

# LÜTZE-REPORT

The international magazine of the Lütze Group

**CERN**

**NEW PRODUCTS**

**DRY AIR**

**NEW CONVERTER FAMILY  
IN IP67 VERSION**

**LÜTZE – THE IDEAL  
«MULTI-PRODUCT» PARTNER**

**FLEXIBILITY AND QUALITY**

**SPECIAL SOLUTIONS FROM  
LOG-O-MATIC**

**THE BEST OF BOTH WORLDS**

**LÜTZE AND THE MAVERICK  
ROLLER COASTER**

**LÜTZE**   
Systematic Technology

# e d i t o r i a l

## EDITORIAL



Udo Lütze  
CEO Friedrich Lütze  
International Group

### Europe: location with a future or location of the future?

Globalisation is not only a topic lots of people are talking about, but also a topic that is being experienced by many. This not only affects large-scale enterprises with a global commitment, but also the smaller companies in our circles that are facing up to stiff competition from Asian companies. As a result of these market changes, Europe is frequently being questioned as a location.

We are of the opinion that this is not justifiable. Europe is a location with an outstanding future. Cheap products from the Far East also have their problems, as you can read in the press these days, and plenty of customers are again thinking about the quality that Europe has to offer. And it is precisely here where we see an opportunity for ourselves and our customers.

As a system supplier, we want to help our customers to manufacture high-quality products and to market them profitably around the globe. If it focuses on quality and optimised processes, Europe can not only hold its own on the world market, but also secure a leading position.

Yours sincerely,

Udo Lütze

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# CERN

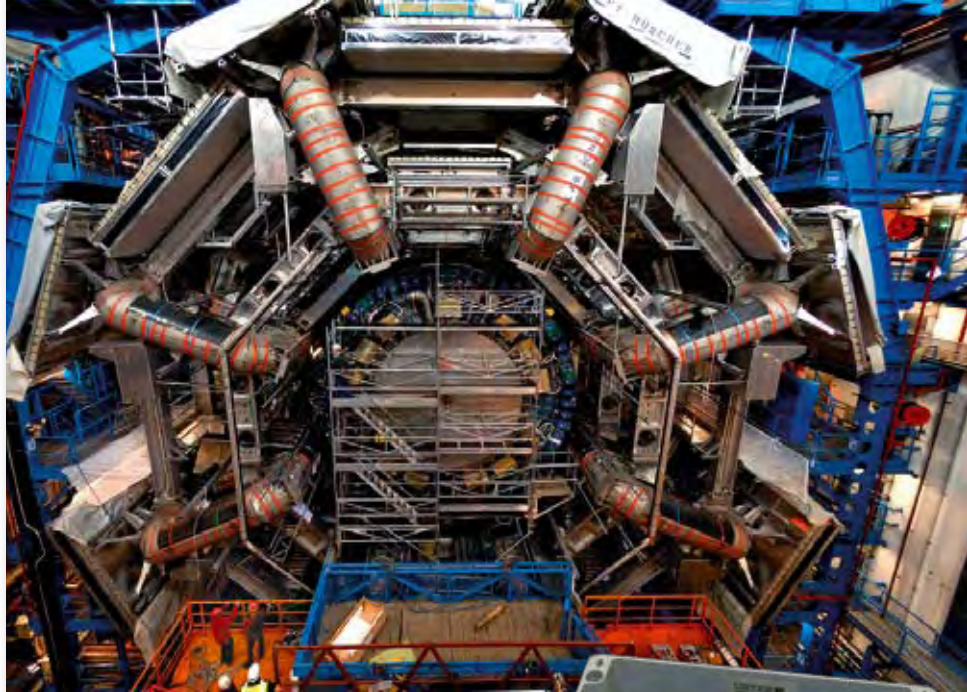
Claude Jan du Chêne, Switzerland

CERN is the European Organisation for Nuclear Research and the world's largest centre for particle physics, with its headquarters in Geneva. Using new particle accelerators and particle detectors, scientists are researching the component parts of matter, as well as the forces that guarantee their cohesion.

Four particle detectors which are being used in the new accelerator, the LHC (Large Hadron Collider), analyse proton collisions with an energy never achieved before.

The largest of the four particle detectors is called ATLAS and is so enormously proportioned that staff can move around inside it to perform maintenance work. Therefore, a monitor system has even been developed for the movement of personnel.

CERN was looking for a solution for recording the information from the infrared detectors in use that not only combined efficiency and compact size, but also complied with the requirement for a halogen-free design without the use of ferromagnetic parts. During the development of the housing, CERN relied on the not inconsiderable



The ATLAS particle detector being constructed in CERN (as at 10 June 2006)

know-how of Lütze AG. CERN provided the data recording card via a field bus system, as well as various assembly parts without ferromagnetic components, whereas Lütze packaged them in the most compact form possible. The transfer modules in the halogen-free aluminium die-cast housing simplify connection, the cables are fed in using halogen-free, universal «Cablefix» cable entry flanges, also from Lütze.

The results are easy to see: The housing has been successfully tested and put into operation in the experimental cavern of the ATLAS to the full satisfaction of CERN.



Lütze is supplying CERN with 100 housing units

## LÜTZE AT GO. AUTOMATION 07



Lütze at go. automation technology, Basel

**Lütze's exhibition presence was all about innovation, and aroused much interest in visitors from all over Switzerland. This clearly indicates how important a regional presence is.**

With its 6.2 mm wide, programmable converter and the new LCCS load-monitoring modules, Lütze demonstrated how far advanced it is in this field.

All in all, Lütze was able to record some very positive results from this year's presence at go. automation. The active encouragement of visitors confirms that our market-orientated product policy is on the right track. «Not only did the number of visitors

increase, but we also established a marked improvement in the quality of the discussions held,» confirms René Koch, Managing Director of Lütze AG Switzerland.

## TRADE FAIRS

### Lütze goes around the world

Exhibition	Date	Place
MSV	01 – 05/10	Brünn
Smart	03 – 05/10	Linz
efa	24 – 26/10	Leipzig
SPS/IPC/DRIVES	27 – 29/11	Nuremberg
AM-Expo 2008	19 – 20/3/08	Charlotte, NC
Hannover Messe	21 – 25/4/08	Hanover
InnoTrans	23 – 26/9/08	Berlin

# NEW PRODUCTS

## PERFECT CABLE PROTECTION IN THE TWINKLING OF AN EYE

Automation specialist Lütze presents the CONDUFIX cable protection system. It stands out especially because of its easy handling and time-saving installation.



Cable links between machine and system parts are a sensitive point, where wire breaks are unfortunately almost bound to happen. For these areas of application, Lütze offers an «effective remedy» in the form of the CONDUFIX cable protection system. In the CONDUFIX cable protection tube, all of the cables, even multi-wire control lines, have enough play and can move around one against another. In this way, quick changing tensile loads are prevented during bending.

An important extra point: The special corrugated profile of CONDUFIX protective

tubes makes it possible to insert an O-ring in the last groove. Therefore, when used with an appropriate screw connector, these protective tubes offer real protection against the external influences of tough, day-to-day industrial operation, as per protection classification IP68.

A matter of great concern to Lütze engineers is easy assembly during manufacturing and when retrofitting. An important aspect therefore is a range of screw connectors, system holders and brackets, specially matched to the cable protection tubes. Over and above this, Lütze also produces completely assembled CONDUFIX cable protection systems, including cables and plug connectors.



### CONDUFIX cable protection: a system for many applications

The cable protection system from Lütze offers a suitable protective tube for countless applications: from the lightweight PA6 corrugated tube for minimal stressing to reinforced versions and corrugated protective tubes made of PA12 suitable for use with robots. Also supplied are protective tubes made of PVC or PU with an internal plastic spiral, as well as smooth protective tubes made of PVC with a galvanised steel wire mesh, for example for use on welding robots.

The extensive range of screw and other connectors for PA protective tubes includes fittings with PG, metric and NPT threads. They are either made entirely of plastic or plastic with a metal thread. Connectors are available in straight, 90° angle and 90° arc angle versions. Over and above this, Lütze also supplies 90° angle flanges and T- and Y-shaped junctions. Lütze also traditionally offers a wide selection of assembled cables and leads. Plug connectors exclusively from reputable suppliers are used.

# FIRE ENGINE MANUFACTURERS PLACE THEIR TRUST IN SUPERFLEX PLUS FROM LÜTZE

**Jürgen Ehrlinger, Germany**

Metz Aerials, a company with a long tradition, has been building fire engines in the German town of Karlsruhe for many decades. Since 1998, Metz has been part of the Austrian Rosenbauer Group, the world's second largest manufacturer of fire engines.

Fire brigades demand the highest quality and reliability of their vehicles. So when it comes to wiring, Metz relies on tried and trusted Superflex Plus N (C) PUR cables from Lütze.

With its PUR outer layer and TPE conductor insulation, Superflex Plus is suitable for extremely tough operating conditions, and offers the standards necessary for Metz vehicles.

Resistance to weathering, ozone and UV light, as well as resistance to hydrolysis and rotting are important aspects when building working vehicles. Especially when it comes to turntable ladders, Metz places great importance on good resistance to pressure and being run over, as well as high flexural strength.

Lütze Superflex N (C) PUR is extremely abrasion-proof, notch-tough and resistant to tear propagation.

The screening mesh is also designed for long-term flexible use and offers optimal protection against the influences of electrical interference fields. Further important positive features include the operating temperature range, as well as freedom from LABS and halogen.

Lütze supplies an extensive range of cables for the working-vehicle sector that satisfy not only market requirements, but also relevant standards.



# DRY SOLUTIONS AS INDIVIDUAL AS THEIR PROCESS SEQUENCES

Ralf Coors, Germany



2

**Air humidity is a decisive factor for many production processes. It is important here that consistent conditions are maintained permanently throughout the process.**

**Ultimately it is only in this way that optimal**

**product quality can be guaranteed. Lütze signal converter and power supplies provide the ideal foundation here.**

Since 1990, the company Ahlberg & Henrich (A+H) has been designing and supplying systems for dehumidification and process air conditioning. A+H develops customer-orientated solutions that comply with the most varied of requirements as regards optimal industrial processing air conditioning.

Michael Ahlberg, Managing Director of A+H Sorptionssysteme, names a few examples where air humidity can be a significant cause of damage. We do, of course, know the effects of air humidity in our everyday lives. Over time, salt, sugar and flour can solidify or become unusable. The same applies to the storage of goods, believes Christian Brunotte, Project Engineer. Expensively insulated silo installations and mechanical equipment will not solve the problem of hygiene during storage. The only way of protecting products from damage is by lowering the relative humidity of the ambient air. By using suitable dehumidifiers, a constant, low level of air humidity can be ensured in these systems. We use different methods for dehumidifying air and gases. Which one we use depends on



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the particular situation and the volume of air to be processed. This dictates which equipment we use (ventilation duct, sorbent), which regeneration energy can be used and how best to integrate the equipment and design of the dehumidification system into the production process. The wide application field for dehumidification is well covered by the A+H product range. The company produces everything from compact units for 50 m<sup>3</sup>/h dry air up to complete systems, capable of processing 150,000 m<sup>3</sup>/h.

«For us this means that in the control system, we have to consider devices that can be integrated into all systems from both the functionality point of view and the size. Therefore, we decided on the analogue and temperature converters of Lütze, as well as its switching power supplies.»

«In the case of Lütze products it is especially their adjustment to different levels and temperature ranges, as well as the high level of accuracy for the higher-level control unit that are exemplary. That and the compact design, being only 6.2 mm wide, are pivotal for use in our systems.»

«Having decided on signal converters from Lütze, we were able to reduce our usage down to two models.» According to Christian Brunotte, the same applies to the versions of the DELTA switching power supplies from Lütze that are used. «It is in particular the compact design and excellent price-to-performance ratio that enables us to use them both in individual devices and in complete systems.»

## LÜTZE: THE IDEAL «MULTI-PRODUCT»

Armand Patte, France

**IMA is a leading company involved in the manufacture of special machines for industry, and especially for the automotive industry.**

**Its service ranges from planning to the designing, production and testing of the systems. The result are turnkey systems for the machinery and plant construction sector.**

As customers get more and more demanding and more cost-conscious, IMA relies on innovative solutions from Lütze.

- Firstly, the LSC rack and EMC accessories offered a solution for the demand for an independent wiring system with reduced space requirements. There is no doubt that the aesthetic design also contributed significantly to the choice.
- Then, high-performance and reliable power supply products from the DELTA

series are used. Because of their voltage and output values, they are in line with the stringent requirements of industrial systems.

- On the advice of our Product Manager, halogen-free Silflex-N PUR and highly flexible Superflex bus and network cables were integrated into the dynamic machines.
- Finally, our programmable converters complied with technological requirements (ground, controls, current and voltage insulation).

The two latest products from Lütze also met with IMA's approval:

- CABLE-FIX Vario universal cable feed-throughs are used to feed cables through the wall and to reduce the space cable screw connectors would require. Cable screw connectors are often replaced by a

6



1

### Good cooperation as a foundation

«Although this cooperation has been going on for just over a year, experiences so far have all been positive. Response times and technical support have been in line with my requirements of a leading company in the interface technology business, Christian Brunotte states. «Even under difficult operating conditions such as vibrations and the most varied of industrial atmospheres, the Lütze equipment we are using works exceptionally well.»

### Captions

- 1 Lütze Mikrokon series temperature converter
- 2 Climatic chamber
- 3 VW Mexico

# NEW CONVERTER FAMILY IN IP67 VERSION

Virgil Ghizelea, Klaus Jüngling, Germany



The next generation of signal converters from Lütze has been developed based on the IP20 interface converter in its 6.2 mm wide housing. They combine accuracy and robustness.

These interface converters comply with the IP67 standard for the first time by using IP67-compatible plug connectors (leak-proof connection) and the encapsulation of the converter, which means the inner workings are protected from dirt, water and being touched.

### The IP code

The IP (International Protection) code is used to classify the degree of protection (from dust and water) in a standardised manner. IP67 is demanded in tough environmental conditions, if the housing has to fully protect the electronics from outside influences, e.g. for use outdoors or in railway applications. Here, Lütze falls back on its many years of experience in encapsulating electronic components.

### Hardware

A new aluminium extrusion profile is used for the housing. The connecting system for the power supply uses M12 IP67 plug connectors. The converters also have a power supply input, as well as an output for looping through the power, therefore making it possible to operate several IP67 converters in parallel with only a single power cable.

M8 IP67 plug connectors have been selected for the signal inputs and outputs, as well as the programming interface. Different shapes prevent inadvertent mixing up with the power supply.

All converters can be snapped onto top hat rails and are available in a standard housing size (113×78×20).

### All alternatives catered for

Lütze has developed a complete product family of IP67 converters, that covers the entire range of previous converters. Depending on the design, there are all versions of the 6-pin analogue and temperature converter, as well as the single-channel passive isolator and the 8-pin programmable temperature converter. The technical specifications of the IP67 converters are identical to those of the IP20 versions.

The first samples will be shown in October at the ISA in Houston, as well as in November at the SPS Messe in Nuremberg. Series production is planned for this year.

## PARTNER

CABLE-FIX Vario system, whereby compactness is maintained and there is still some space in reserve.

- The RJ45 plug connector creates a quick connection point in switch cabinets for control systems, operating consoles, display equipment, etc. This does away with opening the switch cabinet door which

may require authorisation – something control system technicians or programmers do not always have.

IMA appreciates the reaction times, advice and the extensive product range of Lütze. This also optimises expenditure on order administration.





1

**HAGE special machines increase efficiency and productivity in areas that are recognised as being difficult to automate. Lütze Superflex® cables are used above all in drag chains which link the moving parts of the machine with tight bending radii. Along with the reliable product quality, HAGE appreciates the advice it receives from the cable manufacturer.**

HAGE Sondermaschinenbau GmbH & Co KG was founded in Obdach 25 years ago as a job order production company. Today, with a workforce of 80 people, HAGE specialises primarily in machines for machining long goods and profiles. End products produced on HAGE machines are bumpers and crash boxes for the automotive industry, windows for rolling stock, profile-reinforced formlining for the building trade and flanged oven pipes.

With very few exceptions, HAGE machines are highly individual, with about 30% being fully customer-specific. They use a high level of automation in areas of production that are generally accepted as not being capable of being automated.

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2

**Successful worldwide** Machines from HAGE are in use on every continent. In order to avoid servicing and warranty cases as much as possible, HAGE has to depend on proven products: e.g. for the cable connections between moving machine parts, it relies on the drag-chain compatible Superflex® cables of Lütze.

Commenting on this, Joint Proprietor and Technical Director, Stefan Hampel, a graduate engineer, says: «The cables, irrespective of whether power supply, control or data lines, must cope with an enormous number of cycles with very tight bending



# FLEXIBILITY AND QUALITY ENSURE AUTOMATION SUCCESS

**Hans Kraushofer, Austria**

radii and high acceleration forces without any mechanical changes.» And resistance to chemicals also has a significant role to play: «Once delivered, we have no control over what lubricants or coolants the customer uses. Therefore, all parameters must be selected so as to be able to handle all eventualities.»

## Diversity, internationality and good advice

The cables in the Lütze Superflex® series, which are designed for continuous flexible use, satisfy the highest requirements in terms of flexibility when cold, plus resistance to abrasion, oil and chemicals. The product range covers all types of cable (from bus and network cables for use in industrial field bus systems, such as Profibus, Interbus, CAN, DeviceNet, Ethernet and Profinet, to incremental encoder cables for controlling servo-motors or frequency conversion equipment and highly flexible motor connection cables, also with large connector cross-sections). Lütze also offers all of these cables fully assembled with plugs according to customer-specific requirements.

It is also important for a company like HAGE, that supplies all over the world, to be able to certify the cables it uses according to all internationally valid regulations and to satisfy such approval organisations as the American UL.

Mr. Hampel also says another reason for the many years of loyalty to Lütze is the competent advice he receives. «The correct laying of the moving cables is of great importance for trouble-free operation over a long period of time. Old hands, like our support contact, Hans Kraushofer, recognise at a glance if a drag chain is too full and know how many bridges are necessary for an optimal result.»



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## Cooperation for decades

Cooperation with Lütze, however, extends to other products. So Lütze's labelling system using thermal transfer printing is used in switch cabinets and for the fixed laying of cables over great distances, the mesh cable ducts of Swedish manufacturer Defem, which are simple and flexible to lay.

But of course, Lütze is not the only business partner used. If there are realistic reasons, other suppliers are employed, but not until the preferred partner has been given the enquiry first. Stefan Hampel: «When my brother and I took over the family business in the year 2000, cooperation with Lütze had already been going on for over a decade. And everything points to the fact that it will continue long into the future.»

## Captions

- 1** Machines for machining long goods and profiles are a speciality of HAGE Sondermaschinen.
- 2** Johann Cernko, Control Engineering Manager, demonstrates critical cable laying through different channels and drag chains with tight bends.
- 3** Lütze Salesman Hans Kraushofer and Mr. Stefan Hampel of HAGE

# SPECIAL SOLUTIONS FROM LOG-O-MATIC



## Markus Müller, Germany

The three companies LOG-O-MATIC GmbH, KW Abricht-technik GmbH in Mainaschaff and G & N Genauigkeitsmaschinenbau GmbH in Nuremberg have a total workforce of 80 people. For over 40 years they have been developing and producing at both locations solutions in the fields of special, cylindrical, surface and internal grinding machinery. They particularly specialise in ceramic grinding machines, mainly for the semi-conductor industry and for diamond wire saws.



Particularly hard materials are sawn with the diamond micro-multiwire saw, e.g.

- silicon (photovoltaic)
- quartz
- glass
- sapphire (LED technology)

The advantages of this type of machine are:

- precise, smooth cut
- very little material loss
- does not heat up
- does not disturb the molecular structure
- thin cuts possible (0.2–40 mm)
- integrated modem for remote maintenance

For the manufacture of this machine, LOG-O-MATIC relies on Lütze UBE-D transfer modules . . . with different numbers of poles as an interface in the switch cabinet, which are clipped onto top hat rails.

The linking of control systems (master and slave), which are fitted directly onto the machine in a display housing, is now effected using a feed cable. It is fitted with a sub-miniature D-plug at the switch cabinet end and simply connected to the transfer module.

The decisive advantages of using Lütze transfer modules as opposed to conventional links with terminal blocks are as follows:

- easier, cleaner and faster assembly
- guaranteed to fit
- quicker to dismantle in the event of a fault or servicing

For the customer, this results in improved operating reliability whilst simultaneously reducing assembly time on site and therefore also reducing production costs. Commissioning also proves to be easier.

# LÜTZE INTERNATIONAL

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Please send us information about your entire product range.

We would like some advice. Please call us.

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# THE BEST OF BOTH WORLDS

Nigel Broad, Great Britain



Current PLC systems have come a long way since the first large cabinet-based units appeared on the market place 20–30 years ago. They now pack so much sophistication into very small packages that they have revolutionised control system design.

But miniaturisation, whilst good in general terms, can bring its own problems. Basic switching devices have to be a certain physical size to allow for adequate isolation and switching capability. What this means is that modern rack- or slot-type PLCs are no longer able to have large-capacity relay output cards. The manufacturers simply cannot fit 32 relays into the small module packages. The best that can be offered are 8-way or 16-way relay units, meaning that you need twice or even 4 times the number of output modules for your system.

32-way transistor output modules are usually available for all systems, but they often have only limited DC switching capability. System designers are therefore faced with fitting rows of individual relays, with all the necessary build and wiring time, or they must use twice or 4 times the number of output cards and wire down to terminals. Neither option being very efficient use of time or space.

To combat this problem, Lütze has manufactured a DIN rail-mounted module with 32 separate compact changeover relays and a standard SUB-D interface for simple connection to almost any PLC control system. Each relay has individual LED status indication so even if the relay module is remote from the PLC, at the bottom of the control panel for example, fault finding or system checking is really easy. Pre-made interface cables are available covering all the major PLC manufacturers, so installation is both very quick and very reliable.

Conventional electro-mechanical relays are supplied as standard, but these can easily be changed for semi-conductor devices in a mix-and-match application if required. This was one of the benefits identified by Turbine Controls in Leicester.

Stephen Gregory, Turbine's MD, said «the Lütze relay card was chosen due to the compactness of the unit against that of the competition and the flexibility of being able to use both SSR and conventional relays on one card. Cable lengths were ordered to exactly suit the application and cost savings against previous solutions made the decision even easier».

To keep things really simple, Lütze provided just 2 part numbers to order, one each for the cable assemblies and the relay module. The cables plugged directly onto the Allen Bradley «Control-Logix» PLC with no special connectors needed, completely eliminating wiring errors.

So now system designers and installation engineers can enjoy the best of both worlds. Compact PLCs with high-density output cards can be specified for maximum efficiency, and Lütze DIN rail relay modules can be fitted providing increased current capability for control system interfacing. The whole lot can be wired in moments using cable assemblies available in any length.



## LÜTZE AND THE MAVERICK ROLLER COASTER

**Rich Vinnece, USA**

**Cedar Point Amusement Park, the Roller Coaster Capital of World, which is located on the shores of Lake Erie in Ohio, added the Maverick Roller Coaster in 2007 to make the total number of roller coasters to seventeen. The new coaster uses a Western Cowboy theme that is full of twist and turns at speeds up to 70 mph. During the construction period of the ride, a major delivery issue occurred on the main power drive cable. This delivery issue threatened to delay the opening of the new ride for the 2007 season. Opening and operating on time each season is one of Cedar Point's major goals.**

The project's electrical contractor, All Phase Power and Lighting Inc, contacted Tanner Wire and Cable to see if they could help them on their delivery issue for the main motor drive cable. Tanner Wire and Cable is a wire and cable distributor who specialises in solving unique problems for their customers.

Jeffery Tanner, the president of Tanner Wire and Cable, contacted Lütze to see if we could provide the specified 350 MCM (185 mm<sup>2</sup>) motor drive cable in time for the 2007 opening of the new Maverick ride. Lütze's Cable Product Managers and Production Staff responded to the Tanner request by offering a delivery for the 3,200-



feet motor drive cable that would permit an on-time opening of the newest roller coaster at Cedar Point, the Maverick.

Cedar Point and Mr. Frank Kath, the president of All Phase Power and Lighting Inc, were very appreciative that Lütze Inc. was able to provide a solution that placed the Maverick project back on schedule. The Maverick is now providing thrills everyday because of Lütze's commitment to meeting the delivery schedule.

# Reaching new heights in automation



**LVTZE**  <sup>®</sup>  
Systematic Technology