Edition 36

LÜTZE-REPORT

The international magazine of the LÜTZE Group

LSC ON THE HIGH SEAS

LÜTZE CONNECTIVITY - WELL CONNECTED

STANDARD IN CONTROL CABINETS FOR THE AUTOMOTIVE INDUSTRY

RESULTS OF THE INNOTRANS 2014

KING KONG IN AUSTRALIA

LÜTZE

SYSTEMATIC TECHNOLOGY

EDITORIAL

Udo Lütze
Managing Director
Luetze International Group

New highs in the automation technology field

Our products are used on 2624 m of the new Pardatschgratbahn in Ischgl. While this may not be an altitude record for automation technology, it is a good example of our customer orientation. Time and again the market presents us, our products and application know-how with new challenges. Be it cableways, cruise liners or King Kong: Lütze always focuses on the application and not the product.

In this edition of the LÜTZE REPORT we show you further innovative examples of how we solve customised challenges with our technology.

I hope you enjoy reading this edition.

Best wishes,
Udo Lütze

SkyBLUE

BLUeCOMPETENCE Alliance Member
Partner of the Engineering Industry Sustainability Initiative

Additional information concerning the *Sky***Blue** sustainability campaign from LÜTZE is available on the Internet at: www.luetze.de or at the following direct link: http://bit.ly/L2bbFy

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LSC on the high seas

Rudolf Killmann - LÜTZE GERMANY

Cruise liners provide their own technical requirements: Despite their sheer size, there is surprisingly little space for the most important control systems that operate behind the scenes. This is a good argument for taking the space-saving LSC system on board.

FUNA International GmbH is based in the town of Emden in East Frisia. The company has 200 employees and works globally as a designer of innovative telecommunications, security and entertainment systems and their technical integration. It manages projects from A to Z (at least from A to W): from apprenticeship centres to wind turbines. FUNA also has a wide range of experience in maritime applications, such as superior ship and boat classes, from super yachts to luxury liners. For instance, it manages the largest cruise ship currently at sea and four of the largest super yachts worldwide.

In the ship-building field, the paths of FUNA and LÜTZE crossed at the reputed Meyer shipyard in Papenburg. Considering that every centimetre of space counts when building ships, the FUNA applications were somewhat cramped inside the switch cabinets. There is a focus on the effective lighting, especially on the cruise ships. The various lighting effects in the restaurants, bars and the theatre require a large number of control units for the LED lighting. Until now, all equipment that could not fit onto the assembly plate were mounted and wired on the side walls. This meant that much more time was required for wiring and installation.

This is where LÜTZE came on board: Thanks to the LSC system, all parts could be mounted on one level - without having to use a larger cabinet. This wiring system also has the advantage of better air circulation within the control cabinet. The switch cabinets on board are wired to the ship's air conditioning system: The air supply comes from below, is heated and then drawn off from the top. Due to the fact that no cable ducts are required, there are no interfering surfaces, therefore allowing optimum ventilation.

Another important factor is the reduced weight achieved by the LSC frame compared to normal assembly plates. If the weight saving potential is added up, approx. 4,000 kg (no this is not a typing error; it really is 4 tonnes) can be saved on a ship of the AIDA class.

In addition to the LSC system, other LÜTZE products were used on board: As the lighting units were controlled via a bus, Ethernet switches from Weinstadt were also used. They were chosen not just because of their solid construction, but also because of their streamlined design. These LÜTZE power units are responsible for the safe power supply on board brilliantly lit cruises.

The order books of the Meyer shipyard are currently full, and further huge cruise liners are being planned...

Photo: Doppelmayr Gruppe

Well connected!

Reinhard Braun - LÜTZE GERMANY

LÜTZE has come up with a completely new cabling concept with prefabricated connecting leads for the new Pardatschgratbahn in the ski resort of Ischgl – with state of the art innovation!

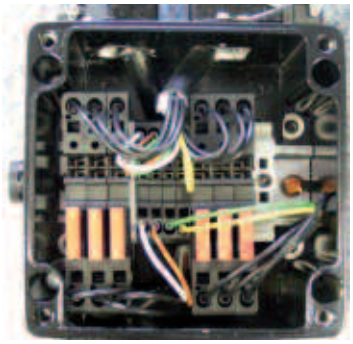
The new Pardatschgratbahn was opened in Ischgl / Tirol at the start of the winter ski season 2014/2015. The new tricable gondola lift '3-S' has a vertical rise of 1,251m which is the largest that has ever been achieved in the world. It is also one of the fastest, moving at a speed of 7.5 m/s. The technical details of the Pardatschgratbahn are also impressive: It is the first gondola lift system in the world that supplies the cabins with power during its journey. Up to three generators are used per gondola providing a continuous supply of power. This means that all 28 seats for the passengers are continuously heated. There is also enough energy available for interior lighting, heating and information boards/screens.

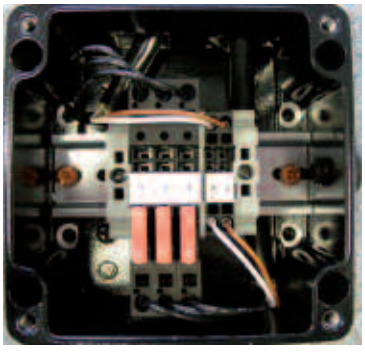
The new type of power supply via generators attached to the gondola meant that a completely new cabling system was needed. LÜTZE worked closely with the Austrian company Doppelmayr, the world's leading gondola lift constructor, to develop this system. LÜTZE faced many challanges. When designing the cables, the LÜTZE engineers had to focus on ensuring that the cable assembly process was simple and uncomplicated. The cables had to be able to withstand the extreme weather conditions and UV radiation from the mountains, and also be able to cope with perpetual movements.

In 1990 a monocable gondola lift with 4-person gondolas was opened for the ski enthusiasts in the ski resort of Ischgl / Idalp. As a result of the growing number of visitors, this gondola lift that had two partial routes and a mid station had reached the limits of its capacity. The ski resort's visitors were faced with long waiting times at the lifts, which is why the new Pardatschgratbahn was opened in the winter season 2014 / 2015. It takes ski enthusiasts directly from the eastern part of the town centre straight up to the Pardatschgrat without stopping. Now, 2,800 visitors can be brought comfortably up to the ski slopes every hour. The upper section of the old ski lift has been left in place to allow skiers to ski down from the Pardatschgrat to the previous mid station.

Cables and wiring concept from LÜTZE

When we received the enquiry from Doppelmayr, we needed to act quickly. Within the space of just 8 weeks, the





LÜTZE engineers developed and created a functional cabling concept with the associated connectors and cables. However, one thing was clear right from the start: in light of the demands made by this system, a standard solution was simply not going to be enough; to satisfy the specification existing cables would need to be adapted. This meant designing a new combined cable which was able to not only feed the voltage from the independent generators into the cabin, but also carry the signal for the thermo-sensors.

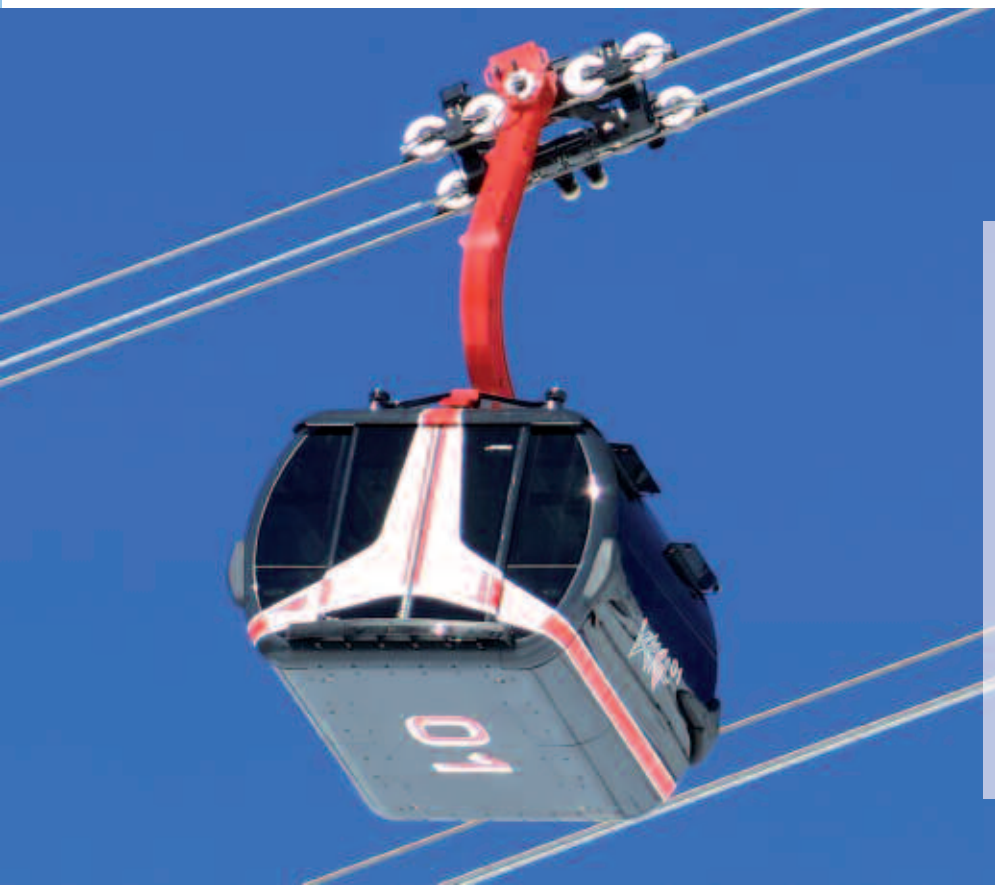
The LÜTZE engineers opted for heavy-duty industrial plug connectors for the Pardatschgratbahn. It was also necessary to compromise between the cable strength, bending radius and maximum cable cross-section. The new cable was equipped with a black, halogen-free PUR sheath to ensure it was able to withstand extreme conditions and the high UV radiation in the mountains. This ensures reliable operation even in the case of temperature fluctuations of between -40 °C and +80 °C.
The new PUR cable from LÜTZE allows a very small bending radius of up to a maximum of 10x its own diameter (10 x D) and is therefore highly suitable for tight installation spaces and movements.

Background: The generators work similarly to a bicycle dynamo and are placed above the cabin on the casters to generate current when the cabin moves. Due to the fact that the cables come directly from the generators down to the terminal box, they are always in motion as the cabin moves, and therefore need to be able to withstand bending loads.

Connector and assembly concept by LÜTZE

LÜTZE supplied the new cables complete with mounted IP65 connectors. LÜTZE opted for sturdy aluminium connectors and casings with a special surface finish making them highly suitable for outdoor applications. For space reasons, some connection cables needed to be supplied without pre-mounted connector casings because this was necessary for installation into the linkage. The LÜTZE cables were prepared to allow simple 'plug&play' assembly on site.

Even the two terminal boxes were completely manufactured and wired by-LÜTZE. These serve as transfer points and a central collection point. Amongst other things, they also contain 80 fuses. The boxes satisfy the IP65 standard and protect the elements inside against all weather conditions, even if covered by snow or melting snow. They also have an integrated forced ventilation system, an installed diaphragm that prevents condensation from forming on the inside.



About the Doppelmayr Group: As the market leader for ropeway systems, the Doppelmayr Group has production sites, sales offices and service facilities in more than 35 countries. To date, it has created more than 14,500 ropeway systems in 88 countries. The Doppelmayr Group is the world's leading ropeway constructor with a global headcount of approx. 2,500.

The Ischgl ski resort: The world famous ski resort of Ischgl lies between 1,400 and 2,872 metres above sea level in the Paznaun region, between the Silvretta and the Verwall group. The ski season starts at the beginning of November and ends at the beginning of May. The region offers 238 kilometres of pistes and 45 lift and gondola lift systems. Around 25 million people use the ski lifts in this region every season.

The plans provided for additional signal lines to monitor the temperature of the generators so that action could be taken in the event of overheating. There was one further condition: for assembly reasons, steps needed to be taken to ensure that the individual cables could be connected at different points.

One of the prerequisites for solving these technical challenges was the successful long-standing partnership between LÜTZE and Doppelmayr. The capability and experience Lütze has in the field of connectivity, which has been built up over many years, is well known to Doppelmayr. Another advantage for the connectivity engineers at Lütze was that they were able to make use of many years of in-house cable construction expertise.

Standard in control cabinets for the automotive industry

Horst Heckel – LÜTZE GERMANY

© Photo: Automatic-Systeme Dreher GmbH

Innovative and cosmopolitan with all the best Swabian characteristics: DREHER, a leading manufacturer of system solutions in the field of press automation promises its customers the best solutions for every application. As far as control cabinets are concerned, this solution is called LSC AirSTREAM.

Wherever German automobile factories produce sheet metal and forged parts in large numbers, it is highly likely that they are using a system from the company, Automatic-Systeme Dreher GmbH.

The best solution in a control cabinet

The automation specialists based in southern Germany state: 'We don't build machines. We form solutions." Good solutions always involve thinking everything through right down to the periphery devices. The control cabinet for example: DREHER generally does not use standard mounting plates, thereby avoiding their disadvantages.

A classic version of the LSC wiring system was used in a project for a large automobile manufacturer. The new LSC AirSTREAM was a winner on all counts: LÜTZE is the supplier of four standard frames with which DREHER equipped four standard control cabinets.

LSC AirSTREAM is superior

What actually makes the LSC concept technically superior? As far as DREHER is concerned, LÜTZE exceeds conventional assembly plates in several areas: Firstly in terms of space; thanks to the compact frame design more components can be mounted in smaller dimensions. A clever principle that does away with the need for cable ducts and allows a complete layout.

Simply plan the LSC AirSTREAM online

Speaking about assembly: Anyone who puts together their own frame online using the new LSC configurator can immediately start wiring as soon as the finished frame is delivered by LÜTZE. No more cable ducts, boreholes and intricate work when positioning the components.

Optimal temperature in the control cabinet

An optimal temperature in the control cabinet is the third major benefit. Due to its design, the structural level and the wiring level in all LSC frames are separated. This allows the air to flow almost unhindered past modules and wires, the dissipated heat is removed and the necessary cooling output is reduced. Thermo-dynamics further improve the LSC AirSTREAM: This is so effective that at DREHER only two cooling units are required for three control cabinets. This saves on resources, costs, material and CO2 emissions.

System supplier for cutting systems

The cooperation with LÜTZE demonstrates once again DREHER's innovative and Swabian approach. The company started in 1970 building mechanical and hydraulic transfer units. They continued to build blank loaders and programmable control systems and they were one of the first companies to introduce CAD technology in 1986 and 3D CAD in 1997. Further developments include; system solutions, the first transfer in a FlexMotion design and later for servo presses. In 2008 DREHER developed the first straightening machines for high-strength materials, before entering the market for large format presses and pressing lines. Now, managed by the second generation, the company employs 200 people and operates as a system supplier for blanking lines and is a based in Sulz am Neckar between the Swabian Alb and the Black Forest.

InnoTrans 2014

Andre Kengerter – LÜTZE TRANSPORTATION

© Photos: InnoTrans Messe Berlin

2,758 exhibitors from 55 countries, 138,872 trade visitors from more than 100 countries, 145 rail vehicles and all this on an exhibition space covering 102,843 square metres. These were the key facts and figures from the 10th anniversary of the InnoTrans in 2014. It is the largest rail exhibition in the world and it took place at its traditional location in Berlin last September, Of course, the team from LÜTZE TRANSPORTATION took part again!

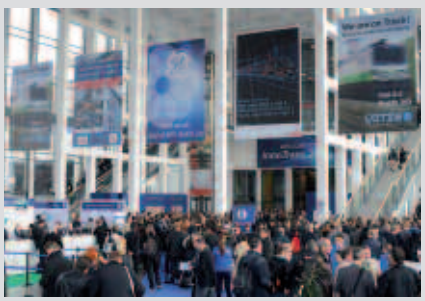
Exhibition highlight USB charger system

The latest innovations for interface, I&C and signaling products were exhibited on the 120 square metre stand. 230 customers from across the world took the opportunity to collect the information they needed first hand. The two highlights from the exhibition, the USB charger system and the secure I/O system LION, were met with a particularly enthusiastic reception. For the first time, the USB charger systems allow smart-phones and tablets- that have permanently found their way into modern train driver cabs, to be charged. The switchover from printed timetables and work instructions to these small gadgets means that there is global demand for rail-compatible chargers in existing and new vehicles. It is no wonder then that the newly launched product by LÜTZE was the centre of many conversations with customers.

LION for secure and non-secure I/O modules

The same goes for the LION system. Many customers were very enthusiastic about the possibility of being able to operate secure and non-secure I/O channels via the same infrastructure. Ultimately, this world's first allows efficient and inexpensive project planning of vehicle control systems in compliance with the latest standards.

In addition to products, standards and technical data, customers were once again enthralled by LÜTZE's model railway system in the floor of the exhibition stand. The team were very pleased with the exhibition and we look forward to the 11th Innotrans that will take place in Berlin from 20th - 23 rd September 2016.



KING KONG

Even an alpha leader needs good connections!

LÜTZE UK

The model made of rubber and rabbit fur that hung from the top of the Empire State Building and destroyed double-deckers in the original film measures just 61 cm in height. The modern stage incarnation of Kong stands six meters high and weighs more than a ton.

Five years in the making, the King Kong musical, produced by Australia's Global Creatures, took to the stage in 2013 at Melbourne, Australia's Regent Theatre.

The modern King Kong was designed by Global Creature Technology and aided by UK-based stage automation experts Stage Technologies - part of the Tait Group.

LÜTZE UK worked very closely with Stage Technologies to implement the connectivity solutions for this ground-breaking automation system. This ensures that the enormous silverback is capable of carrying out its tasks. The automation installations include more than 12 tonnes of steel structures, motors, winches and more than 3,000 metres of power cables that were installed inside the steel and aluminium XY frame of the puppet. 16 microprocessors and 15 servomotors are supplied with power to move King Kong's eyes, eyebrows and eyelids, nose, lips, jaw, neck and shoulders in a realistic way. A central part of this life-like King Kong is also its ability to make noises.

Inside the XY frame, the drive equipment is operated by very tightly routed cable and drag chains, meaning the design of the cable assemblies was critical. To this end, the LÜTZE SUPERFLEX® PUR cables were used for the servo and control functions. Also, complete cable assemblies were part of the supply requirements.

Multiple lines bridled down to each shoulder allow the the operators to make independent up and down movements and to manoeuvre Kong forwards and backwards. Optional lines could also be connected to Kong's back or front to allow the body to be moved in either direction.

The core chassis was one of the 'simpler' understructures in the construction. When mixing the anomalies of a gorilla's anatomy with the principles of engineering, which loves straight lines and good planes and marrying the mechanical functions of interior with the organic-looking Lycra and latex exterior was one of the big challenges of animatronics.

On top of the chassis was a layer of inflatables - air powered muscles - which gave Kong a lightweight body form. Over the top were a series of highly sculptured muscle bags that stretched and contracted to give the appearance of a whole anatomy beneath.

For the first time these bags were left exposed rather than being hidden, a deliberate move to emphasise Kong's muscularity and power - allowing him to furiously pound the floor without causing a minor earthquake.

KING KONG, a break-through in automation control. A puppet control system was created allowing the puppeteering of large scenic elements whilst retaining the full control and safety systems within the automation system.

At the end of the day, the King Kong Musical was the result of an unusual marriage of engineering know-how, automation and software competence with sculptors, artists, musicians and of course the actors themselves, which all lead to a unique piece of theatre.

© Photo: Jeff Busby

LÜTZE SUPERFLEX® spiral cable in the metal processing sector

Stéphane Savonet, Head of Sales – LÜTZE FRANCE

The company ALIPRESSE, which was founded in 1967, produces automation system solutions for cutting and shaping metal coils and has quickly become the European market leader in this field. As the leading manufacturer for feeders for automatic presses, DIMECO ALIPRESSE also consolidated its presence in three additional machine fields, namely reels, straightening machines and feeds. DIMECO ALIPRESSE also developed flexible forming lines for processing metals from coils, e.g. black, pre-painted and rust-free sheet metal and aluminium. For instance, the FLEXILINES DIMECO use different technologies, such as shaping, punching or bending, to process sheet metal up to a thickness of 10 mm.

These technologies have been continuously developed in the punching process sector, as demonstrated by the launch of the hot-rolled blanks, so-called coils. On cut-to-length systems, the material passes the machines on coils before being straightened and cut to size.

Premium technologies are used on the flexible forming lines to facilitate bending, punching and shaping the coils to make, for instance, lighting material, metal furniture and shelves, switch cabinets, refrigerator housings, washing machines and electrical convectors.

30 years of successful partnership

For the past 30 years LÜTZE has been a partner to DIMECO ALIPRESSE helping the company with its technical developments and equipping the machines with equipment and products from LÜTZE.

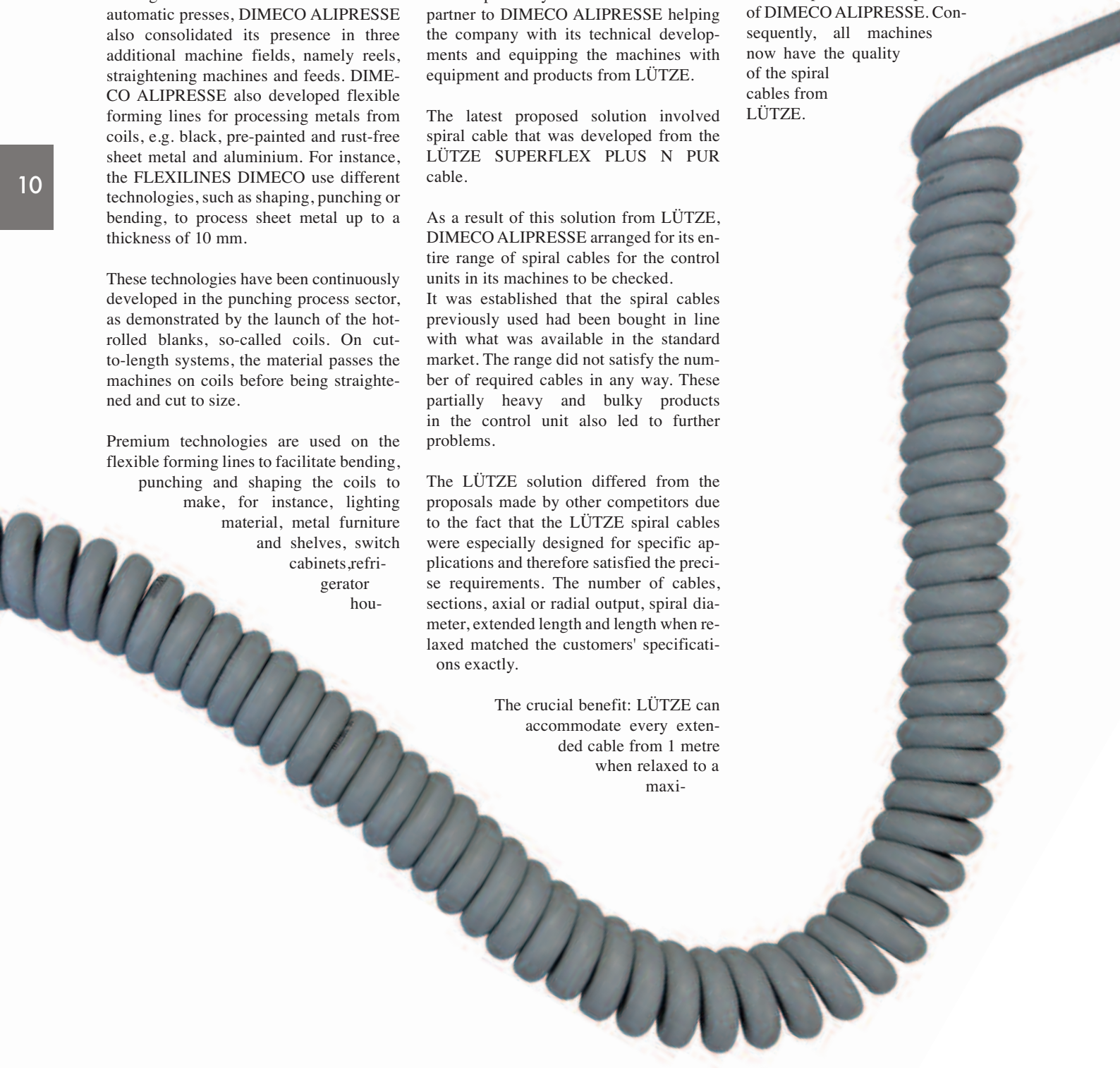
The latest proposed solution involved spiral cable that was developed from the LÜTZE SUPERFLEX PLUS N PUR cable.

As a result of this solution from LÜTZE, DIMECO ALIPRESSE arranged for its entire range of spiral cables for the control units in its machines to be checked.
It was established that the spiral cables previously used had been bought in line with what was available in the standard market. The range did not satisfy the number of required cables in any way. These partially heavy and bulky products in the control unit also led to further problems.

The LÜTZE solution differed from the proposals made by other competitors due to the fact that the LÜTZE spiral cables were especially designed for specific applications and therefore satisfied the precise requirements. The number of cables, sections, axial or radial output, spiral diameter, extended length and length when relaxed matched the customers' specifications exactly.

The crucial benefit: LÜTZE can accommodate every extended cable from 1 metre when relaxed to a maximum of 4.5 metres with just three spiral cables in the sizes: 25G0.5 mm², 18G0.5 mm² and 12G0.5 mm².

This proposal by LÜTZE completely met the performance specifications of DIMECO ALIPRESSE. Consequently, all machines now have the quality of the spiral cables from LÜTZE.



LÜTZE Premium TPE Tray Cable for Machine and Factory Automation

LÜTZE USA

LÜTZE offers innovative, market driven cable solutions for factory automation. LÜTZE's new premium tray cable combines superior flexibility, broad substance resistance and application versatility. This cable can be installed in cable ducts and industrial machinery thanks to the UL Type TC-ER and MTW listings while providing superior flexibility and an easily strippable jacket.

The LÜTZE premium TPE tray cable can be used in many industrial applications such as metal cutting, wood working, material handling, packaging and bottling equipment in industrial manufacturing facilities and is fully compliant with NFPA79 requirements.

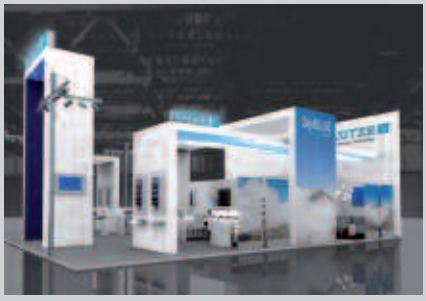
Its versatility originates from the resistance to many organic and inorganic materials such as mineral & plant based cutting oils and greases, kerosene, citric acid, paraffin, sea water, hydrogen peroxide solution 3%, and potash, to name a few.

The LÜTZE TPE cable is a better alternative to PVC tray cables, especially in terms of its oil resistance. Metal cutting fluids contain oils that can be highly aggressive toward thermoplastic jacket materials such as PVC. The cable was submerged for 4 days at 100°C and for 60 days at 75°C in vegetable based cutting oil which is known to degrade PVC. The LÜTZE premium TPE material passed the test with much better results than required by the oil resistance tests' standards. The LÜTZE cable is therefore an excellent choice for the metal cutting industry. The LÜTZE premium TPE tray cable has been adopted and specified by our automotive partners, particularly by the powertrain manufacturers and Tier I, Tier II OEMs.

Additional technical features:

- Crush impact resistant per UL 1277
- Non-wicking fillers
- UV and sunlight resistant
- Silicone and talcum free
- Cutting oil resistant – mineral & bio/vegetable based oils

Exhibitions 2016



Exhibition	Place	Country	Date
ATX West	Anaheim	USA	09.-11.02.2016
ATX South	Charlotte	USA	16.-17.03.2016
Drives and Controls	Birmingham	UK	12.-14.04.2016
Hannover Messe	Hanover	D	25.-29.04.2016
ATX East	New York	USA	14.-16.06.2016
SINDEX 2016	Bern	CH	06.-08.09.2016
IANA / IMTS	Chicago	USA	12.-17.09.2016
InnoTrans	Berlin	D	20.-23.09.2016
SPS/IPC/DRIVES	Nuremberg	D	22.-24.11.2016

NEW!
The LÜTZE SUPER CABLE App!

Discover what really matters in a cable!

Available on the App Store

ANDROID APP ON Google play

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