

# LUSTtec

No. 19  
April 2007

## LUST worldwide

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## Growth and internationalization New power and innovation

[ For a Group such as ours – which has now recorded annual growth of over 15 % for the fourth year in a row and which is determined to position itself advantageously for the future – a stable, highly skilled and motivated workforce and a strong management team are essential attributes. ]

By appointing Dr. Josef Wiesing to the management board of Lust Antriebstechnik GmbH, we have expanded and enhanced our top management. Our aim in this is to strengthen engineering and innovation within the parent company Lust Antriebstechnik GmbH and across the Group as a whole, in line with the importance of those two fields to the development of our business.

Dr. Wiesing heads the Development, Product Management and Application functions on the board. His career at LUST began in 1991 as a group leader in servo and systems engineering. In 1998 he was appointed a section head, and latterly he has been general manager responsible for the technical departments. This appointment has further enhanced the ability of Lust Antriebstechnik GmbH to meet the challenges of the future and to identify and attain new goals.

The latest figures show that it is the markets in Europe and Asia in particular, where we have focussed the expansion of our own branch network in recent years, which will drive the further growth of the business. Competition is becoming more international; markets around the world are merging into a single global market.

We have established the right conditions and now what we have to do, with renewed power, is translate the challenges we face into new opportunities and continued success.



[ From left: Dr. W. Lust, Dr. J. Wiesing, K.-H. Lust ]

We are looking forward to making our customers ever more successful, on international markets as well as at home, with our range of outstanding products and services and the strength of our service backup.

*Dr. Wolfgang Lust*

[ ]



[ Photo: Still GmbH ]

## Lifted by LUST

[ Is it possible to develop a completely new traction drive for materials handling vehicles through to production maturity within 15 months? That was the question confronting the development engineers at Still GmbH in Hamburg and LUST back in 2005. Following lengthy discussions, detailed planning and extensive risk assessment, the joint attempt was launched. Despite a number of setbacks of a kind which are unavoidable in such complex development projects, the finished unit was ready in time for the launch of the new RX 70 forklift in October 2006. Since that time it has been performing to a high level of reliability in tough operating conditions. ]

Perhaps the biggest benefit of the hybrid technology deployed by STILL in the RX 70 is its high overall efficiency. There is currently no other 2.5 tonne forklift which is able to deliver so much performance per hour from just a 2.5 litre diesel power source. As well as low energy consumption, the unit's design also provides for low wear on the drive system. The system consists of a generator driven by a combustion engine, an intelligent control unit, an asynchronous motor and the traction drive electronics from LUST.

The drive electronics unit delivers a driving power of up to

45 kW at high DC link voltages of 600 V. This marks the traction drive out as very different from those used on battery-powered forklifts. Synergies between the combustion engine and the traction drive are exploited to the full: the combustion engine is used to cool the traction drive and in a later configuration stage the traction drive in turn additionally helps drive the fan to cool the combustion engine.

Initial response from end-user customers has been thoroughly positive. They particularly like the unit's much improved handling over its predecessor models, an enhancement achieved

primarily by the higher dynamics of the electric motor's speed control system. These innovations will shortly be available in a new, higher-power variant of the RX 70.

*For more information on the new RX 70 visit [www.still.de/8727.0.43.html](http://www.still.de/8727.0.43.html).*

*Dr.-Ing. Andreas Bunte  
Lust Antriebstechnik GmbH*

[ ]

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## LUST – co-founder of industrial network

[ Eight companies based in the Dortmund, Unna and Hamm areas are breaking down boundaries and establishing entirely new forms of collaboration. They aim to set up a close-knit network to interchange experience and resources, coordinate procurement, cooperate on development projects and work together to open up international markets. This systematic interchange will boost the innovative strength not only of the companies involved, but also of the region as a whole. ]

The founding members of the ‚Verein Netzwerk Industrie RuhrOst e. V.‘ (Eastern Ruhr regional industrial network), alongside LUST Unna, are the Department of Work and Production Systems at the University of Dortmund; KHS AG; AB Elektronik GmbH; Böcker AG; DBT GmbH; Montanhydraulik GmbH; and the Unna district economic de-velopment corporation (‘Wirtschaftsförderungsgesellschaft für den Kreis Unna mbH’). Development Manager of Lust Antriebstechnik GmbH in Unna, Dr.-Ing. Andreas Bünthe, is a founding member of the organization’s board.

The network has a very concrete vision: The Eastern Ruhr region, as a centre of production and innovation, has the potential to become a key nodal point in the international exchange of goods and services in the metalworking, engineering and industrial electronics sectors.

With some 28,000 people employed in around 1,000 businesses in those sectors, the region offers a major industrial base to fulfil that



[ The founding members during the foundation meeting ]

vision. And that industrial base will in turn be spanned by a close-knit service network. In order to achieve those aims, the organization has set out a clearly defined code of conduct, incorporating the establishment of a culture of mutual trust and an open and fair approach to dealings with each other.

There are plenty of specific areas in which the organization can begin its work. Alongside building a structured interchange and arranging resource sharing among members, the organization will also help raise the profile of the region through its member companies as well as aiding the internationalization aims of small and medium-sized enterprises.

For more information on the organization, visit its website at [www.ni-ro.de](http://www.ni-ro.de)

Dr.-Ing. Andreas Bünthe  
Lust Antriebstechnik GmbH



## Our French partner transtechnik is celebrating its 20th anniversary

[ It was in December 1986 that Michel Armand founded the transtechnik s.a. company in Dijon, France. ]

From the very beginning, the focus was on efficient solutions for motion control. Today transtechnik is a byword throughout France for expert servo drive solutions. The company comprises the two mutually complementary Electric Servo Drives and Mechatronics divisions, and as such is able to offer its customers complete solutions for precise motion control. LUST and transtechnik have been working together successfully since the year 2000.

The company’s 20th anniversary was celebrated in style, though the high-tech corporation actually chose to mark this major milestone by returning to the Middle Ages: a party held without electric power, and in traditional mediaeval dress, was a special experience for all the staff, and an occasion which will live long in the memory. But now the transtechnik team is back on the power, busy devising lots of new drive solutions for its customers. LUST would like to add its heartfelt congratulations to transtechnik, and wishes the company continued success in the future.

Jens Thielmann  
Lust Antriebstechnik GmbH



# Lust Hybrid Technik GmbH in Hermsdorf

[ Review – Outlook ]

## Review

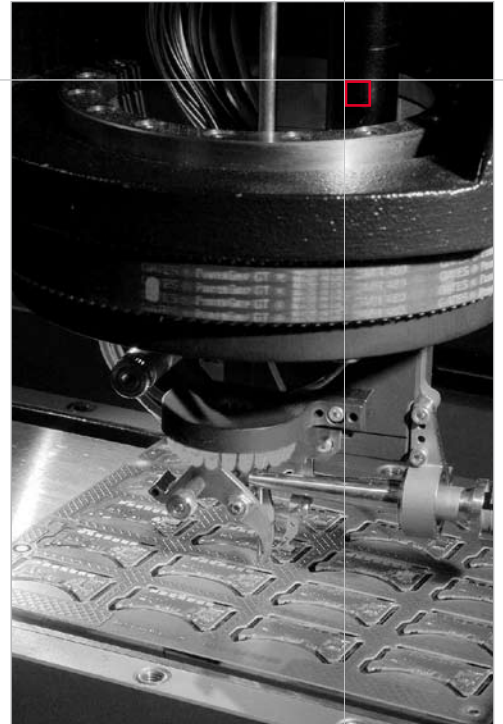
2006 was one of the most successful years in the history of the Lust Hybrid Technology unit, Lust Hybrid-Technik GmbH. The most obvious sign of that success is the sales turnover, which for the first time surpassed the magical 10 million Euro mark. Another notable factor was of course also the integration of the manufacturing facility in Wutha-Farnroda, which was acquired in early 2006. Alongside its existing product range, the Wutha facility is now also producing an array of new products. In addition, the production of various products has been transferred from the mother plant in Hermsdorf to Wutha. In the course of the year Wutha-Farnroda was fully integrated into the structure of Lust Hybrid-Technik GmbH, both in terms of the production planning and control system and logistically. Investments in soldering and TS bonding operations will significantly enhance the performance capability of the facility.

Similar progress has been made at the mother plant in Hermsdorf, where the machinery portfolio has been upgraded in both the US and TS bonding areas. A total of 26 new jobs were created. Thanks to the newly introduced CRM (customer relationship management) system, contacts with our customers will from now on also be handled even more efficiently. The steadily rising proportion of products for the automotive components industry in recent years was the motivation for us to establish the groundwork for certification to TS16949.

## Outlook

A major step which we are looking forward to in 2007 will be our certification to TS16949. Our quality representative, Dr. Rink, is devoting the full wealth of his experience and skills to the undertaking. It is equally important for us to continue meeting the demands of the market both in terms of quality and quantity. We are achieving that by means of new investment, such as in component mounting, where we are planning to increase our capacities substantially. We will also be enhancing our optical inspection capability, with the acquisition of an AOI (Automated Optical Inspection) system. A new die-placer will enhance our COB operations.

*Frank Hofstedt  
Lust Hybrid-Technik GmbH*



[ Bond head of the new US wire-bonding machine ]

## Students keen to learn

[ The Training Fair held in Wetzlar in September 2006 was again very well attended. ]

Over 3,000 interested school pupils from the Lahn-Dill district took the opportunity to gather some important information on in-house apprenticeships or courses of study (StudiumPlus) directly from the exhibiting educational institutions and companies. As

in previous years, the LUST stand proved highly popular, providing students with details of career opportunities in both the technical and commercial fields.

This is where the first contacts are made with future apprentices and student interns, and we look forward to the prospect of seeing one or other of the students at LUST in the not too distant future.

One of the fundamental aims of LUST is to enthuse even primary school children for engineering and technology by enabling them to experience it at first hand. One of the best platforms in attaining this goal is the 'Alliance for the Family' initiative launched over a year ago by the German Federal Ministry of Family Affairs, as a



means of improving child-friendliness in general. As part of the initiative, LUST is working together with local primary schools, the Chamber of Commerce and various other industrial companies as a member of the Schools and Businesses Working Group.

To date, three 4th year primary school classes have toured the LUST site to find out more about the company and what it does. They then had the opportunity, assisted by some of the company's apprentices, to construct a small electronic circuit in the training workshop. The children were thrilled, and at the end of their visit they presented the certificate they had produced on the computer.

*Catrin Günther, Jürgen Schnorr  
Lust Antriebstechnik GmbH*

[ ]

# 9th MR Sensor Symposium in Wetzlar

[ The biannual Magneto-Resistive Sensors and Magnetic Microsystems Symposium included more than 20 presentations covering a wide variety of topics in the field of Magneto-Resistive (MR) sensors, as well as providing an overview of the latest developments and trends in the subsidiary fields of AMR, GMR and TMR technology. ]

Specialists from the industrial and research spheres presented papers and held discussions relating to basic scientific principles and to new potential areas of use of MR sensors in a variety of applications covering industrial automation, the automotive industry, traffic monitoring and medicine.

The basic science section included presentations on ion bombardment-induced magnetic structuring, tunnel magneto-resistive materials, biosensors and magnetic marking. The applications section incorporated reports on possibilities arising in traffic data recording, non-destructive materials testing, special applications for angular sensors, elastomer-bound magnetic systems, FIB/EDX inline analysis and chip-on-chip solutions.

Magneto-Resistive sensors are deployed wherever movement has to be monitored and controlled in a highly precise and dynamic way; wherever angles, distances, position, electrical current or magnetic fields are measured and detected; and whenever robustness, accuracy, ease of integration or low energy consumption are not mutually exclusive.

The MR Symposium has established itself as a major forum for specialists from a wide variety of research and application areas relating to magnetic field measurement and the associated development of magnetic microsystems. For many of the well over 100 participants, the Symposium is also a welcome opportunity for interchange with users from a broad range of application fields and a chance to discuss the advantageous deployment of MR sensor technology.



[ Karl-Heinz Lust in conversation with Prof. Dr. Peter Grünberg, the man who discovered the GMR effect ]

For the first time, the evening of the first day also incorporated a short tour of the over 800-year-old town of Wetzlar. Most of the participants in the Symposium took the opportunity to supplement their interchange of the latest information on magnetic field measurement and related topics by also learning a little about the surroundings in which the event was held: the town which inspired the young Goethe to write one of his major works: "The Sorrows of the young Werther".

Joachim Achenbach  
Sensitec GmbH

[ ]



# Greece –

## Fruit and vegetables safely packed for transportation

[ Greece is not only a popular holiday destination. As well as offering sun-drenched beaches and picturesque villages set against an azure-blue sea, it also grows a wide variety of fruit and vegetables. The produce is mostly packed in solid wooden crates for shipping to consumers all over the world. ]

KYMA, our Greek system partner, has designed an enhanced drive concept for the machines used to make those wooden crates in collaboration with a local manufacturer.

Previously, for reasons of cost, the machines used standard asynchronous motors with mechanical brakes. A disadvantage of this technique, though, was that wear on the mechanical brake, caused by the high dynamics when braking the motor, resulted in high machine maintenance costs.

The new drive system is again fitted with a standard asynchronous motor, but the motor is now controlled by a c-line DRIVES series positioning controller, the CDB3000 from LUST.

The motors (several groups of four nail heads) are now controlled by the "table-assisted positioning" function in the drive controller. This function pre-programs the travel, velocity, acceleration and braking distance in a table.

Consequently the nail reaches its maximum velocity as it impacts the material, resulting in a very high quality join of the wooden parts. This ensures a highly reproducible quality of nail join.

Installing the CDB3000 positioning controller enabled the cycle time per nailing process (to join two pieces of wood) to be reduced to 350 ms, resulting in a higher crate output (increasing production to around 2,500 crates per hour).

The controlled motor operation (controlled acceleration and braking) meant no mechanical brake was needed, so there were fewer wearing parts, and also less noise was generated inside the machine. The change also resulted in shorter machine downtimes, providing users with cost savings on servicing.

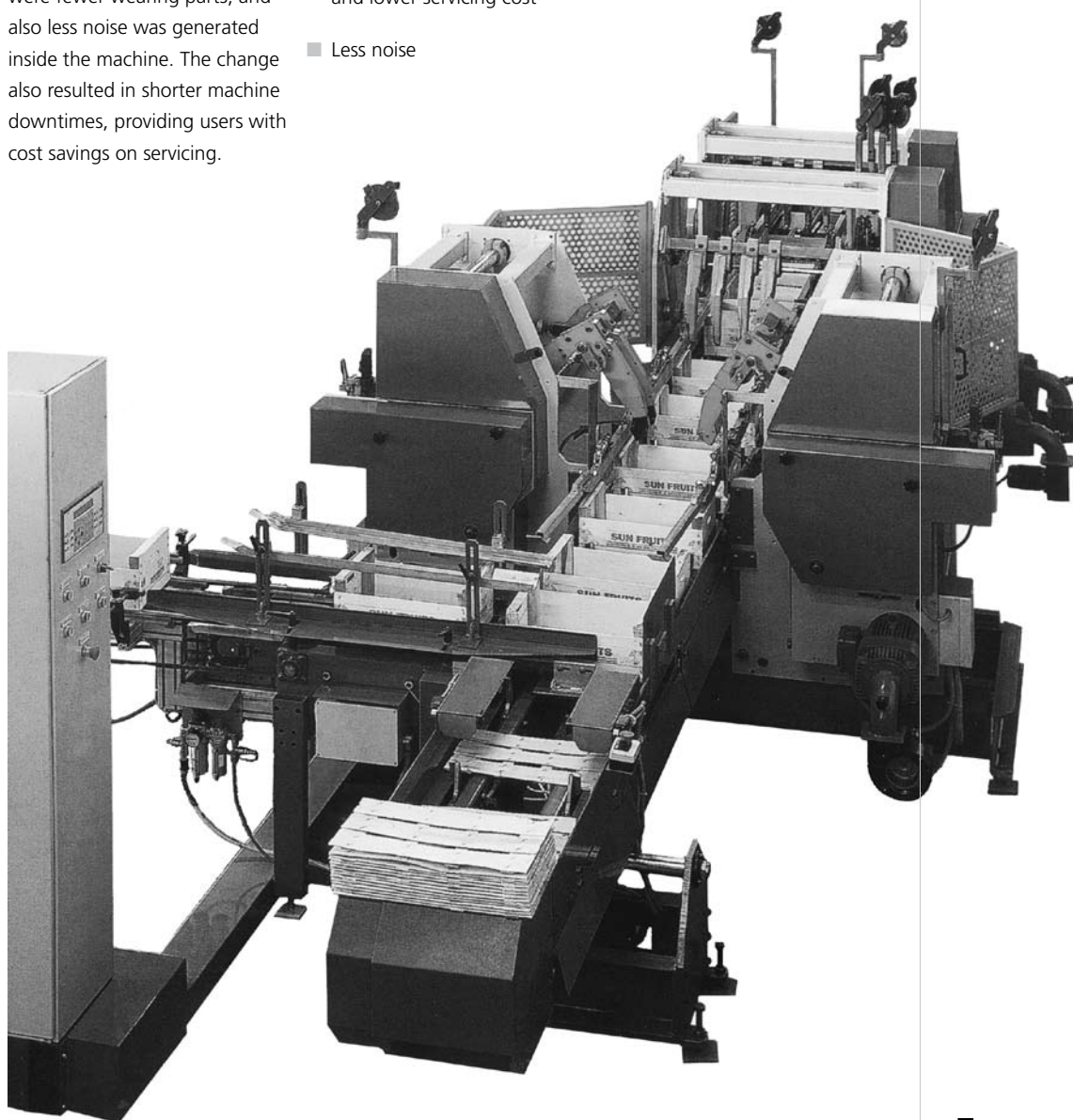
Advantages of using the CDB3000 positioning controller:

- Production increased by 25 % (around 2,500 crates per hour)
- Extended service life of the mechanism
- Higher reproducible accuracy of the attachment
- Shorter maintenance times and lower servicing cost
- Less noise

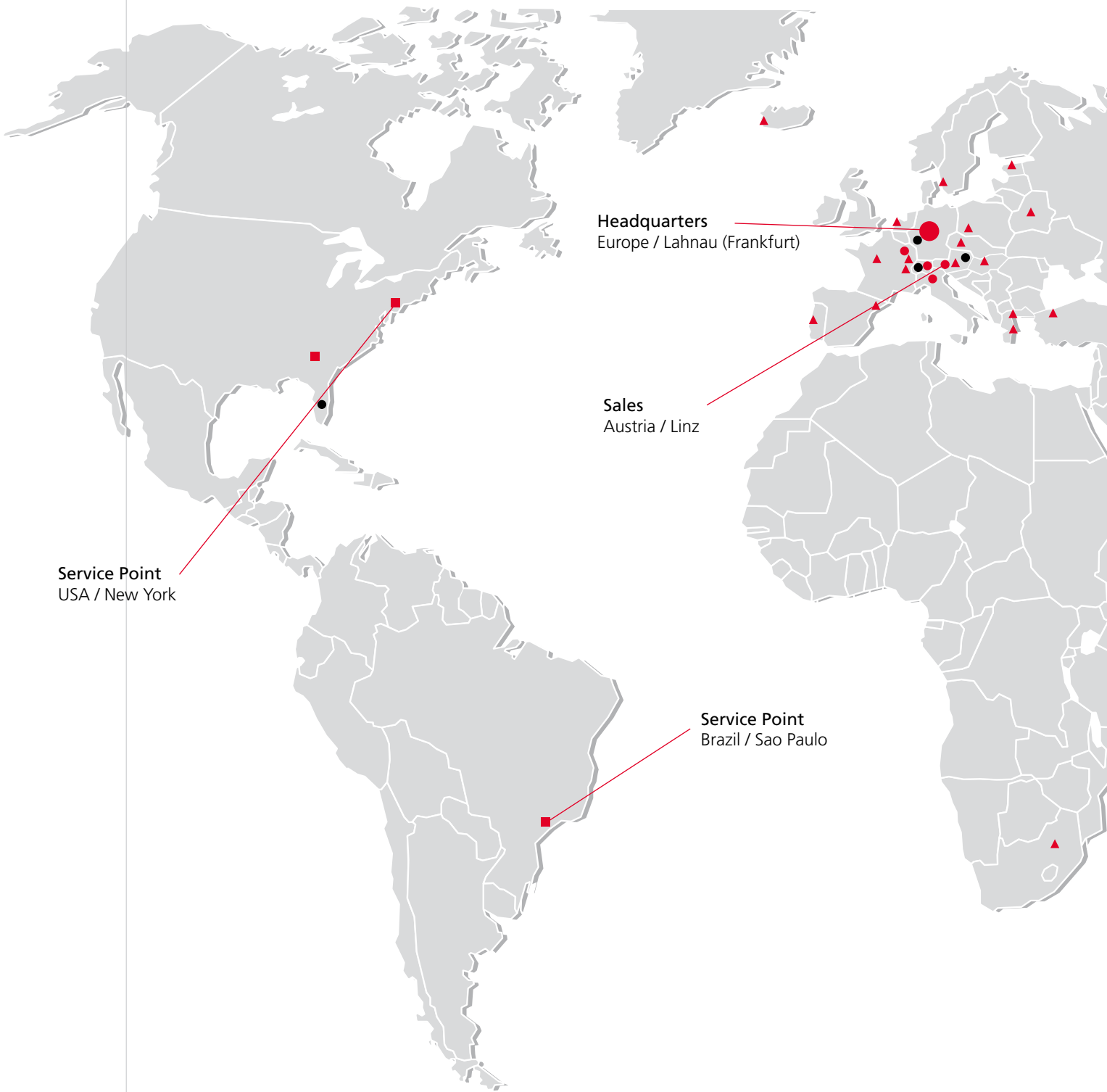
The advantages of such a complete solution featuring a controlled drive system outweigh the somewhat higher cost of the system (around 10 % more), so overall a decisive cost benefit is achieved.

*Thomas Klein  
Lust Antriebstechnik GmbH*

*With the kind assistance of  
KYMA GmbH, Greece  
[www.kyma.gr](http://www.kyma.gr)*



# At the heart of Europe – close to our customers worldwide





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- ▲ Agencies

## Chaos Pendulum enjoys great popularity



[ When company founder Karl-Heinz Lust met Professor Beutelspacher, the originator, founder and director of the unique Museum of Living Mathematics, the 'Mathematikum' in Gießen, in early February, he was surprised by the lively interest shown by visitors in the new 'Chaos Pendulum' exhibit. ]

Three schoolgirls, who had set the pendulum in motion and then excitedly watched its unexpected continuing movement, lined up for a photo to mark the occasion. To mark his 60th birthday, Karl-Heinz Lust had taken up Professor Beutelspacher's idea and decided to sponsor the Chaos Pendulum installation. As its sponsor, he is especially pleased at the great attention and enthusiasm the pendulum is evoking. And Professor Beutelspacher is happy too of course, seeing such an attractive new addition to his 'Mathematikum'.

For more information visit: [www.mathematikum.de](http://www.mathematikum.de)

## Joachim Achenbach voted onto ZVEI regional board

[ At its first meeting, the newly elected board of the ZVEI (German Electrical and Electronic Manufacturers' Association) regional association for the state of Hesse voted board member Joachim Achenbach from Sensitec GmbH as its Chairman. The former Chairman, Thomas Westphal, had not stood for re-election. ]

Joachim Achenbach has been working in management functions at Lust Antriebstechnik GmbH since 1985, and since 2003 has been managing director of magneto-resistive sensors manufacturer Sensitec GmbH.

A major concern of the future will be the question of training. On that issue, the regional association has been successful in preventing the closure of trade academies in some of the less economically strong areas of the state of Hesse. The Hesse regional association of the ZVEI is intensively supporting the efforts of the Confederation of Hessian Industrial Associations to improve and develop Hesse as an industrial base. The new Chairman intends to maintain the existing focus of the regional association's work, and to strengthen dialogue with member companies in Hesse, with the state government, and with the other regional associations.



[ Joachim Achenbach in conversation with Dr. Alois Rhiel, Minister of Economics, Transport and Regional Development of the State of Hesse ]

## INNOMAG e.V. – An exemplary initiative begins to attract attention

[ Following its official establishment on February 12, 2007 in Mainz, Germany, the 'Innovation Platform for Magnetic Microsystems' (INNOMAG) has now formally launched its activities. ]



The object of this PPP (Public-Private Partnership) initiative, involving leading

corporations such as Festo, Merck and Biotest,

is to promote and utilize applications in magnetic micro- and nano-technologies. To that end, a long-term research roadmap has also been defined and implemented in close collaboration with various research bodies, in order to translate Germany's current scientific lead in these new technologies into actual products and so generate value for the businesses concerned. The Sensitec corporation, from its production base in Mainz, is able to deploy its leading-edge manufacturing technologies and services to produce the sensor or actuator elements which are key components of these systems.

The necessity and benefit of this commitment is something which has been acknowledged at the highest political levels, and consequently this initiative has also been established as a model within the framework of Germany's high-tech strategy. Germany's Federal Minister of Education and Research, Dr. Annette Schavan, and representatives of the Rhineland-Pfalz regional government,



[ From left: Burkhard Stritzke, Karl-Heinz Lust and Dr. Heiner Flocke ]

headed by Economy Minister Hering, will be presenting the initiative as part of the Microtechnology keynote focus at this year's Hanover Trade Fair.

The INNOMAG general assembly voted Mr. Karl-Heinz Lust as Chairman of the organization, with Dr. Heiner Flocke (iC-Haus) as his deputy and Mr. Burkhard Stritzke (Lenord+Bauer) as a further board member.

Visitors to the Hanover Trade Fair can find out more about the organization's aims on stand H55 in hall 15 or [www.innomag.org](http://www.innomag.org).

Jürgen Rühl  
Lust Antriebstechnik GmbH

## LUST at fairs

Fair	Date/Location	Exhibitor
<p>Hannover Messe World Fair for Technology, Innovation and Automation <a href="http://www.hannovermesse.de">www.hannovermesse.de</a></p>	<p>16th to 20th April 2007 hall 15, stand E08 hall 15, stand E06 Hanover, Germany</p>	<p>Lust Antriebstechnik GmbH Levitec GmbH</p>
<p>EWEC 2007 European Wind Energy Conference &amp; Exhibition <a href="http://www.ewec2007.info">www.ewec2007.info</a></p>	<p>7th to 10th May 2007 stand C012 Milan, Italy</p>	<p>Lust DriveTronics GmbH</p>
<p>SENSOR + TEST 2007 <a href="http://www.sensor-test.com/">www.sensor-test.com/</a></p>	<p>22nd to 24th May 2007 Nuernberg, Germany</p>	<p>Sensitec GmbH</p>
<p>WINDPOWER 2007 International wind energy conference &amp; exhibition <a href="http://www.eshow2000.com/awea/">www.eshow2000.com/awea/</a></p>	<p>3rd to 6th June 2007 booth 2020 Los Angeles, USA</p>	<p>Lust DriveTronics GmbH</p>
<p>go. automation technology The technology fair for automation and electronics <a href="http://www.go-automation.ch">www.go-automation.ch</a></p>	<p>4th to 7th September 2007 Bale, Switzerland</p>	<p>Lust-Tec GmbH</p>



## □ Drive concepts for the future

### Safety and precision - requirements for state-of-the-art servo drive series

[ When developing new machine tools and production machinery, cost and time saving starts well before the production process itself, right from the development phase of the machine. Increased complexity of processes is competing with constant or even shortening lifecycles and the associated demand for ever shorter development lead times. ]

Consequently, simple, consistent integration of the drive into the machine concept is key. As well as greater expectations in terms of speed, precision and flexibility, technical issues around **personal safety and safety of machines will become more important in future**. Maximum process safety is demanded, in order to attain the highest possible availability while retaining the existing levels of required cost-effectiveness. The decisive factor in this is the interaction of the safety-related components in the safety chain. Based on the **safety functionality** built into the drive controller, such as **Safe Standstill, Safely Limited Speed or Safe Shutdown**, the drive controller itself becomes

an integral part of the safety concept, and so is embedded even more deeply in the overall drive system.

Consequently, the modularity and flexibility of a state-of-the-art, future-proof servo drive series is key to its simple yet optimum integration into the machine process.

The latest high-performance drive series from LUST, the 'ServoOne', aims to meet just those high demands of machine tool and production machinery manufacturers with maximum dynamism and synchronism based on the integration of innovative control algorithms and the interfacing of various state-of-the-art real-time communications interfaces, as

well as by integrating extensive safety functionality.

Advanced control algorithms and flexible encoder interfaces permit operation of a broad range of motor types, from synchronous servomotors through asynchronous motors to linear and torque motors.

In order to be able to integrate the high-level control performance of the ServoOne in different automation solutions, a variety of communications interfaces are available as option cards. Alongside **CANopen** and **PROFIBUS**, fast, synchronous multi-axis motion is executed via the **Sercos II** or **EtherCAT** motion control buses. In future **Sercos III** and **Profinet** will also be available for the ServoOne.

For custom applications covering a range of motion tasks, the ServoOne features a standardized IEC61131 programming system and a whole array of motion control libraries. Allied to its extensive safety functionality, the ServoOne is well equipped for the future.

*Ingo Nürnberger  
Lust Antriebstechnik GmbH*

[ ]

## Karl-Heinz Lust, Managing Director of Lust Antriebstechnik GmbH and of Sensitec GmbH

[ The VDI/VDE-IT German electrical and electronics engineering association website every month features a personality closely linked to microsystems engineering on its homepage. In February the 'Face of the Month' was Karl-Heinz Lust. ]

"My first intensive contact with microsystems engineering was in 1987, when we established an Innovation Working Group within the Wetzlar Chamber of Commerce and discovered microsystems as a key interface technology."



For my own part, I saw the opportunity to utilize microsystems engineering for the benefit of Lust Antriebstechnik GmbH, as a key technology driving the innovation and success of our products. That is why I committed so strongly to the field of microsystems engineering, and was one of the founders of the IMO institute in Wetzlar and CIS in Erfurt. Later on, I was a co-founder of the Microsystems Engineering section within the VDMA (German Engineering Federation) and a member of the 'MatchX' Industrial Platform for Modular Microsystems. I was also a co-founder of Group V - Microsystems Engineering within the ZVEI (German Electrical and Electronic Manufacturers' Association). Based on our consistently applied innovation strategy aimed at delivering new mechatronics system solutions and achieving the fullest utilization of microsystems engineering, we are today among the leading vendors of high-grade drive solutions and magnetic bearings. Our activities in the field of microsystems engineering have resulted in the establishment of Sensitec GmbH as an entirely new division within our Group. Today Sensitec is one of the leading vendors of magnetic field sensors based on the MR (magnetic resistance) effect, and has contributed its know-how in those sensors to a number of major innovations in the industrial and automotive sectors. The most distant applications of Sensitec sensors are onboard the Mars exploration robots Spirit and Opportunity.

[ ]

## 4-colour printing unit with c-line DRIVES

[ We are all familiar with them, yet they remain largely unnoticed: the paper sacks in which we buy building materials such as gypsum or cement. In order to pack the products appropriately for buyers, the sacks are imprinted with up to four colours by the flexo printing method. A printing machine required for this was successfully fitted out with LUST CDD and CDE series drives. ]

In each inking unit in the printing machine a colour is taken up by a roller, applied to the printing plate and from there printed onto the continuous paper roll. Downstream of the paper roll is the third roller required for the counter-pressure. The three axes on each of the four inking units all run at the same circumferential speed, so that the paper can be imprinted without wrinkling or creasing.

The printing machine is completed by side and longitudinal registers with which the colours can be placed 'over each other' as appropriate; positioning drives by which the axes are moved against each other; a cutter unit; a belt tension controller; and the unwinder.

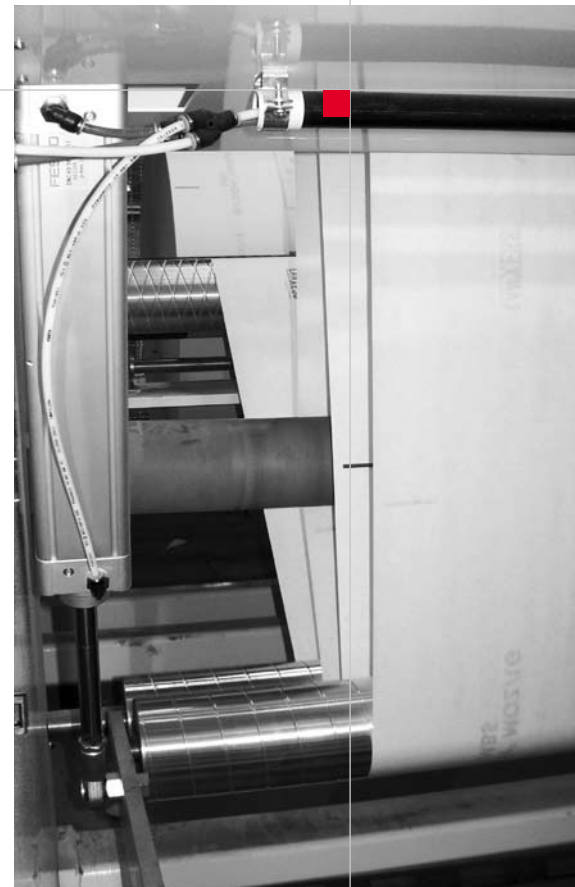
The machine design enables printing onto paper at a speed of 500 m/min (corresponding to 30 km/h).

In the printing machine there are a total of 24 LUST drives, which are interconnected over the PROFIBUS field bus system. Of them, 15 are also interlinked by an electronic gear unit.

In this multi-layered application, involving the highest demands in terms of precision and reliability, the state-of-the-art drive controllers of the c-line DRIVES series are once again able to demonstrate their high performance capability.

*Dr. Jürgen Kiel  
Lust Antriebstechnik GmbH, Unna*

*With the kind assistance of TMB GmbH, Osnabrück  
[www.tmb-online.de](http://www.tmb-online.de)*



[ *Dancer control for uniform paper tension* ]

[ ]

## Winning with LUST



### Book Recommendations

#### The Shadow of the Wind

Carlos Ruiz Zafón

In the Old City of Barcelona there is (or was) a cemetery of forgotten books. Or at least, that is the claim of author Carlos Ruiz Zafón, who in his magnificent first work takes us by the hand and leads us into a mysterious, hidden world of storytelling. At the same time, the reader is immersed in the gloomy ambience of Barcelona, from its morbid blossoming at the turn of the 20th century to the low point of the Franco era.

Suhrkamp Verlag ISBN 3518458000

#### LEBE mit Herz und Seele [Living with Heart and Soul - Seven Takes on the Art of Life]

Dietrich Grönemeyer

Life is precious. Achieving a new perception of this miracle is at the core of any understanding of life as art. The author – a physician – sets out seven attitudes which will guide us to our own centre; which will give us strength and energy – for the body and soul. Live your life intensively and in concert with others – filled with joie de vivre. A book about the preciousness of life, and a passionate contribution to the debate on values.

Herder Verlag ISBN 978-3-451-29290-3

#### SPS Programmierung nach IEC 61131-3 [PLC Programming to IEC 61131-3] with CD-ROM

Heinrich Lepers

The object of this book is to persuade PLC programmers and new users how effective programming in the higher languages of the IEC standard is. Alongside exercises, brief specimen projects, configured for CoDeSys and for STEP 7, are also set out.

Franzis Verlag ISBN 3-7723-5801-2

#### c-line DRIVES Engineering Guide

The easy way to find a drive solution. With formula bank. The Guide is aimed at users looking for background information on configuring drive systems. Date 09/2006

ID no. 0927.05B.1-00, available from

info@lust-tec.de

[ The dry-running SIHdry screw pump from Sterling SIHI has been a tried and proven solution for a wide range of industrial applications over many years. The drive principle based on separately driven, electrically synchronized screw bodies has delivered a number of key ecological and commercial benefits. ]

In the latest generation of machines, the principle familiar from smaller-size SIHdry pumps with driving powers up to 10 kW of drive electronics integrated into the pump base has now also been implemented for driving powers up to 30 kW. The space-saving design enables it to be deployed in a range of new applications.

The challenge of this innovation was posed by the high power density within extremely tight confines.

The focus was on ease of installation and high levels of process integration of the pump in the end-user customer's application. This was made possible by two standard servo-controllers from the CDE3000 series in 'Cold Plate' design. Their compactness and functionality made them the optimum solution to the requirements posed. LUST also supplied two ancillary modules, completing the package with blanks and cable sets.

LUST supplies a wired, fully equipped push-in cooling plate, fitted directly in the Sterling SIHI system assembly process. This system component from LUST enables Sterling SIHI to significantly shorten its supply chain, and the previously required external switch cabinet can be eliminated. This makes the system very easy to install and to integrate into customers' processes.

Based on its sparing use of raw materials and operating energy and its quiet running without the use of acoustic encapsulation, the SIHdry won the 2006 British Pump Manufacturers Association's Award in the Environmental / Energy Saving category. This was a mark of recognition of the ecological benefits and commercial performance of the system.

Jörg Möglich-Hellhund  
Lust Antriebstechnik GmbH

With the kind assistance of Sterling SIHI GmbH, Itzehoe  
www.sterlingfluidsystems.de



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