions for paper, cardboard, special paper and security paper. The product portfolio includes sheeting, winding, stamping and paper ream wrapping machines.

Cable know-how using the four Rs

CNC Matters specialises in retrofitting existing machine tools with new technologies. The Californians rely on HELUKABEL products to do this.



© William Atkinson

Cutting, shaping and milling: almost every product in the world comes into contact with machine tools during its evolution. Today, most of these tools are fitted with Computerised Numerical Control (CNC) technology – in other words, with a computer solution tailored to the application.

Will Atkinson of CNC Matters (CNCM) and his team of four are tackling the growing requirements for CNC machine tools in the face of increasingly complex industrial manufacturing processes. "We also call what we do the four Rs: repair, retrofit, rebuild and replacement," explains Atkinson. The team repairs existing CNC systems and retrofits them with new technology. We also rebuild components already in use or replace them with state-of-the-art ones to meet current technical requirements. "Our focus concentrates on PC-based numerical controls for multi-axis applications," says Atkinson, whose company is based in Anaheim, southern California.

FIT FOR THE FUTURE

The large customer base from diverse industries including aerospace, defence, automotive and medical, appreciate its four Rs expertise and tailor-made, cost-effective solutions. Atkinson gives an example: "To meet a production deadline, one of our customers needed modern lathes, but his budget didn't allow for new ones. We were able to help out by integrating new technologies into an existing lathe."

Atkinson relies on HELUKABEL for the cabling of CNC machine tools. Recently, CNC Matters was tasked with retrofitting a 28-year-old horizontal boring mill with CNC technology. It had been out of action for some time and all the accompanying cabling needed replacing. The machine is now fully functional again – thanks to HELUKABEL. "The retrofit involved installing various types of cable and an assortment of FIVENORM single cores," says Atkinson. Thanks to their flexibility, CNCM uses different sizes and colours of FIVENORM to wire control panels.

The CNC expert explains why his company almost exclusively uses HELUKABEL cables such as the TRAYCONTROL series, which are required for all external installations outside the switching cabinet to supply power to equipment: "In order to comply with US standards, it's crucial for us to have a supplier that can deliver a wide range of flexible cables with the latest UL approvals from stock. HELUKABEL is the right company for that." Furthermore, because CNC machinery is a piece of high

precision equipment, data signal transmission must be noise-free. "That's why we use the flexible and screened UL LiY-CY-TP control cable as it guarantees electromagnetic compatibility," says Atkinson.

RUGGED MATERIAL

The company also uses the HELUKAT 100S ECO drag chain cable. This product withstands the stresses caused by moving machine parts, and has an oil- and grease-resistant polyurethane (PUR) outer sheath. "The robust construction of the cable allows us to quickly and individually dimension all our network cables at the customer's facility," says Atkinson.

Originality, flexibility and professionalism – that's what CNC Matters stands for, according to Atkinson. "And that's what HELUKABEL stands for as well, along with a vast product portfolio," says Ralf Jung, regional sales director at HELUKABEL USA for the western United States. What belongs together, stays together: a strong team.

A DECADE OF SPECIAL ORDERS

WHO: CNC Matters, Anaheim, California, USA, 5 employees, founded in 2000.
WHAT: CNC Matters specialises in retrofitting CNC machinery.

FOR WHOM: Its customers are also specialists in their field; they include GKN Aerospace (produces parts for Airbus and Boeing), General Atomics (defence and energy company), Applied Medical (medical devices and support equipment for the robot-assisted DaVinci surgical system) and the Hyundai America Design Center (design of next generation cars).

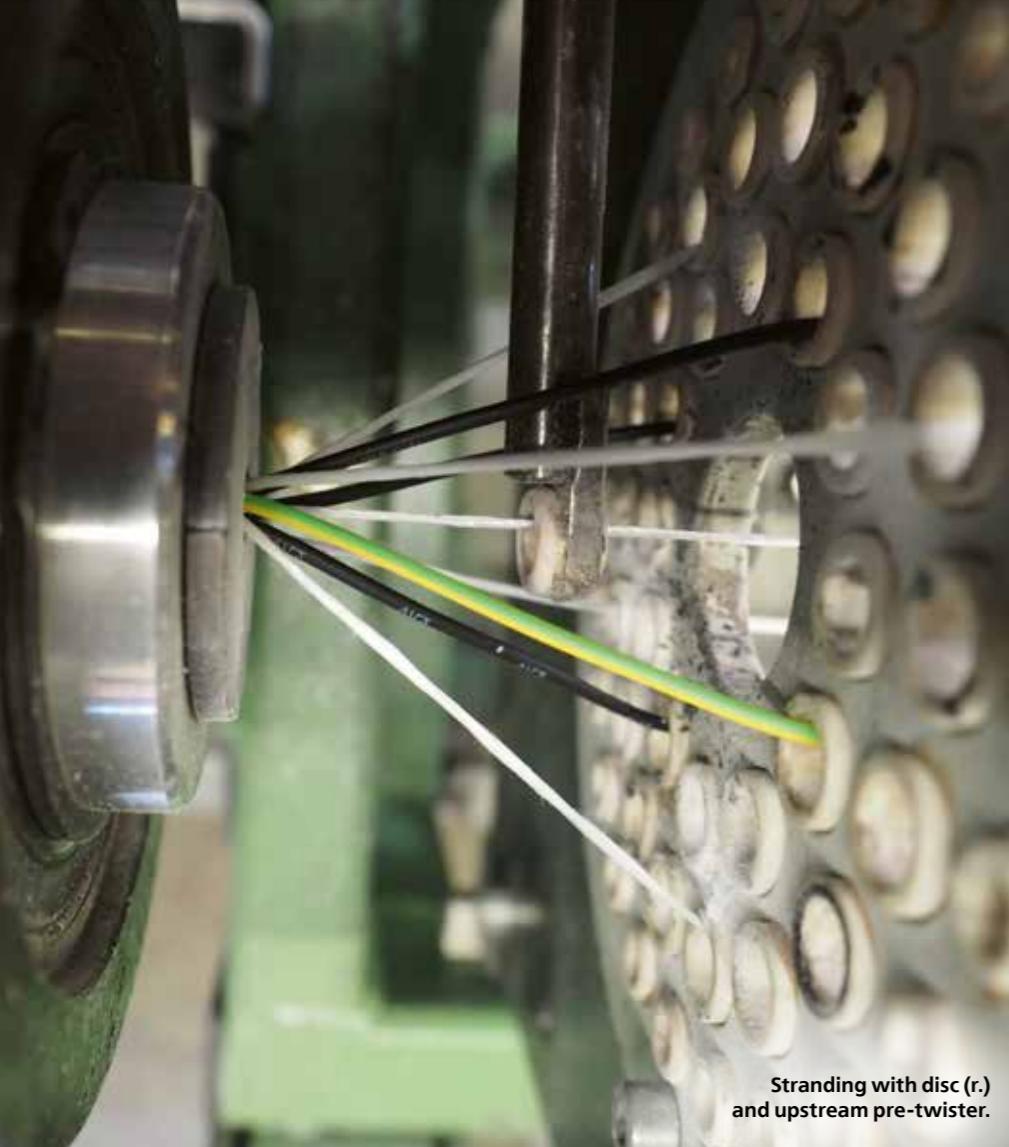


SWABIAN POWER FOR BAVARIAN LIFESTYLE

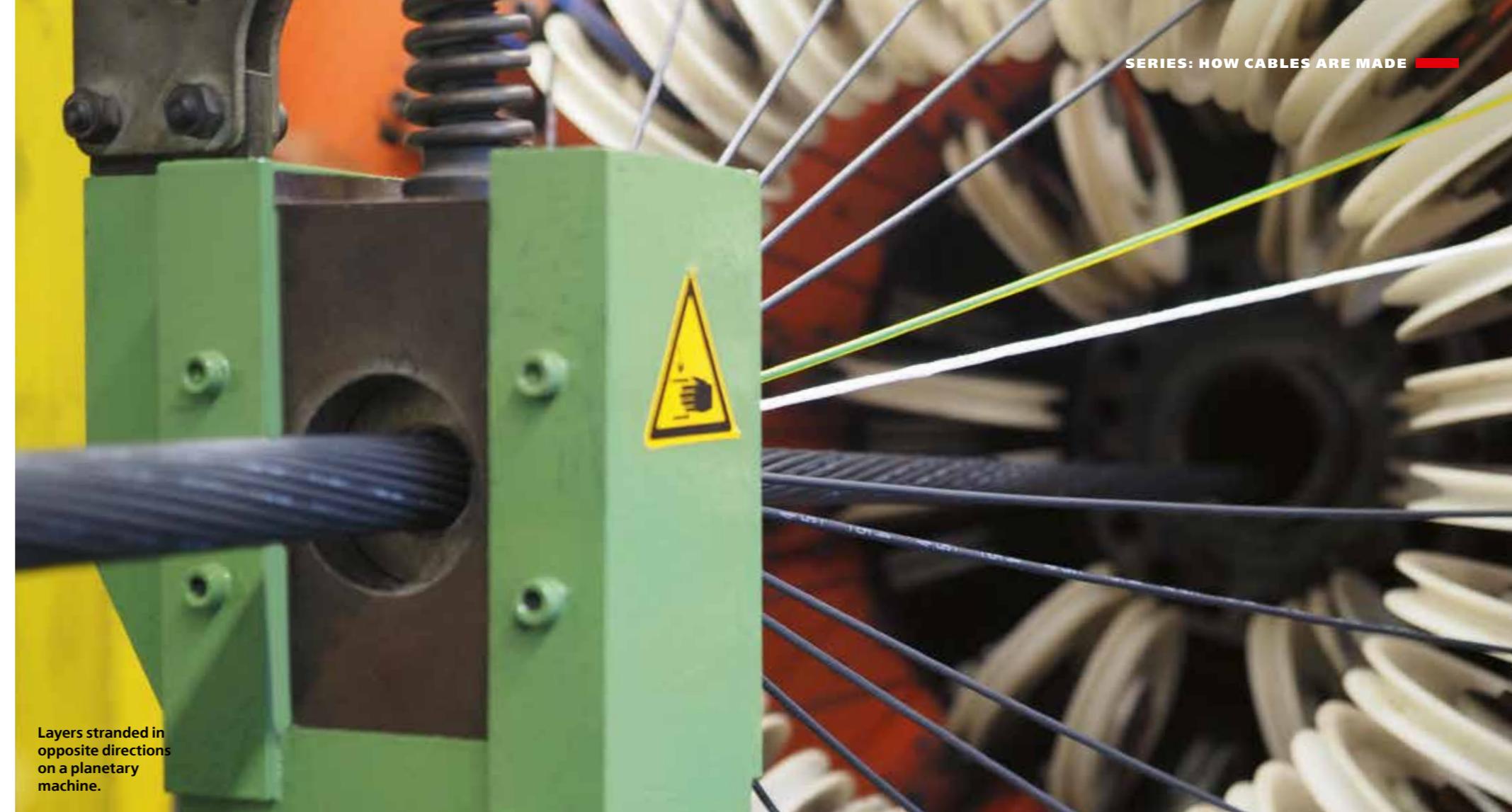
Culture, pleasure and conviviality: a visit to the Munich Hofbräuhaus is not only a top priority for tourists, but the world's most famous pub is also a popular meeting place for locals. Up to 3000 guests a day enjoy Bavarian delicacies such as knuckle of pork, white sausages and roast pork accompanied by a decent "Mass" (double pint) from the world-famous Hofbräu brewery.

Founded in 1589 by Duke William V of Bavaria, the Hofbräuhaus also offers a glimpse behind the scenes of traditional pub culture: if you want to know how beer is brewed or taste freshly brewed beer directly from the barrel, then sign up for a guided tour of the brewery. Between brewing kettles and bottling plants you'll learn interesting facts about beer and its processing, visit the brewery and fermenting cellar, and find out about beer bottling and storage.

Freising-based KRONES is one of the companies responsible for the smooth production of beer. As a system supplier, it equips breweries, beverage bottlers and food producers throughout the world. In Munich, the brewery, bottle washing and labelling machines, and packaging line, are all supplied by KRONES AG. They contain numerous data and control cables from HELUKABEL and contribute to Bavarian lifestyle with Swabian precision.



Stranding with disc (r.)
and upstream pre-twister.



WHAT IS THE LAY LENGTH?

An important measure during stranding is the lay length. It is defined as the length of a single stranding element when it is fully rotated about its axis. For example, a lay length of 70 mm (2.75 in) means each conductor makes a helical rotation of 360 degrees around the strand axis every 70 mm. The shorter the lay length, the more flexible the cable. The lay length also determines the amount of material used. The individual cores must be longer than the finished cable as the stranding process shortens the cable; the shorter the lay length, the higher the contraction factor.

© HELUKABEL/Reimar Schuster, Fotostudio Lichtblick

Ask the expert

Mr. Schmidt, why are additional filler materials inserted between conductors during cable production?

Filler materials have several functions: first, they are used to shape the cable, i.e. to make it round. They also increase stability by ensuring that the cable cross section does not contain any cavities. The filler can be placed directly in the centre of the cable or around it. The former is referred to as the core or core filler. Fillers are non-conductive and usually made from polypropylene.

What does stranding with back-twist mean?

Andreas Schmidt is core stranding product group manager (PG4) at the Windsbach plant.



Laying up

AFTER INSULATION, the next process step is to strand the single cores together, i.e. to mechanically twist them together in accordance with predefined geometric specifications to reduce the mutual interference between the electrical conductors caused by magnetic coupling. Stranding the cores together also serves another purpose: it ensures that the finished product is mechanically robust and flexible. In practice, cores can be stranded together in different ways, but pair twisting is the simplest. As its name suggests, this involves twisting two single cores into a pair, and is typically used in network or telephone cables. The stranded cores can be subsequently twisted together. Seven equally thick elements can form a concentric circular construction; with higher numbers, the pairs are stranded in layers. For cables that have to withstand high mechanical stresses and movements, bundle stranding is recommended. This involves twisting several bundles of single cores into one main bundle. Stranding in bundles causes all cores to change their inner and outer radius several times over a fixed distance in the bent cable. As a result, the tensile and compressive forces balance each other out.



SERIES OVERVIEW:
WIRE DRAWING // STRANDING // CORE INSULATION // **LAYING UP** // BRAIDING // SHEATHING // MARKING

Trade Fair Dates

NOVEMBER 2019

China International Import Expo
05.-10.11.2019, Shanghai, China

ADIPEC
11.-14.11.2019, Abu Dhabi, UAE

Elmia Subcontractor
12.-15.11.2019, Jonkoping, Sweden

15th Congress of Industrial Maintenance
21.-22.11.2019, Braga, Portugal

WindEurope Offshore
26.-28.11.2019, Copenhagen, Denmark

Smart Production Solutions (SPS)
26.-28.11.2019, Nurnberg, Germany

JANUARY 2020

CUE
13.-15.01.2020, Rotterdam, Netherlands

FEBRUARY 2020

Electricity 2020
05.-07.02.2020, Warsaw, Poland

Southern Manufacturing
11.-13.02.2020, Farnborough, UK

SIAF Guangzhou
26.-28.02.2020, Guangzhou, China

MARCH 2020

Light & Building
08.-13.03.2020, Frankfurt, Germany

Automaticon
17.-19.03.2020, Warsaw, Poland

CIPPE
26.-28.03.2020, Beijing, China

Power & Electricity World Africa
31.03.-01.04.2020, Johannesburg, South Africa

APRIL 2020

360 Tech Industry
02.-04.04.2020, Porto, Portugal

Hannover Messe
20.-24.04.2020, Hannover, Germany

Drives & Controls 2020
21.-23.04.2020, Birmingham, UK

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Why does Electromagnetic Compatibility (EMC) need to be guaranteed for some cables?

Everyone's familiar with the phenomenon of electromagnetic noise: the WiFi connection suddenly stops working, the radio crackles or the telephone handset is making a noise.

The sources of these unwanted signals can be very diverse. They range from mobile phones, laptops and transmitters to transients in power transmission lines to motors and power sources. The so-called cause is interference. It occurs whenever two or more electromagnetic radio waves collide. Interference can be destructive or constructive; the troublesome one is actually the positive-sounding one variant. During destructive interference the waves cancel each other out, but constructive interference causes the waves to overlap and amplify each other. This results in noise, which in extreme cases, may cause devices or entire systems to stop working altogether.

To avoid this, products must be made with electro-magnetic compatibility (EMC).

The electromagnetic compatibility of cables and wires is achieved through screening. The screen surrounds the electric field and prevents both penetration and emission of electromagnetic waves. EMC requirements for screened cables are regulated by international and national standards. The surface transfer impedance (also called coupling resistance) is a measure of the screening quality and is defined as the voltage ratio on the screening of the disturbed system to the current in the disturbing system. In industrial applications, for example, a screen transfer

impedance < 150 MOhm/m at 30 MHz is required. Measurements are based on DIN EN 50289-1-6 and IEC 62153-4-3.

The materials used for screening always depend on the application area. In antenna engineering, for example, corrugated copper screens are placed around the coaxial cables. By contrast, the screened cables used in industrial applications must be flexible and withstand particularly high stresses. HELUKABEL has developed a custom screened cable to provide effective screening for a plasma system, even when operated by a 50 kHz high frequency clocked power supply.

In this case, a "real screen" comprising of different foils, fleeces and braids was used. A high level of coverage in the braid is important, but the "the more the merrier" principle does not apply here. Using more copper might, for example, worsen the transfer impedance value and hence, the screening effect. The constantly rising demand for hybrid constructions (e.g. those with combined power and data cables) is increasing the importance of effective screening. The cable designer's skill therefore lies in developing innovative screening solutions that take into account the application's parameters, costs and individual customer requirements in order to ensure high levels of operational reliability and noise immunity.



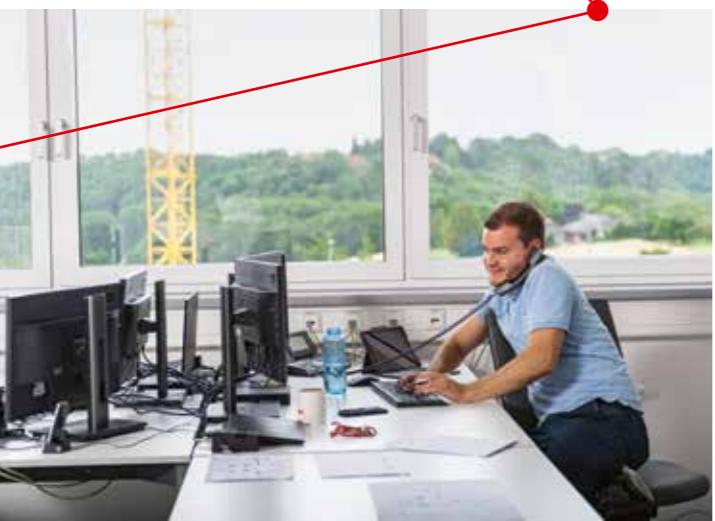
**11:20 AM**

The monitoring tool has detected a fault in the Warehouse Management System (WMS). After a brief investigation, Vetter pinpoints the error to the automated mini-load AS/RS. Alongside Alexander Bachmann, the head of logistics engineering, he repairs the affected components in the conveyer system.



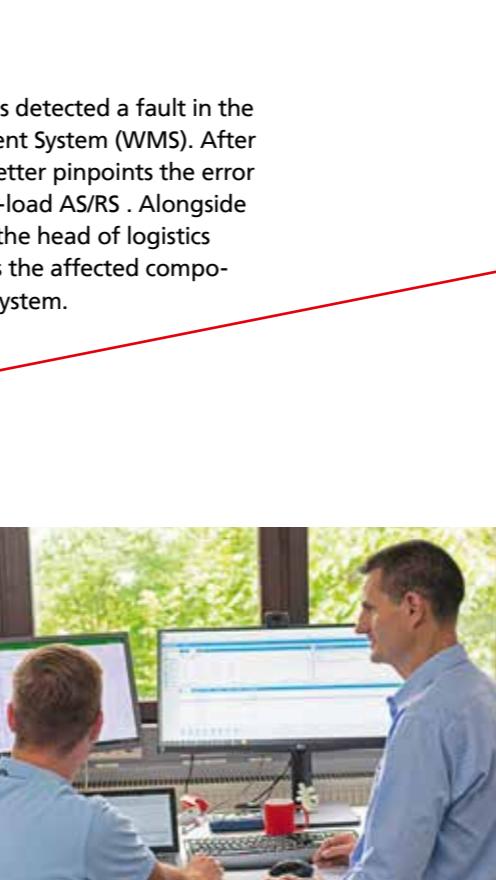
From CRM to TSF with Timo Vetter

Timo Vetter is an IT application architect at HELUKABEL in Hemmingen. Here you can read about what he gets up to on a typical Tuesday.

**07:45 AM**

Timo Vetter lives in Hemmingen and today, like every day, he walks to work. When he arrives at his desk, the first thing he does is check his emails and incidents picked up by the helpdesk system and monitoring tool. These few minutes decide how stressful the next few hours are going to be.

© Ralf Grömminger

**09:30 AM**

Timo Vetter synchronises new requirements and their implementation in the Customer Relationship Management (CRM) program with Sales Manager Jörg Kairies.

**12:05 PM**

During their lunch break, the IT specialist and his colleague, Matthias Volkmer, take a walk. They both appreciate the fresh air and exercise and use the opportunity away from their desks to have a chat.

**13:45 PM**

As a representative of the IT department, Timo Vetter participates in an e-commerce workshop. The team discusses the next steps for the company's new online presence, how it will link to existing systems, and what interfaces are necessary.

**16:10 PM**

In the afternoon, Timo Vetter is asked on short notice to install a new camera to ensure that documenting construction of the new administration building can continue.

**18:30 PM**

Since Timo Vetter spends most of his day in front of a computer, he looks forward to clearing his head by playing football this evening at the TSF Ditzingen Sports Club. Since it's Tuesday, he'll be training the club's Youth B team.

“We verify, test and organise the certification process. This assures our customers that they are always in compliance.”

Horst Kappler (65), who has been with HELUKABEL for 26 years, looks back on 35 years of work experience with cables and wires. As head of engineering, he not only keeps a constant eye on every product characteristic, but also oversees, along with his team, compliance and implementation of norms, standards and policies.

How have requirements for cables and wires changed during the 26 years of your career at HELUKABEL?

They've virtually exploded! Today's customers expect a greater variety of products and customised solutions with regards to heat resistance, mechanical stability and chemical resistance, for example. In general, the demand has risen for special cables. Take for example drag chain cables in conjunction with international approvals; this is an area which has grown rapidly in importance over the last few years, mainly because of our export-oriented machine manufacturers. Fifteen years ago we had hardly any inquiries about halogen-free control cables meeting extreme fire protection requirements. Nowadays, this is part of the standard. In this regard, the requirements laid down by the Construction Products Regulation is another topic with major implications. Furthermore, the materials used to make cables and

wires have also changed; as seen in the REACH Regulation and RoHS Directive. Basically, the pace of business has accelerated, but thanks to our extensive warehouse range and flexibility to meet individual requests, we can find solutions quickly.

As engineering manager, what special challenges do you face and how do you deal with them?

Our work is very diverse. We deal with customer support, standards and the relevant certifications, new and enhanced product development and, of course, the catalogue, i.e. the data sheets detailing the product characteristics. It's important to maintain an overview and work meticulously; our customers rely on our technical data, and installation and assembly information. Everyone in our department has to be able to do everything; the specialist is also required to be a generalist:

standards are updated, product variety is increasing, and our catalogue is extensive. 25 years ago it had 90 pages and was more like a booklet. Today it contains nearly 1200 pages. Its extensive technical appendix has turned it into a kind of reference book.

It's this diversity that makes daily work and business so exciting.

In your opinion, what makes HELUKABEL so technically unique?

Safety. We test and verify. We have our own laboratories and test centres with state-of-the-art equipment both in our central engineering department here in Hemmingen and at our cable manufacturing plants in Germany and China. Just last year, an extensive investment was made in additional test facilities, which now allows us to gain more precise information about the real-world performance of our cables and to simulate customer appli-

© Tobias Bugala



HORST KAPPLER HAS TO DECIDE!

Classical or Rock?

→ Short and brief: my favourite is Marc Knopfler.

Convertible or SUV?

→ Both are aesthetically pleasing, but I wouldn't get either. I place a lot of value on space; so, the size of the trunk is the most important criterion for me when choosing a car.

Beer or wine?

→ Clear vote for wheat beer!

Fizzy or still water?

→ Fizzy – refreshes more.

What do you like best: savoury or sweet snacks?

→ I don't have to think about that too long: sweet! It always fits, in every way.

Tea or coffee?

→ One cup of coffee with breakfast is enough for the whole day!

Football or tennis?

→ Actually, every type of sport interests me. If I must decide: Football! And my inclination to certain club colours is surely well known...

Fish or meat?

→ Meat – prepared on my own grill.

Camping or all-inclusive?

→ I would prefer all-inclusive; comfort is in the foreground when on holiday.

cations. For example, we can test cables for moving applications under arctic conditions at -60°C (-70°F), and cables used in high temperature environments up to +200°C (+392°F).

We also work very closely with leading test and certification companies, which means we can manufacture our products with the certificates required for national and international markets. Among our most important approvals are VDE, HAR, UL/CSA, CCC, EAC, DEKRA and DNV GL. Many of these external certification companies perform tests during production to guarantee the quality of HELUKABEL products on-site. Even if cables and wires deviate from specific regulations, this allows us to test and certify them in accordance with existing VDE standards and issue a VDE Registration Number. In my opinion, our customers can be assured that they're in compliance in all respects.

You're also the contact person for customers with technical problems. Are you always able to help them?

First, let me point out that the long-term cooperation and exchange with our customers means they often know a lot about our products. The result of this is that they ask increasingly differentiated and specialised questions. Thanks to my 35 years of experience in the cable industry though, I'm glad to say I'm rarely lost for an answer. At HELUKABEL we always find a solution, and if necessary, we call upon the expertise of our colleagues at the production plants. If we don't initially find an answer to a specific problem, we carry out tests in our laboratories and test centres. This means we can promptly answer questions about the chemical

resistance of an outer sheath, for example. So yes, we do always find a solution! We develop them in customer dialogues, and if requested, will gladly do on-site appointments.

You're currently preparing your successor to take over when you retire in 2020. What will you miss most about your job?

I've always loved the variety of my job and working in my department: every day you could be sure there'd be some new task or problem awaiting you. But you shouldn't take yourself too seriously as an individual; we've only mastered all these challenges over the years because we've always worked as a team. This applies particularly to customer support; when colleagues are confronted with a complex question from a customer, they ask around. All team members draw on their experience to make a contribution to the solution.

What will you do with your free time?

My plan is to "clock more laps", in other words, go running more often. I first discovered and nurtured this passion a good 10 years ago. Open cross-country races have turned into half marathons; and half marathons into marathons. While running, everything around me becomes quiet and I can listen to myself. It's a great experience. Unfortunately, though, I've been too busy lately to train regularly.

Nevertheless, I'm already looking forward to the next Ditzingen Sponsored Walk and Run, a big fundraising event for the Cystic Fibrosis Charity, and one I have been participating in with the HELUKABEL running team for years. Until then, I'll be looking after the house and garden; and, as everyone knows, there's always plenty to do there!



Welcome to the Czech Republic!

Interesting facts about the HELUKABEL subsidiary and the country.

- ▶ HELUKABEL Czech Republic was founded in 2002 and is located in the quiet town of Libušín, a 20-minute drive from Prague.
- ▶ The 28 on-site employees work in sales, logistics and administration. Among them are two apprentices. The managing director is Stefan Meyer, a graduate of economics and Czech Republic expert.
- ▶ The subsidiary serves approximately 800 customers across the Czech Republic and Slovakia in various sectors including mechanical and plant engineering, wholesale and apparel manufacturing.
- ▶ The best-selling products are the JZ-500 control cable, TOPSERV servo cable and assemblies, as well as custom-made special cables.

FUNFACTS



When it comes to beer consumption, the Czechs are world champions.: On average **THEY DRINK 138 LITRES A YEAR** (compared to 101 litres in Germany and just 48 in Spain).

There are approximately 500 breweries in the Czech Republic, one for every 20,000 inhabitants. Beer accompanies the traditional Czech meal of roast pork, cabbage and dumplings.



Czechs are **BOOKWORMS:** the country is one of the world's best when it comes to libraries, offering five for every 10,000 inhabitants.



Fairy-tale records surroundings: there are around **2000 CASTLES, FORTS AND RUINS** in the Czech Republic - that's significant in Europe. The Prague Castle is also listed in the Guinness Book of World Records as the largest castle complex in the world.



Ice hockey is far more important than football in the Czech Republic. The country has won **TWELVE WORLD CHAMPIONSHIP TITLES** and an Olympic gold medal in the sport.



AHOJ is a common and colloquial greeting in the Czech Republic. It was "imported" by seamen in the 18th century, and is actually an old English sailor's greeting that quickly spread throughout the country.

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KVA-XXL-MS – The Gland for Large Diameter Cables



THE ADVANTAGES AT A GLANCE:

- brass cable gland enables seal over a large area
- suitable for large clamping ranges (42 mm to 95 mm / 1.65 in to 3.75 in)
- for use at -40°C to +135°C (-40°F to +275°F)
- IP68 dust and waterproof protection
- EMC version also available



THE NETWORKER

When it comes to figures, contracts or legal matters, Johannes Sailer's the man! He's HELUKABEL's authorised signatory and although his area of work might seem dry at first glance, when the head of finance describes what he does, he captivates you from the word go.

There's no typical working day for Sailer, "which makes for a lot of variety". And that's what makes the job so exciting. A key area of his work is budgeting and managing cashflow at HELUKABEL GmbH and its subsidiaries; therefore the 40-year-old is in constant communication with banks, tax consultants, auditors and lawyers. Johannes Sailer is also the contact person for customs clearance and compliance. In addition, he and his team are responsible for the group's insurance policies and developing the framework of agreements up to the point of signing. Sailer is not only able to handle figures, he also understands the fine print.

His cooperation with overseas subsidiaries brings Johannes Sailer into regular contact with other cultures, which helps shape the continued development of the group. The business economics graduate greatly appreciates the regular exchange with all departments at HELUKABEL: "You deal with so many nice people!" Special projects are also on the authorised signatory's to-do list: he is particularly proud of the construction of the new corporate office building in Hemmingen. When completed, all departments will work under one roof. "This will give us space to exchange information on a daily basis and create an even better team spirit."