

POWER

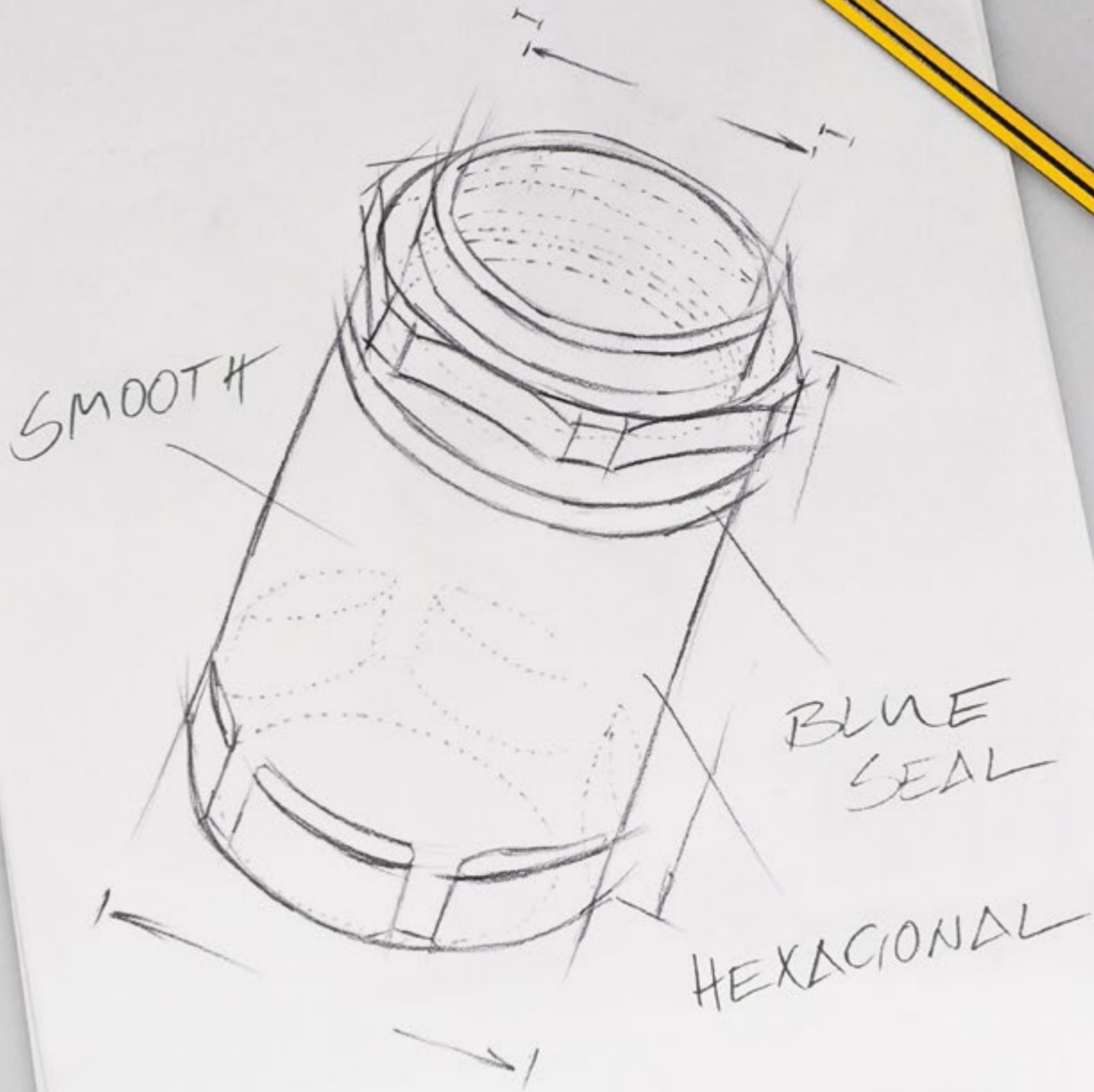
#9

Motors for the ISS

**How ASTRO takes our products
to outer space** page 18



WHAT COULD IT BE?





On the morning of June 6th this year, German astronaut Alexander Gerst tweeted, “Just got up and showered for the last time for six months,” before he and his two Russian and American colleagues set off on the Horizons space mission. After 34 circles around the Earth at a speed of nearly eight kilometres per second (five miles per second), they reached the Soyuz spacecraft orbiting the International Space Station (ISS) two days later. Since then, the astronauts have been exploring space at an altitude of approximately 400 kilometres (249 miles) and conducting experiments to provide answers to questions on topics such as biology and medicine.

Believe it or not, HELUKABEL is also on board the ISS. Our customer, ASTRO Motorenengesellschaft mbH, manufactures an incredible range of engines and transmissions; even for the International Space Station. Read our cover story (page 18) to find out more about the drive specialist whose products are in demand worldwide. You’ll be amazed at all the places where ASTRO motors are used.

Let’s leave outer space to come back to reality: we’ve given POWER a new look and made the magazine even more reader-friendly. What’s more, there are many exciting and interesting stories to discover. I hope you enjoy reading them.

Yours sincerely,
Helmut Luksch, Managing Director HELUKABEL GmbH

A handwritten signature in black ink, appearing to read 'H. Luksch', written in a cursive style.



On Land, Under Water, and Aboard the ISS

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In Brief

New Additions

HELUKABEL® INSTRUMENTATION CABLE PAS 5308

With its low cable attenuation and low mutual capacitance, the PAS 5308 instrumentation cable facilitates transmission over long distances. It is compliant with the IEC 60332-3-24 flame test and distinguishes itself through good earth screening. The steel wire armour (SWA) makes the cable suitable for direct burial in the ground.

HELUPOWER® 1000 RV-K

The HELUPOWER® 1000 RV-K cable with XLPE-insulation withstands operating temperatures of up to +90 °C (+194 °F) at the core. This 0.6/1 kV cable can be laid in protected systems or in the ground, and is also UV- and oil-resistant.

HELUPOWER® H07RN-F LSOH

The halogen-free, rubber-sheathed cable is suitable for permanent submersion in standing water up to a depth of 100 metres (328 feet) (AD8). It is able to withstand UV radiation and is resistant to oils and lubricants.

HELUTHERM® FR BS 7629

This halogen-free and UV-resistant smoke detection cable is flame-resistant (up to +180 °C /+356 °F) and is LPCB UK certified.



Raise the Curtain!

A new cultural and entertainment centre is currently under construction in Hong Kong's Kowloon district. The Xiqu Centre is already a real architectural stunner; the building's curved forms resemble the opening and closing of stage curtains. Beginning summer 2019, visitors can experience, among other things, traditional Chinese theatre in two auditoriums. The Grand Theatre seats 1,073, and the Tea House Theatre more than 200. Behind the scenes, the Dresden-based SBS Bühnentechnik GmbH ensures perfect stage productions. It develops and produces stage

technology systems worldwide and also takes care of the on-site installation. The company installed 70 motorised hoists and 16 point hoists to be able to hang and move the curtains in the theatre in the Xiqu Centre. HELUKABEL supplied the flexible control cables required for signalling, as well as the power cables for the motor that opens and closes the curtain. "The cable specialist had already proved itself with fast delivery times on other projects. Once again, everything was available quickly and on time at the construction site in China," reports SBS Bühnentechnik GmbH. ◀

10 Tonnes

and three metres (10 feet) in diameter – that's the size of the largest cable drum in HELUKABEL's portfolio.

Watch the new CORPORATE
MOVIE from HELUKABEL:
www.helukabel.de/corporatemovie





Now in Denmark Too

HELUKABEL GmbH has opened its first subsidiary in Denmark and thereby continues to develop its international business network. Based in Herlev, near Copenhagen, Managing Director Kim Clante Hansen and his colleagues are now able to visit customers and business partners at their premises.

A large number of globally active companies in the fields of mechanical engineering and plant construction, as well as in the shipping industry and the renewable energy sector are based in Denmark. HELUKABEL wants to tap this potential and establish itself in the market by maintaining a local presence. ◀

New Premises for HELUKABEL UK

The British HELUKABEL subsidiary has moved. The new headquarters fittingly bears the name of "Cable House" and is located near the port city of Liverpool. Apart from more modern offices, the subsidiary now has almost four times more storage space than before. With

2,000 square metres (21,528 square feet), the new warehouse has sufficient space for future growth. HELUKABEL UK specialises in cables for wind turbines, automation, control, robotics, and solar power; their network covers all of Great Britain. ◀



Stunning Light Spectacle

The Goethe Grammar School in Regensburg, Bavaria, recently came up with an absolute eye-catcher: a 1.70 x 1.00-metre (5.58 x 3.28-foot)-high wall with 5,184 LEDs that conjures impressive projections and light effects. The wall was planned and built by students Daniel Taciak (19) and Christoph Kiener (18). Their physics teacher Harald Tietz was in charge of the project. The students first purchased 87 metres (285 feet) of LED strips for the wall. Kiener explains: "At maximum brightness, power consumption is approximately 311 amps, which meant we had size the power cables accordingly. You can't

just get things like that from the nearest electrical retailer. So we did some research and came across HELUKABEL." The Hemmingen/Stuttgart-based company supported the project and supplied a variety of power and data cables. These cables connect the LEDs to the control boards, which in turn can be controlled by a networked PC. With the aid of special software, images, videos, and lighting effects can be displayed on the wall. The three project members are proud of their work and "The LED wall was a big hit at our open day, and it certainly wasn't the last time we'll be using it," said Kiener with delight. ◀



Delivery Service on the Tarmac

Gluten-free, vegetarian, kosher, or standard: on every flight, a wide variety of meals land in the flight attendants' trolleys. They are brought to the aircraft by scissor lift catering trucks from DOLL Fahrzeugbau GmbH.



Catering trucks from DOLL deliver food to aeroplanes of all sizes including the Boeing 747, as shown here.



© Doll Fahrzeugbau GmbH

HELUKABEL custom developed two cables for the catering trucks. They have to withstand de-icing fluids and UV radiation at airports all around the world.

On the flight from Frankfurt to Madrid, economy class guests are eating their noodles with chicken, while business class travellers enjoy either steak or cod served with potatoes. The fresh meals are supplied by a catering company whose most important helper is a scissor lift catering truck from DOLL.

Uwe Trox, mechatronics manager at DOLL Fahrzeugbau GmbH in Oppenau, near the Black Forest, explains how the meals reach the passengers: "The menus are prepared by the respective catering contractor in a commercial kitchen, often on the airport grounds. Here, all meals are cooked, shrink-wrapped, marked and loaded into the trolleys that are later pushed through the aircraft. This is where our catering truck comes into operation. First it reverses up the loading ramp of the

commercial kitchen. Once the vehicle is in position and the internal cooling system has been connected to the mains, catering staff open the roller door and push the trolleys across the loading ramp into the container on the truck."

When the container is full, the driver makes his way to the waiting aircraft. On arrival, the hydraulic supports of the catering truck are extended. These ensure the truck stays firmly on the ground even during strong gusts of wind. The driver now climbs into the container and is lifted upwards along with all the cargo. When he's at the correct height beside the aircraft, he puts the ramp and guardrail into the position at the aircraft door.

EXACT DISTANCE "The vehicle and aircraft must never touch each other," explains Uwe Trox. "This could lead to damage of the outer layer on modern aircraft with high-tech materials, which would be totally invisible without technical aids. Ultrasonic sensors on DOLL trucks thus ensure that the required distance between the ramp and aircraft is maintained. The front access barrier is not unlocked until this position has been reached. A stable folding plate bridges the remaining gap so the trolleys can be safely rolled in.

"Planes only earn money when they're in the air, which is why loading must be very precise and very quick," says Michael Harter, electric catering product manager at DOLL. "Disruptions incur high costs." Afterwards, the container is lowered, the supports are retracted and the catering truck returns to the kitchen where the procedure starts from the beginning again.

There's room for approximately 40 trolleys in the container which must be permanently air-conditioned to ensure the refrigeration is not interrupted. The food

At the press of a button, the container with the food is quickly and precisely lifted to the aeroplane door. Michael Harter, Uwe Trox, and electrician Andreas Bolz (from left to right) demonstrate at DOLL's factory how easy it is.





isn't warmed up again until it is on the aircraft. "DOLL vehicles are used by almost all large and important catering companies," says Trox. "This is because safety regulations are getting stricter at airports around the world, and our technologies are leaders in personnel and material safety."

READY FOR THE WORLD Scissor lift catering trucks have been part of the Oppenau-based company's product range for more than 20 years. Initially a niche product alongside timber transport, heavy-load hauling, and military vehicles, the company has been serially manufacturing catering trucks since 2005. In many cases, the customer provides the chassis on which the DOLL lift sits. It sells three types: the x-cat M with a half-size cab for small aircraft with a sill height of less than one and a half metres (five feet), the x-cat M with a full-size cab for larger aircraft with a sill height of up to six metres (20 feet), and the x-cat L for the world's largest passenger plane, the Airbus A380, which can be raised more than eight metres (26 feet). DOLL is one of the few manufacturers worldwide certified to serve the Airbus A380.

"The door on the Airbus A380 is on the upper deck above the wing," explains Michael Harter. "This means that the entire body has to be moved forward three metres (10 feet) at a height greater



He knows the answer: Rainer Maier, qualified electrician and regional sales manager, has been the contact person for DOLL Fahrzeugbau GmbH for many years. He always finds the right solution for even the most technically demanding requirements. Most recently, his expertise was in demand during the development of the special cables for the new generation of catering lift-trucks. DOLL has been relying on HELUKABEL for ten years now in the heavy-load transport sector.

than eight metres (26 feet). To precisely position the platform at the aircraft door, the operator can laterally extend the platform by up to 60 centimetres (24 inches) and the ramp by a further 110 centimetres (43 inches)." The large sill height and the sliding of the container required a special support concept. The support cylinders usually extend just half a metre to each side to ensure they are capable of withstanding strong gusts of wind. In the USA however, where even stronger air currents must be accounted for, they have to extend a whole metre.

For the American market, DOLL supplies kits to Bridgeport, near Philadelphia, where the DOLL America subsidiary builds them onto trucks. DOLL superstructures can be adapted to all common truck chassis, meaning they can also be carried on public roads. "This is important for catering at JFK Airport in New York for example, where the commercial kitchen is 40 miles away," says Uwe Trox.

DURABLE CABLES Since 2015, HELUKABEL Megaflex 500 and Multiflex 512 cables as well as two custom HELUKABEL cables have ensured that containers can be moved up, down, back and forth on the catering trucks. It was crucial here to update the controllers in all vehicles from a hard-wired to a programmable logic controller (PLC). "For this, DOLL required hybrid cables capable of transmitting electrical energy and electronic bus signals," explains Rainer Maier, regional sales manager at HELUKABEL. "So we developed the two custom cables for the catering trucks with modified cross sections and screening as well as twisted pairs for CAN bus transmission."

The cables have to endure a lot: from resisting de-icing fluids used heavily at airports to UV-radiation. They are also

halogen-free to ensure no toxic gases are released in the event of a fire. "In particular for the A380, [the cable's] compliance with bending radii was a deciding factor," emphasises Michael Harter. DOLL also places high demands on temperature-resistance as the cables have to endure temperatures as low as minus 30 degrees (-220 F). "Our catering trucks are used in all climate zones around the world," says Uwe Trox. "After all, guests boarding a plane in Siberia also want something tasty to eat." ◀

SPEEDY DELIVERY

Who: DOLL Fahrzeugbau GmbH, Oppenau, 350 employees

What: Founded in 1878, the company originally manufactured carriages and forestry tools such as axes and machetes before specialising in bodies and trailers for commercial vehicles. Today DOLL is, among other things, active in the fields of timber transport, heavy-load hauling, and airfield support equipment. The vehicle maker has been serially manufacturing scissor lift catering trucks since 2005. DOLL is one of the few manufacturers certified to service the Airbus A380.

Keep It Clean!

At its factory near Dortmund, Dr. Gansow Gmatic AG produces high-quality floor cleaning machines that are extremely durable and compact, thanks in part to products from HELUKABEL.

Gleaning surfaces, elegant styling and high-quality haptics: the first time people use Dr. Gansow Gmatic AG cleaning machines, they are reminded more of cars than cleaning equipment. This is no coincidence, confirms Heiko Müller who is responsible for the company's marketing: "We try to give our machines an emotionality that may at first appear rather unusual for this type of product. However, our customers in the food industry know stainless steel very well, appreciate its advantages, and are prepared to pay a reasonable price for its quality."


FROM ACIDIC TO ALKALINE Dr. Gansow Gmatic AG has thus created a niche for special, high-grade machines. A major benefit of the products is their suitability for a wide range of cleaning agents with pH values from 1 to 14 thanks to their stainless steel design. The company makes the stainless steel even more durable and robust by transforming its surface into hard-wearing chromium oxide by means of galvanisation. This process removes even the smallest irregularities from the surface and thus helps prevent the accumulation of dirt and bacteria. "The use of processed stainless steel sets us apart from our competitors," explains Moritz Gansow, who is in charge of technical purchasing at Dr. Gansow Gmatic AG. "Other companies focus primarily on plastic, which just can't cope with certain cleaning agents."

The use of strong cleaning agents also places stringent demands on the cables installed by the company in its machines – a challenge willingly accepted by Thomas Thomae, HELUKABEL's northern sales

manager. "The cables are in the immediate vicinity of the actual cleaning," he explains. "It is therefore essential that they are resistant to both alkaline and acidic cleaning agents, as well as very hot water. HELUKABEL silicone cables meet all these requirements." Dr. Gansow Gmatic AG uses these to connect the brush motors of the cleaning machines.

LONG-LASTING AND COMPACT Dr. Gansow Gmatic AG also takes a unique approach to battery technology compared to its major competitors. Instead of the deep-cycle batteries commonly used in the industry, the company focuses on Nex-Sys® batteries. These batteries distinguish themselves through fast charging and a high degree of efficiency, up to 95 percent, which means they generate very little heat. Like mobile phone batteries, they can be charged even when relatively full without shortening their service life. In addition, Nex-Sys® batteries are relatively narrow and 30 percent more compact than comparable deep-cycle batteries. "This makes our machines even more compact and slimmer than our competitors. The machines are easier to steer and the operator has a better view of the brushes because they protrude laterally and symmetrically beyond the chassis," explains Heiko Müller.

The compact housing is achieved by imposing corresponding requirements on the cables and wires installed. The cables connecting the battery to the control unit must be very flexible and allow tight bending radii to ensure they fit into the limited space. For the battery cable, Dr. Gansow Gmatic AG uses HELUKABEL Ho1N2-D welding cables, which is particularly flexible thanks to its

A photograph of two men in business suits working on a piece of industrial machinery. The man on the left, Moritz Gansow, is pointing at a component. The man on the right, Thomas Thomae, is holding a black cable. The machinery is green and metallic, with various cables and components visible. The background is slightly blurred, showing more of the industrial environment.

HELUKABEL silicone cables
are even resistant to all alkaline
and acidic cleaning agents.
Purchasing Manager Moritz
Gansow (left) and HELUKABEL
Regional Sales Manager
Thomas Thomae are
pleased about this.

ultra-fine wire stranding and neoprene outer sheath. The control signals in the cleaning machines are transmitted via HELUKABEL JZ-500 control cables. “It’s great to support such an innovative customer as Dr. Gansow Gmatic AG with several of our products,” reports Thomas Thomae. “I’m confident we have a successful partnership ahead of us.”

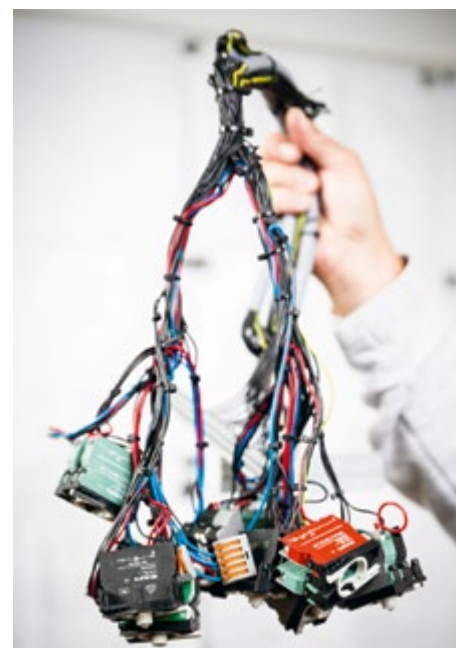
FOCUS ON QUALITY For Moritz Gansow, the Hemmingen/Stuttgart-based cable supplier is the right partner for his factory: “Our main reasons for changing to HELUKABEL are the absolutely professional appearance, availability of products at short notice, competitive prices, and flawless quality. The last point is particularly important to us to set us apart from the competition.” In line with this philosophy, Dr. Gansow Gmatic AG’s cleaning machines are almost completely manufactured by hand. From welding through assembly and cabling to final testing, the 16 employees at the company personally carry out these tasks and tick off each completed step. A positive side effect: the manual process strengthens employees’ identification with the product.

It’s also easy for the company to implement modifications. “We recently had a customer who wanted to use his machine at several locations and hence needed retaining rings fitted on the chassis to secure the machine during transportation,” cites Heiko Müller as an example. The designers put forward a proposal for this requirement, discussed it directly with colleagues in assembly, and were able to quickly provide the customer with a solution.

IDEAS FOR THE FUTURE Despite full focus being on skilled workmanship and high quality, Dr. Gansow Gmatic AG does not lose sight of the future. The company is currently developing a tele-metric-module within a leasing concept for its machines. “Renting is a general trend in cleaning machines,” explains Heiko Müller. “And our durable machines are perfect for this, of course.” ◀

IMMACULATE CLEANERS

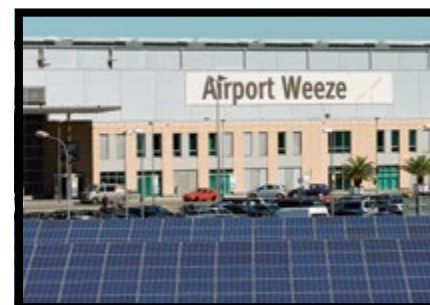
Who: Dr. Gansow Gmatic AG, Bergkamen, near Dortmund, approximately 16 employees. **What:** Manufacturer of high-quality scrubber dryers and electric tow tractors. The company focuses on production by hand to ensure customers’ individual wishes are readily implemented to a high standard.



Quality over quantity, stainless steel over plastic, hand manufacturing over cheap providers: for majority shareholder Moritz Gansow (left) and Marketing Manager Heiko Müller, success lies in traditional craftsmanship and high quality.



Solar panels as far as the eye can see. Thanks to Weeze airport's solar carport system, passengers can rest assured their cars are well-protected.



At Weeze Airport, near the German-Dutch border, EEPro GmbH installed carports topped with 25,000 square metres (269,098 square feet) of solar panels – in record time.

Carport Under the Sun

Jan Kiermaier is a person who doesn't get easily ruffled. The managing director of EEPro GmbH in Simbach, Bavaria, is an expert in open-space photovoltaic systems. He and his team have already completed a multitude of projects around the world. However, installing solar panels on a carport with 1,500 parking spaces at Weeze Airport was not an easy task, even for him. "We only had six weeks from planning approval to commissioning," recalls Kiermaier.

GOOD PLANNING Success depended on just-in-time delivery of the carport substructure, photovoltaic modules, inverters, and various electrical components to the site. Even as early as the planning stage, it was essential for Kiermaier to work with trusted partners who he knew could master the technical challenges from previous experience. "The 66 individual

carport modules are up to 35 metres (115 feet) long and 13 metres (43 feet) wide. Determining the optimum angle for power generation and minimum entry-height was anything but trivial," he says. "We had to push the technical possibilities to the maximum," points out Kiermaier.

SPORTY PERFORMANCE The EEPro managing director also chose a trusted partner for the cables: "We've been working with HELUKABEL for several years now and are completely satisfied with the service. For this project, it was pivotal that HELUKABEL supplied large quantities of cables in an extremely short time."

The fast and prompt delivery of this quantity of pre-specified cables demanded excellent organisational skills, reports Günter Ehrentreich, HELUKABEL's southern region sales manager. "Field staff, sales

support, and shipping all joined forces and we were able to successfully handle the project in the limited time available," he continues.

Today, the power generated by the module is transmitted to the inverter through 70 kilometres (43.5 miles) of SOLAR-PV1-F cable. The inverter connects with the photovoltaic distributors via a NYO cable. From there, NYY-J cables transport the power to the transformer station. "We also used the PAAR-TRONIC-Li-2YCYv data cable to ensure the system operates in accordance with the German Renewable Energy Sources Act," says Kiermaier. A total of 15,296 solar panels have been connected this way, and his planning paid off. Cars parked at the airport are now protected from sun, rain, and hail while the rooftop solar panels feed up to four megawatts of electricity into the operator's power distribution network. ◀



CLOSE TO HEAVEN

Be it a shining moon floating in space, shooting stars creating small bright flashes across the black sky, or a blood-red sun setting the horizon ablaze, these natural phenomena never cease to amaze us. Non-scientists who want to be even closer to these heavenly events can go to the Allgäuer Volkssternwarte Ottobeuren, a public observatory in Bavaria. For its 50th anniversary in 2016, the observatory was completely renovated and expanded. Despite the extensive support of public subsidies and approximately 4,500 hours of volunteer work, donations from private and commercial sources were needed for this mammoth project. HELUKABEL made an important contribution by supplying the HELUKAT 500 F/FTP FRNC network cable. Astronomical events can now be projected live on a screen in the modern lecture theatre where hobby astronomers of all ages can marvel at them up close.



On Land, Under Water, and Aboard the ISS

We encounter electric motors all the time in our everyday life: they set conveyor belts in motion at supermarket checkouts, rotate the spits in kebab restaurants, open department store doors, and operate the pumps at petrol stations. And sometimes, they even control the water cooling circuit on the International Space Station (ISS).

Ever heard of Debstedt? No? Many things that make the world go round come from there - and that's no exaggeration! ASTRO Motorengesellschaft in Debstedt, northeast Germany, develops and ships approximately 30,000 motors each year to 56 countries around the world via 27 sales agencies. When they arrive at their destination, the electric motors perform their duties in over 200 different areas of application consistently, quietly and invisibly, but above all, highly efficiently. ASTRO motors are even found in outer space: on the ISS they work in actuators to ensure that the water cooling circuit can balance high-temperature fluctuations at all times.


ASTRO Motorengesellschaft launched its first synchronous motor 35 years ago. Today, the Lower Saxon company is one of the leading manufacturers of electric motors in the power range up to 200 watts. ASTRO is global market leader for explosion-proof synchronous motors up to 20 watts and is the hidden champion in this segment. For his

entrepreneurial success, commitment, and innovative power, Thomas Graudenz, managing director of ASTRO Motorengesellschaft, was not only awarded the "SME Grand Prix" for the Lower Saxony/Bremen region last year, he also received the Oskar Patzelt Foundation plaque of honour awarded to particularly innovative companies.

LOOKING AHEAD A success which is deserved and rightly fills Thomas Graudenz with pride: "For decades we've been producing motors with the 'Made in Germany' label - a promise of quality our customers can trust." They can also trust the instinct and know-how with which Graudenz runs his company. For example, in 2002, the expensive ATEX certification from the European Union proved to be an investment in the future. It allows ASTRO to manufacture explosion-proof motors for use in refineries, biogas power plants, and petrol stations for example. "We offer these motors in two versions. The first one is restricted with an output of up to 20 watts; the other is unrestricted with a maximum



© Erik Krüger

A full-page photograph of a middle-aged man with white hair and black-rimmed glasses, smiling at the camera. He is wearing a dark navy blue suit jacket over a light blue button-down shirt. A patterned pocket square is visible in his jacket's breast pocket. He stands in front of a large industrial ship, likely a tanker, with a red and blue hull. The words "DOCK V" are painted in white on the ship's side. The background is slightly out of focus, showing the ship's structure and the water.

Creative mind: motors designed by Thomas Graudenz are used on board large tankers, propel submarines, and rotate kebab spits.

output of up to 200 watts. The unrestricted ASTRO motor is housed in a crush-proof enclosure and was launched back in 2016 with an EC type-approval test certificate”, explains Graudenz. “Neither motor produces sparks. This is a must in explosive environments,” he continues.

Graudenz relies on HELUKABEL-quality for the cabling of its special motors. Regional Sales Manager David von der Gathen explains: “We supply ASTRO with our flexible, special PVC, JZ-500 control cable to name an example. This largely oil-resistant cable is self-extinguishing, flame-retardant, and conditionally suitable for drag chains and torsion.” Due to its properties, the JZ-500 is perfectly suited for used in motors. Even the cable glands are supplied by HELUKABEL since it is essential that every individual component here is compatible with one another. The cable glands comply with international standards and are also used where high ambient temperatures exist and a high protection-class and crush resistance are required.

But Graudenz doesn’t enjoy a close relationship with just HELUKABEL: “I can visit any of my suppliers within 24 hours because they all manufacture in Germany. The complaint quotient for our products

“Our explosion-proof motors do not produce any sparks at all. That’s a must in explosive environments.”

*Thomas Graudenz,
Managing Director of ASTRO*

is in the low per mil range, which is no coincidence.”

The entrepreneur can also rely on committed and qualified employees. He finds them even in the structurally lagging Cuxland region, on the coast of the North Sea. “The shortage of skilled labour is not a problem for me. I offer competent employees and ambitious newcomers many incentives, but above all an exciting and secure job in a family-friendly company. Usually I don't even have to advertise openings,” he boasts. His wife Andrea ensures that the company maintains its high profile by regularly



ASTRO-MOTORS AND GEARBOXES ARE EVERYWHERE ...



Actuators for regulating the water cooling system on board the International Space Station



Seat adjusters in aeroplanes



Equipment for food preparation



Eyeglass lens sanding machines



Fire hose dryers



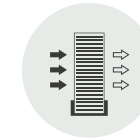
Medical equipment



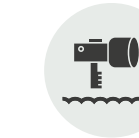
Agricultural feeding machines



Robotic propulsion in submarines



Dehumidifiers



Ship-searchlights



Control mechanism drives for printers (ATEX*)



Windscreen wiper-gears in biogas plants (ATEX*)



Pellet stoves

* ATEX:
Explosion-proof synchronous motors



On the ISS, ASTRO motors are expected to meet the highest standards. Thomas Graudenz receives expert advice from HELUKABEL regional sales manager David von der Gathen.

updating social media channels with news and articles about the company's diverse social engagements. Alongside her public relations work, she's also in charge of personnel, training, health and safety in the workplace, and event management.

CAPTIVATING Thomas Graudenz is passionate about his work and his eagerness resonates in all his words. His enthusiasm and openness for new things have been a driving force throughout his multifarious professional career. After graduating, Graudenz completed a car mechanic apprenticeship and then went on to study economics. This provided him with a diverse background of experi-

ence in areas such as stock keeping, quality assurance, and export trade; such skills which would later stand him in good stead. In 1999 he joined ASTRO as business manager and in 2010 he succeeded Senior Director Walter Hopp. Graudenz had already turned the company upside down by 2004 when he built a production plant in Debstedt. This paved the way for him to expand the company's product line to include new gearboxes and connections. Today, in addition to complex custom solutions, the company offers millions of combinations based on a modular concept for every application.

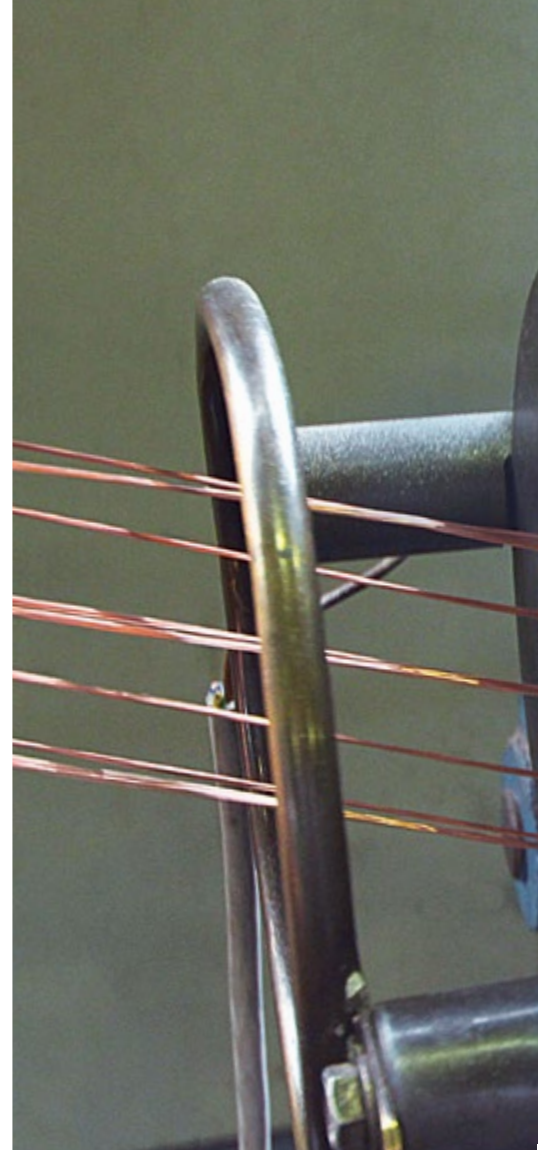
Graudenz has set himself a number of goals again this year: "My main focus is on growth. By 2025 I would like to double our net sales, which are currently around two to three million euros (2.3 to 3.5 million US dollars)." And who knows, perhaps there will be something else to celebrate at the end of the year, for his company has once more been nominated for the "SME Grand Prix". ◀

ELECTRIFYING

Who: ASTRO Motorenengesellschaft mbH & Co KG, Debstedt, northeast Germany, 30 employees. **What:** ASTRO Motorenengesellschaft develops and manufactures high-precision electric motors with a power range up to 200 watts and is a global market leader for explosion-proof motors up to 20 watts. The company manufactures series as well as highly specialised custom solutions.



Tin-plated copper wires will be prepared for the wire drawing. Finally, fine and extra-fine single conductors are the result.



Stranding

AFTER THE INDIVIDUAL wires have been made by wire drawing, they are twisted into a stranded conductor through a process known as stranding. Compared with a solid, single conductor of the same diameter, a stranded conductor is much more flexible and hence less likely to break.

The simplest type of stranding is bunch stranding, where the individual wires are arbitrarily twisted together. The wires do not have a fixed geometry and their position relative to each other constantly changes over the total length of the strand. The end product is a conductor with a varying cross section and large differences between the position of the widest and the narrowest diameter.

In contrast, the concentric strand is a high-quality and complex type of strand. Here, several layers of wires are twisted around a central wire. Exactly 6 wires fit directly around the central wire to form a conductor with a uniform diameter. Exactly 12 more wires are then twisted around this first layer. The result is a concentric strand with a fixed number of possible wires, i.e. 7, 19, 37, 61, etc., depending on the number of layers. In this type of construction, the relative position of the wires to each other is fixed. The conductor has more or less the same geometry along its entire length and therefore has a very uniform diameter.

DO YOU KNOW THE CONDUCTOR CLASSES?

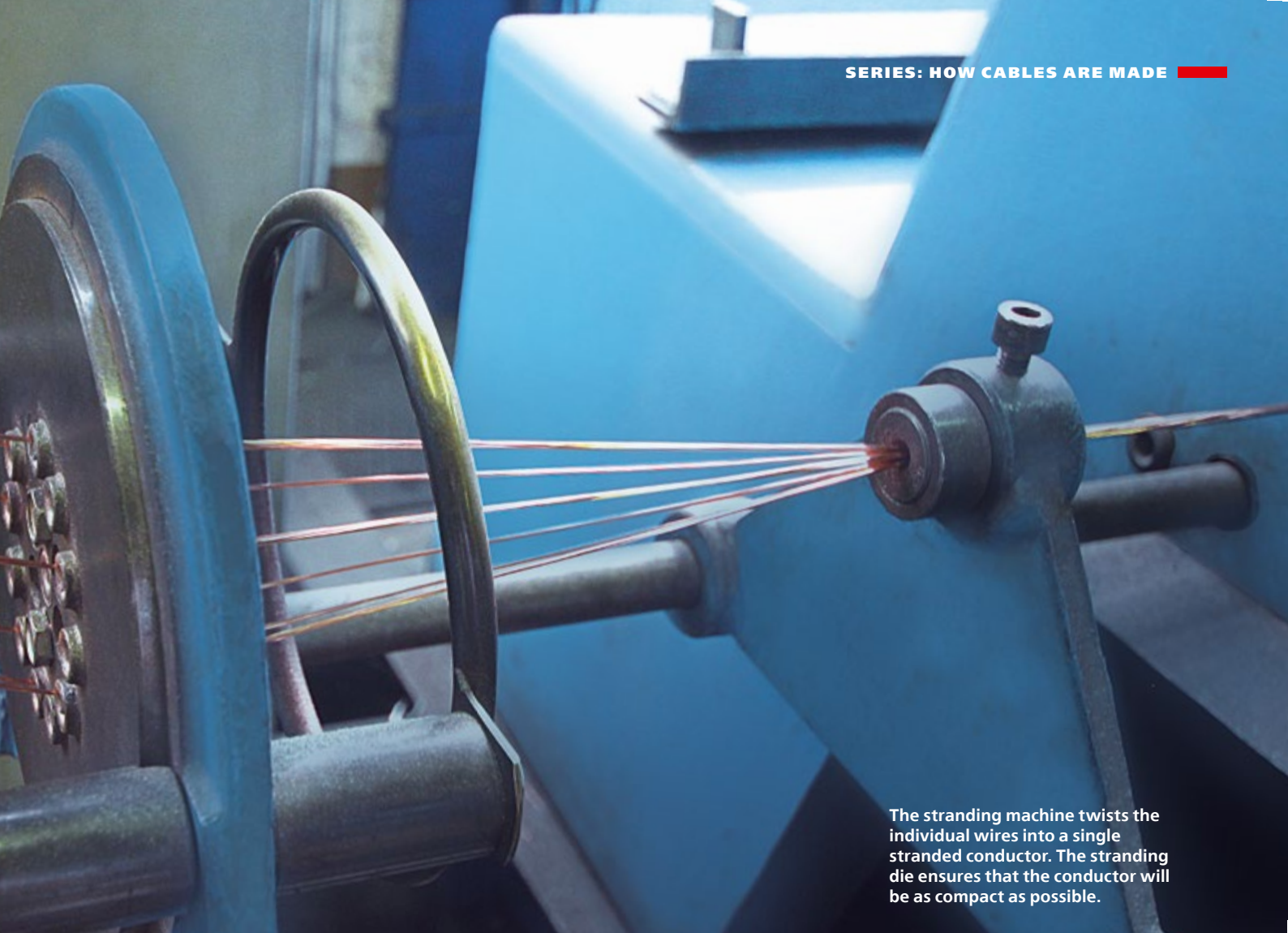
IEC 60228 (DIN VDE 0295) classifies conductors according to their flexibility. Solid, single conductors are assigned to class 1. Stranded conductors are allocated to the other classes. These classes reflect the flexibility of the conductor which increases with the fineness of the individual wires:

- Class 1: solid
- Class 2: stranded
- Class 5: flexible
- Class 6: highly flexible



SERIES OVERVIEW:

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



The stranding machine twists the individual wires into a single stranded conductor. The stranding die ensures that the conductor will be as compact as possible.

Questions for the expert

Mr. Mehl, what do you have to pay particular attention to during stranding?

When making a stranded conductor, the objective is to make it as concentric and compact as possible. The better this is executed, the higher the space factor and the smaller the unused space between the strands in the conductor. This is best achieved with concentric strands.

Once the type of strand has been decided on, various parameters can be tweaked during stranding to modify the quality and features of the final product. For example, both the diameter and flexibility of the strand can be changed by altering

the lay length. The lay length is the length of a full rotation around the strand axis. The shorter the lay length, the more flexible the finished strand.

What benefits do concentric strands provide during subsequent processing?

The thickness of the required insulation layer is determined by the strand diameter. The smaller the variation between the narrowest and widest diameter over the total length, the more likely it is that a thin-walled insulation will suffice; this saves material and has the overall effect of making the cable

slimmer and more flexible, and thus ideally suited for moving applications.

ABOUT THE PERSON:

Herbert Mehl is production manager at the Windsbach plant.



Trade Fair Dates

NOVEMBER 2018

Belektro

06. – 08.11.2018, Berlin, Germany

CeMAT ASIA

06. – 09.11.2018, Shanghai, China

ADIPEC

12. – 15.11.2018, Abu Dhabi, UAE

EMAF

21. – 24.11.2018, Porto, Portugal

SPS IPC Drives

27. – 29.11.2018, Nürnberg, Germany

OSEA

27. – 29.11.2018, Singapore

FEBRUARY 2019

Southern Manufacturing

05. – 07.02.2019, Farnborough, United Kingdom

MARCH 2019

SIAF

10. – 12.03.2019, Guangzhou, China

Solar Solutions

19. – 21.03.2019, Haarlemmermeer, Netherlands

Automaticon

26. – 29.03.2019, Warsaw, Poland

APRIL 2019

Hannover Messe

01. – 05.04.2019, Hannover, Germany

WindEurope Conference & Exhibition

02. – 04.04.2019, Bilbao, Spain

Automate

08. – 11.04.2019, Chicago, USA

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FAQ

Is Air Freight Economical?

As HELUKABEL's senior international business manager, **Hartmut Kellner von Bergen** keeps an eye on orders around the world.

Project planning is a complex process; time management and cost reduction play an important role in it. When a construction site somewhere in the world comes to a standstill because an essential part is missing, speed is the only thing that matters. Transport costs suddenly get pushed to the bottom of the priority list.

It happens all the time that even the best planning can be derailed by unforeseen events. A quick and spontaneous reaction is then required, though this is usually expensive. This type of emergency can often be avoided by taking a holistic approach to transport in the planning phase. This means accepting from the outset that supposedly expensive air freight is not a last resort, but rather a way to mitigate risks. A key argument in favour of this is the fact that shipping via air freight is no longer as expensive as it was a few years ago. A comparison of air freight rates from the logistics centre in Hemmingen, near Stuttgart, to 80 strategic industrial destinations around the world revealed an average price of 1.60 euros per kilogram (approx. \$0.84 per pound). A standard five tonne (11,023 pound) delivery thus costs approximately 8,000 euros (\$9,246). Project sites are generally closer to airports than seaports, shortening the further transportation of goods on land, known as on-carriage. This not only saves time, but puts the additional cost of using air freight into perspective.

At HELUKABEL, our warehouse in Hemmingen and most of our international subsidiaries stock a large variety of products. However, this high warehouse availability only benefits customers if we can quickly deliver the required cables and wires to any desired destination worldwide. We therefore advise customers to consider air freight as a fast-track option from the outset, even if only for part of the shipment. Such an investment can reduce unscheduled costs and risks, and avoid frayed nerves on both the supplier's and the customer's sides. ◀

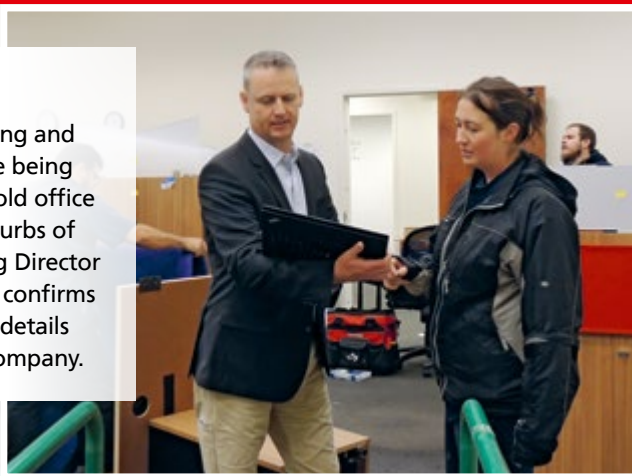


The Big Move with Markus Dannheim

HELUKABEL USA has grown so rapidly over the past ten years that it needed to relocate to larger premises. For Managing Director Markus Dannheim this meant getting down to packing moving- boxes! We accompanied him during the move.

8:05 AM

It's Saturday morning and the workspaces are being dismantled at the old office building in the suburbs of Chicago. Managing Director Markus Dannheim confirms the final transport details with the moving company.



9:00 AM

A product inventory is taken as they are loaded into the moving van. Today and over the next few days, the truck will need to be loaded a total of 70 times to transport everything to the new site 15 kilometres (9 miles) away.



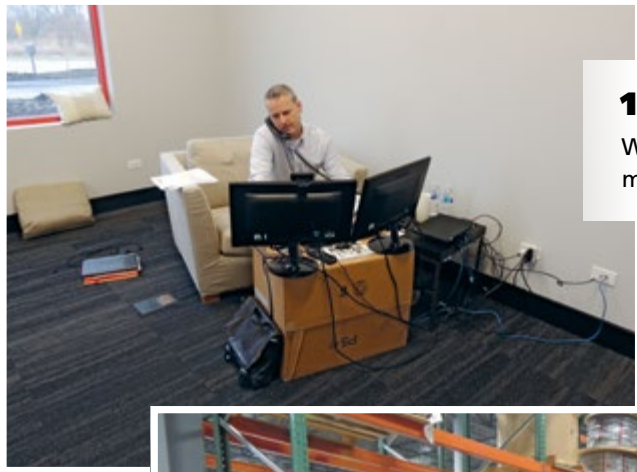
10:15 AM

While the boxes are being carried into the building, Markus Dannheim and Kevin Siegel check the outside walls to see if they have been painted the right colour. Inside the new 7,000 square metre (75,347 square foot) building, there is storage space for twice as many products.



11:00 AM

Things begin to move fast; next on the agenda is the inspection of the sprinkler system. Also present is Evelyn Lorence, Markus Dannheim's right-hand, who organised and supervised the entire move.



12:10 PM

Working on top of boxes: Markus Dannheim takes a moment to stop off at his improvised office.



1:45 PM

Work begins with putting the goods into the new warehouse. A place needs to be found for approximately 5,200 cable drums, which also need to be recorded in the inventory-management system.



4:30 PM

The finishing touches to the new office space: Markus Dannheim lends a helping hand so work can begin normally again on Monday.



6:45 PM

Finished! The team have successfully completed most of the move. Markus Dannheim and his colleagues celebrate with beers at the end of the day.



“First Listen Then Take Action”

Jörg Kairies has been HELUKABEL's sales manager for three years. Professionally he's a problem solver, privately he's an enthusiastic mountain biker. We joined him on a bike ride and talked about his 20 years of experience in sales.

Mr. Kairies, what do customers want from HELUKABEL?

What our customers want most are quality, fair prices, and punctual delivery. They also want us to help them solve their problems, from processes to technical applications. That's what I actually enjoy most about my job: working with the customer to find a solution that allows them to work more efficiently, and knowing we mastered a technical challenge.

And how did you come to be the “problem solver” for your customers?

It's important to me that our people go out and meet with customers. This is something I try to do myself as much as possible. I walk through the building with

the customer and ask to see the applications and the warehouse. This way you usually see immediately what's needed. It means a lot to me to be able to meet people and swap experiences; it's much better than sitting in the office five days a week. If you do that, you have little idea of what's going on in the outside world and what really matters to the customer. That's why I think it's really important for a salesperson to be an excellent listener. We have to want to understand. Of course, extensive knowledge of the materials and in-depth technical insight are also important. Then it's time for us to take action and implement the customer's wishes. I never stop trying to communicate all this to my team. Our extensive product

line also plays a decisive role in solving customer problems.

What sets HELUKABEL's product portfolio apart?

We offer products for every sector and application, including: industry, infrastructure, data systems technology, renewable energy, and media technology. Every sector demands special properties, which we are able to fulfil. Be it high acceleration and very fast alternating bending cycles in drag chains for machine tools, long travelling distances on gantry cranes, or extreme angles of torsion in robotics applications, to name just a few. And if there's nothing suitable in our catalogue, we are able to produce

custom-made solutions. This makes us unique in the market.

Is there anything else that makes HELUKABEL's sales operations special?

We have a team of 40 field sales representatives supported by a very strong internal sales team. Many have been with the team for a long time and have built long-term relationships with customers based on trust. Our industry specialists are also able to provide application-specific advice.

You're not just well acquainted with day to day working practices in sales in Germany; you've also worked in Asia for several years. How have you benefited from this experience?

The customs when meeting with business partners in South Korea differ from Europe. In my first few months there, I always seemed to be putting my foot in it. I didn't speak the language and wasn't particularly aware of the cultural differences. I learned mainly by watching others. For example, you should never turn your back to your business partner after saying goodbye. Business cards should be exchanged with both hands, and you should read the card there and then. That's something I've started doing here too. I still hand over my business card with two hands and read ones I've been given straight away. In South Korea I was the problem-solver as well. I worked for the same company for several years, starting off in Germany. This made me particularly well-networked in the areas of logistics, production, and engineering, so I was able to quickly help South Korean customers on site with their engineering problems. My time in South Korea was also good for my private life as I met my wife there. We've been living in Germany with our three children for eight years now.

What are the challenges of being a sales manager and how do you face them?

Stagnancy is decline. This is why we've further developed our sales strategy to skilfully merge the points of contact with the customer via both digital and clas-

sic channels. Looking after customers both online and offline is, in my opinion, the way to maintain successful customer contact and professional customer loyalty. Though this can only be achieved by creating a well-functioning team, which involves bringing together colleagues with different personalities. Continuing professional development is also a key topic for me. In our fast-moving world, where there are new innovations appearing on the market nearly every day, we need to be on the ball at all times – a major challenge which we meet with strategic training. Here too though, we always have the potential to improve ourselves.

At the end of the day, isn't it just good sales figures that matter?

Yes, that's right. At the end of the day, it's good sales figures that count. It's always been and always will be like that in every company. What's important is the road we take to achieve them, and this road is often a long one. Our customers expect added value from us. This is especially true these days when everyone can use the internet to compare products and prices so that all they have to do is choose between the many possibilities. When everything is taken into consideration, business is still done person to person. If you're aware of this, your figures will be good too.

Where do you see unexploited potential?

In my ideal world, HELUKABEL's sales structures would interconnect more, first in Germany, Europe and then worldwide. And this must happen in people's minds as well. We need to take our blinders off and see beyond the end of our noses, start thinking across borders and converge more in all areas and departments. This is the only way we'll be able to learn and profit from one another and enjoy success in the long term. It's also essential to train the next generation. We're located in a region where our competitors are huge companies. We have to remain an attractive employer and make sure that young people who join the company envision their future with us. We're already headed in the right direction. ◀



**JÖRG KAIRIES
HAS TO DECIDE!**

Mountains or the sea?

→ The sea. I love the warmth, swimming, and playing in the sand with my kids.

Classical or rock?

→ Rock, of course. It brings back memories of my teenage years: long hair, headbanging, playing around, and just listening to good music.

Beer or wine?

→ Beer. It's more laid back.

Fizzy or still water?

→ Fizzy

What do you like best: savoury or sweet snacks?

→ Savoury, preferably double-crunch peanuts and peanut-flavoured crisps.

If it has to be something sweet, chocolate or ice cream?

→ Nut-flavoured ice cream! But if crème brûlée is on the menu, I'll take that instead.

Tea or coffee?

→ Coffee. I like green tea but it's too fiddly for me to make. With coffee, all you need to do is press a button.

Town or country?

→ I grew up on a farm, so definitely country for me. I experienced the other extreme when I was living in Shanghai with 20 million other people.

Mountain bike or racing bike?

→ Mountain bike. My idea of bliss: cycling through forests far away from roads and cars.

Welcome to the Netherlands!

Interesting facts about the HELUKABEL subsidiary and the country.



- ▶ HELUKABEL B.V. was founded in Budel in 2000. Budel is located in the south of the Netherlands on the border with Belgium. The managing director is Jasper van Beusekom.
- ▶ The subsidiary currently has 16 employees. With the completion of its new building in 2016, Budel now has enough space to stock approximately 1,250 products.
- ▶ Most of their Dutch customers are mechanical and system engineers as well as wholesalers.
- ▶ The best sellers are the JZ-500 control cable, heat-resistant Ho7V2-K PVC single cores, custom cables, and solar cables.
- ▶ HELUKABEL B.V. invested in a new cutting-machine centre from Kabelmat Wickeltechnik in 2017. This means more flexibility and even faster delivery for Dutch customers.

FUN FACTS



In the Netherlands, it's customary to greet good friends with three **AIR-KISSES** on the cheek. Both persons lightly touch cheek to cheek, give each other a slightly noisy air-kiss near the ear, repeat this on the other cheek, and then again on the first one.

The headquarters of numerous **INTERNATIONAL ORGANISATIONS** such as the International Court of Justice, the International Criminal Court, and the European Union Agency for Law Enforcement Cooperation (Europol) are located in the Netherlands (all three are in The Hague).

LUSCIOUS LIQUORICE:

No one in the world loves real liquorice root extract more than the Dutch. Every citizen consumes about two kilos (4.4 pounds) of liquorice a year.



500,000 citizens in the province of Friesland either only speak **FRISIAN**, the country's second official language, as their mother tongue or speak it alongside Dutch.



Approximately three quarters of the Netherlands is just one metre above **SEA LEVEL** or below it, and is protected by large dikes. The flat terrain makes the country ideal for cycling.

HELUTOP® HT Clean – The Hygienic Cable Gland



THE ADVANTAGES AT A GLANCE:

- Exceptionally smooth stainless steel surface enables fast and cost-effective cleaning
 - Resistant to all common chemical cleaning agents
- IP 69K protection class for high seal-tightness during high-pressure jet cleaning
- Operating temperature: -20° to +100°C and, for short periods of time, -40° to +150°C
 - ECOLAB certified, EHEDG approved, FDA compliant
 - EMC version also available



AN INVINCIBLE TEAM

Katja Türkyilmaz-Link and Günter Ehrentreich work hand in hand through all phases of the sales process. The southern sales group manager and the regional sales manager tend to approximately 400 customers in Upper and Lower Bavaria with great commitment and success.

While Günter Ehrentreich is at the customer's premises giving technical advice on a diversity of applications, holding product presentations, and helping out with projects, Katja Türkyilmaz-Link is in Hemmingen/ Stuttgart supervising the order processing. She ensures everything runs smoothly, from quotation preparation to shipment. Good communication and coordination between the two guarantees optimal customer service.

And when two people work together so closely, it's also an advantage if the chemistry is right. Certainly part of the secret to their success is the fact that they have very similar working styles, get on well together, and can depend on each other.

Around this time of year, Katja Türkyilmaz-Link and Günter Ehrentreich usually go off on business trips together to pay their customers a joint visit at Christmas. This year though, Günter Ehrentreich will have to do without his colleague as Katja Türkyilmaz-Link will soon be concentrating on her new role: motherhood.