



▶ **NEW: Fully-automated positioning drives PowerDRIVE-System**

▶ **PowerDRIVE-System:**

- ▶ Complete mechatronic system solution
- ▶ Compact positioning drives with spur gears
- ▶ Stainless steel housing 1.4301
- ▶ High protection class IP 67
- ▶ Standard fieldbus profiles
- ▶ Direct wiring via hybrid cables
- ▶ Can be integrated into existing systems

No drive to turn the wheels?



► PowerDRIVE-System – the innovative system solution for fully automated format adjustment

Complex format adjustment is outdated. The production plants of the future are entirely focused on progress.

The requirements on modern production facilities become more and more demanding. An increasingly high level of flexibility and faster services are required - even when changing formats. Shorter machine downtimes, reduced set-up effort and related costs, more transparency in the entire production process - these are the demands of machine and plant operating companies to reliably manage the growing competitive conditions.

Clearly a job for Lenord + Bauer. Because for more than 45 years we have been concentrating on modern and efficient automation of motion. We develop, produce and customise, innovative and highly integrated automation solutions and products for a broad range of industries and applications - from small batch sizes to thousands of pieces per year.

The focus of each development and each new solution is on customer satisfaction.

This also applies to our latest innovation in the field of format adjustment: PowerDRIVE-System. An intelligent system solution that makes work much easier. For the plant as well as the operating company. With PowerDRIVE-System, time and cost consuming manual conversions to other formats are finally a thing of the past. Everything becomes easier, faster and more flexible.

The following pages will provide you with detailed information on how advanced the PowerDRIVE-System is, its reliable and energy-efficient operation, and how easily it can be integrated into various machine and plant concepts. Have fun reading and allow yourself to be surprised.

► **Fully automated positioning drives**
PowerDRIVE-System



► Format adjustment with an innovative system

Easy integration, quick change, less error sources - but the innovative positioning system has much more to offer.

A change in batch size and frequent product changes require a quick conversion of production plants and machines. If this task is still performed by handwheel, valuable time may be lost. This is particularly the case when it concerns processing of smaller batch sizes. Furthermore, manual conversion does not ensure absolute repeat accuracy.

To save time, money and trouble, you should rely on innovative solutions: Fully-automated feed axes that allow efficient production of even small batch sizes. Like the new PowerDRIVE-System from Lenord + Bauer.

The clever package

The innovative positioning system offers a complete system solution for efficient and flexible integration of positioning drives in modern production plants. It makes the integration and commissioning of automated feed axes extremely easy and greatly reduces cabling work. The PowerDRIVE-System consists of three basic compo-

nents. First: The compact, fully-automated positioning drives - PowerDRIVE. Second: The decentralised electrical PowerDRIVE-Box, which controls the complete PowerManagement of the positioning drives and greatly simplifies the connection work. And third: The drag chain-suitable hybrid cable PowerDRIVE-Connect.

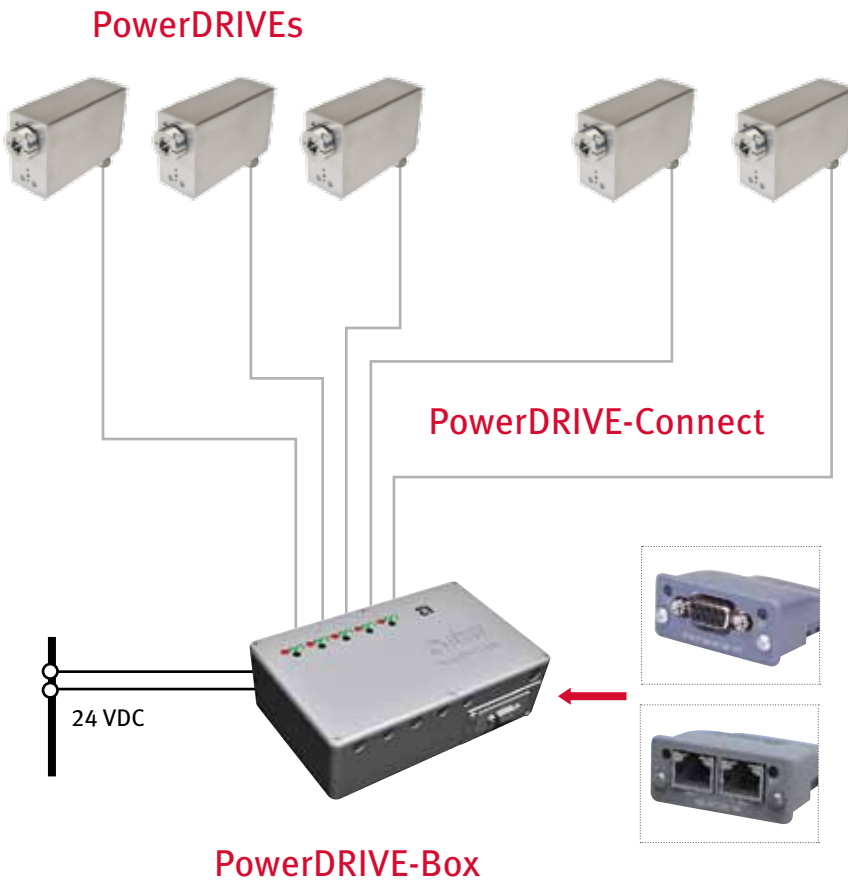
Efficient to the core

In addition to the numerous advantages of the individual components, which will be addressed in more detail on the following pages as well, the PowerDRIVE-System also offers you distinct advantages concerning support or logistics chain. Thanks to simple fieldbus modules, the basic system, which is always the same and consists of PowerDRIVE and PowerDRIVE-Box, is suitable for all target markets or controls.

► The entire system at a glance

| PowerDRIVE-System | |
|--------------------|--|
| PowerDRIVE | 2 Nm at 230 min ⁻¹ / 5 Nm at 100 min ⁻¹ / 10 Nm at 40 min ⁻¹ Supply voltage 24 V DC / hybrid cable / plug outlet / joystick for commissioning manual emergency adjustment / optional DC brake ... |
| PowerDRIVE-Connect | Drag-chain suitable hybrid cable Auto-configuration of PowerDRIVES Auto-parameterization of PowerDRIVES |
| PowerDRIVE-Box | Connection of up to 5 PowerDRIVES Integrated PowerManagement and cable protection Pluggable fieldbus modules |

PowerDRIVE-System



Wim Kruijkemeijer
International Sales Manager
Racupack B.V.

„With the positioning drives from Lenord + Bauer we can offer our customers a permanent and cost-efficient cooperation!“

Thanks to our high-quality machines we help make production processes less expensive and easier to maintain. The compact design of the positioning drives from Lenord + Bauer allows simple replacement of handwheels and automation of axes. The high repeat accuracy helps to significantly reduce the error rate compared to handwheel adjustments. Easy commissioning and minimum wiring work support the flexibility of our plants.



Racupack develops customer-specific packaging machines. The focus is on the customer who is guided through every stage, from engineering to commissioning. The company offers optimal adaptation to the individual application.

▶ PowerDRIVES – progress in compact form

The easy-to-handle positioning drives can be completely integrated in a wide range of machine and plant concepts.

Each PowerDRIVE positioning drive forms a compact adjustment unit, consisting of a DC brushless motor, a novel magnetic multiturn absolute rotary encoder, a 32 bit microcontroller, a compact power amplifier, as well as an efficient spur gear. With its high protection class (IP 67), the robust stainless steel housing with the dimensions 60 mm x 100 mm x 160 mm offers a wide range of applications in various industrial areas.

Small dimensions, large capacity

The mechanical integration into smallest spaces poses no problem: Just one design offers the nominal torque options 2 Nm, 5 Nm or 10 Nm at the output shaft. You need particularly short mounting lengths? This is also possible since in addition to the longitudinal design with 160 mm length, other PowerDRIVE versions with radial cable outlet are available. Thus, by using a shorter motor and eliminating the brake, a mounting length of only 125 mm can be achieved. However, in this case less space requirement does not mean less reliability. A robust multiturn absolute rotary encoder on magnetic basis eliminates reference search routines following an emergency stop or a power failure. The batteryless PowerDRIVES detect their position directly after power is on and are immediately ready for use.

The choice is yours

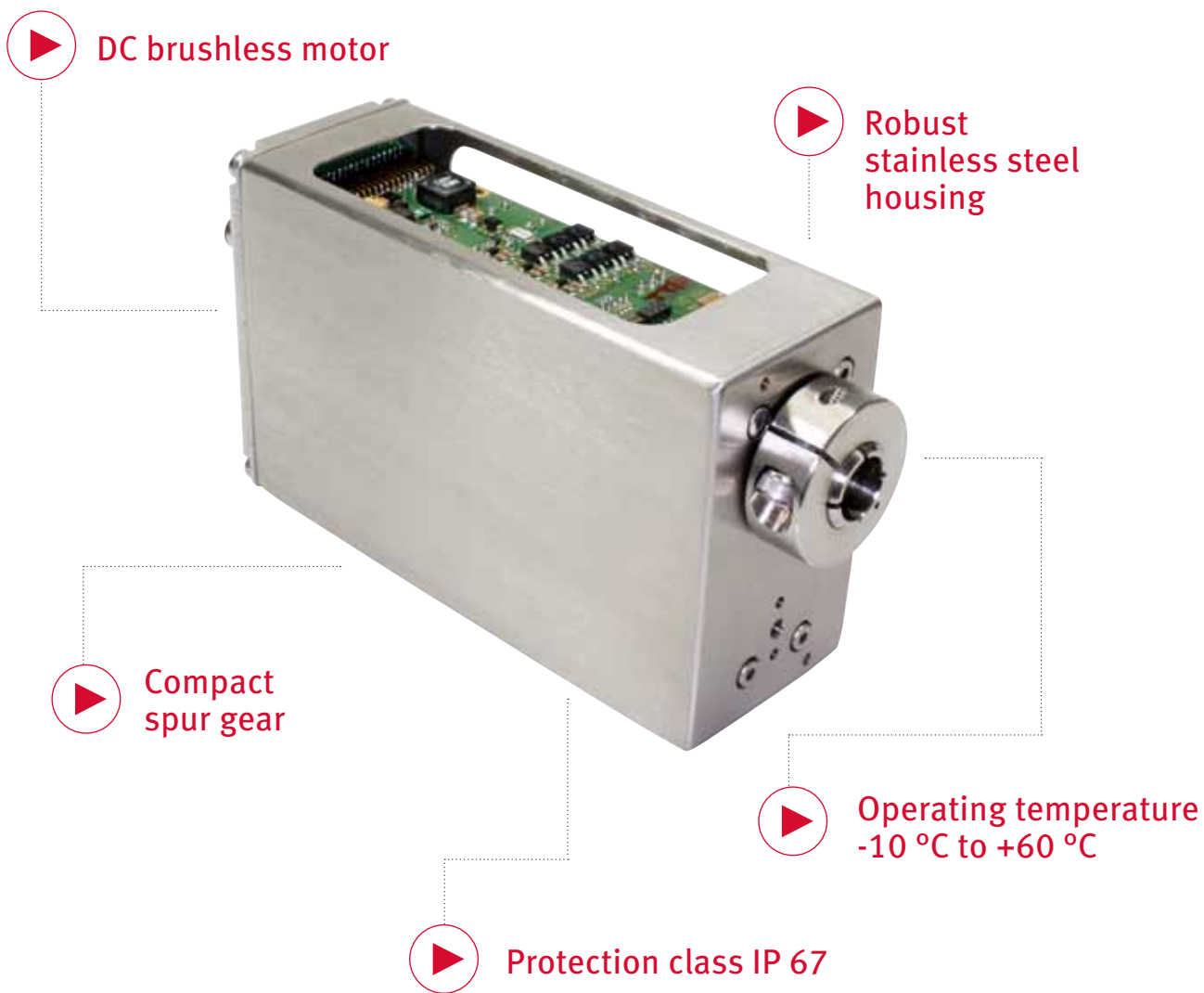
Depending on application and mounting position, mechanical self-locking of the feed axes is not always ensured. Only a holding brake guarantees secure fit even in case of shock and vibration loads - especially for vertical feed axes. Alternatively, the various mechanical performance levels are therefore also available in versions with holding brake. Cable or plug outlet are also arbitrary.

All devices offer the optional equipment of a mechanical manual emergency adjustment. Furthermore, the rotary selection switches for device ID and baud rate setting, as well as a USB service connector, are accessible on the back of the device. Right next to it is also a micro-joystick that allows you to operate the installed positioning drives without prior PLC programming.

Even the assembly is conveniently easy: Different output shafts and flange patterns are part of the standard equipment of PowerDRIVES.

▶ Technical data

| | PowerDRIVE GEL 6110 |
|--------------------------------------|---|
| Logic supply | 24 V DC / 0.4 A |
| Motor supply | 24 V DC, typ. 4 A, max. 10 A |
| Logic protection | 0.5 A, polyswitch |
| Motor protection | Integrated in PowerDRIVE-Box |
| Interfaces | CANopen DS402, PROFIBUS-DP, more upon request |
| Nominal torque | 2 Nm at 230 min ⁻¹ / 5 Nm at 100 min ⁻¹ / 10 Nm at 40 min ⁻¹ |
| Assembly / shaft | 15 to 10 mm hollow shaft, form-fit via feather key Size 10 square / solid shaft, various mounting brackets |
| Housing dimension W x H x L in mm | 60 x 100 x 160 (125) |
| Housing | Stainless steel 1.4301 |
| Protection class | IP 67 |
| Operating temperature | - 10 °C to + 60 °C |
| Condensation | Condensation permitted |
| Options | Holding brake, hybrid cable, plug outlet, manual emergency adjustment ... |

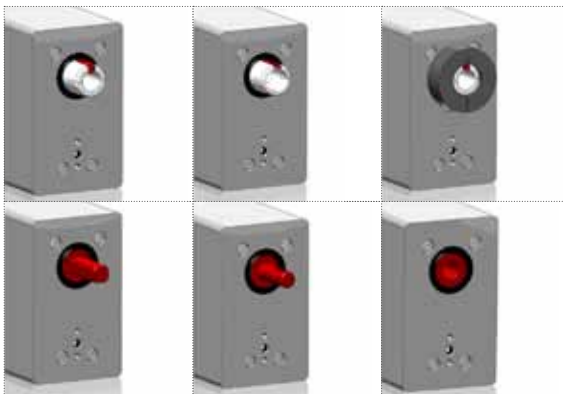
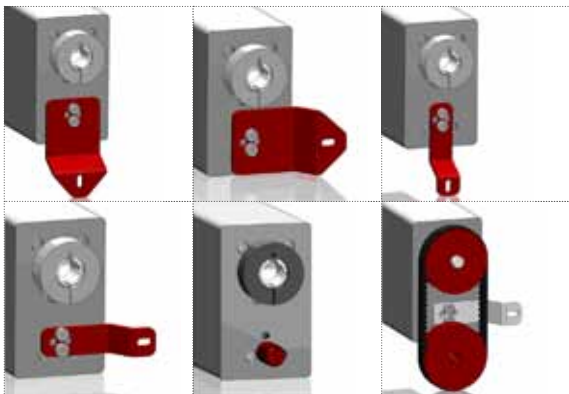


Mounting brackets / torque support

- ▶ flexible mounting brackets/pins
- ▶ individual design
- ▶ any desired mounting position

Output shafts

- ▶ form-fitted hollow shafts
- ▶ 15 to 10 mm hollow shaft
- ▶ Size 10 square / solid shaft



▶ PowerDRIVE-Box – half the work, twice the capacity

The innovative connection concept of the PowerDRIVE-Box greatly simplifies connection work for the customer.

Instead of the conventional two separate cables to field bus communication and a third cable to power supply of the positioning drives, the connection work is reduced to a single drag chain-suitable hybrid cable. This saves space and wiring work. The cable protection is integrated in the PowerDRIVE-Box and the maximum power consumption can be programmed via PowerManagement.

Simply strong communication

The PowerDRIVE-Box supports different control concepts as usually required for the European, Asian or North American market via pluggable fieldbus modules. Basically, the PowerDRIVE-Box can be configured by the customer with various fieldbus modules for PROFIBUS DP and CANopen, as well as EtherNet-based industry standards such as PROFINET, EtherNet/IP or EtherCAT, thus ensuring that the required fieldbus profile is supported at all times.

The PowerDRIVE-Box comes in a compact housing for mounting on top hat rails. The hybrid cables of the positioning drives are fixed directly to the easily accessible spring-cage terminals to ensure a simple and economical connection work. It is recommended to use a 24 V DC / 40 A voltage-stabilised power supply that is

preferably to be mounted directly beside the PowerDRIVE-Box on the top hat rail. The power supply for motor and logic parts of the positioning drives is separate.

Safe shut-down

To be in compliance with new machinery directives or to ensure safe shut-down of active components, the customer can apply the engine power also via certified safety relays. In this case the drive is safely shut down while maintaining permanent condition monitoring.

Thus, as decentralised component, the intelligent PowerDRIVE-Box carries out important functions to facilitate commissioning and efficient integration of PowerDRIVES into the control concept of complex production plants. The integrated electronic cable protection reduces commissioning and wiring work. In case of error, the positioning drive can optionally be restarted via the master control system or directly on the PowerDRIVE-Box.



Technical data

| | PowerDRIVE-Box GEL 6500 |
|---------------------------------------|---|
| Logic supply | 24 V DC / 1 A |
| Motor supply | 24 V DC max .40 A |
| Logic protection | integrated in PowerDRIVE |
| Protection hybrid cables | electronic cable protection, integrated in PowerDRIVE-Box |
| Active motor protection | integrated in PowerDRIVE |
| Interfaces | CANopen, DeviceNet, PROFIBUS DP, PROFINET, EtherNet/IP, ... |
| Features | integrated PowerManagement, auto-configuration of PowerDRIVES, auto-parameterisation of PowerDRIVES |
| Assembly | Top hat rail |
| Housing dimensions W x H x L in mm | 115 x 50 x 185 |
| Housing | Aluminium cast |
| Protection class | IP 20 |
| Operating temperature | 0 to +85 |
| Condensation | non-condensing |



Albert Danneberg
 Technical Manager
 Niverplast

„Lenord + Bauer offers a solution that we can rely on!“

The positioning drives from Lenord + Bauer allow our customers to carry out an automatic format change and thus reduce set-up times significantly. The maintenance-free positioning drives increase the flexibility of our machines. The various fieldbus interfaces made a fast integration of the positioning drives into our control system possible.



Niverplast develops innovative packaging solutions. The products of its customers are effectively protected by the use of foils, thus ensuring a safe transport. In cooperation with its customers, the company develops logistical processes as basis for the packaging solution.

▶ PowerDRIVE-Connect – for better connections

The drag-chain suitable hybrid cable reduces space requirement and increases transparency.

Up to five PowerDRIVEs can be connected to the PowerDRIVE-Box via the PowerDRIVE-Connect hybrid cable. This allows a more compact plant integration since the number of cables is reduced from 15 to 5 with the 5-port PowerDRIVE-Box.

Versatile use

The fields of application range from packaging machines, machines in the food industry, plastics processing and machine tools all the way to extensive production plants.

The hybrid cable is designed for flexible application in drag chains and reaches a permissible dynamic bending radius of ten times the cable diameter in a temperature range of -40 °C to $+80\text{ °C}$. It was possible to reduce the cable diameter to 9.5 mm without any screening compromises. The screened communication strand includes a ground wire and the complete cable has yet one more screen under the PUR jacket. Besides the spring-cage

terminals, the PowerDRIVE-Box is equipped with other terminal strips that, in addition to the screen connection, also take care of the strain relief of the hybrid cable.

Intelligent cabling technology

PowerDRIVE-Connect enables testing of individual system parameters, immediately after connection as well as during automatic configuration of the positioning drives via the PowerDRIVE-Box. Hence, intelligent cabling technology is not only extremely efficient and resource-saving, but incidentally also ensures more transparency during format adjustment.



PowerDRIVE-Connect

- ▶ Hybrid cable
- ▶ Drag chain-suitable
- ▶ Space saving
- ▶ Versatile use

▶ Technical data

| | PowerDRIVE-Connect hybrid cable |
|-------------------|---|
| Communication | 2 x 0.25 mm ² , 1x 0.14 mm ² , screened |
| Logic supply | 2 x 0.5 mm ² , operating voltage 24 V DC |
| Motor supply | 2 x 1.5 mm ² , operating voltage 24 V DC |
| Diameter (d) | 9.5 mm |
| Jacket material | PUR |
| Bending radius | Permanently flexible 10 x d |
| Temperature range | -40 °C to $+80\text{ °C}$, dynamical |

▶ Application support and training

We support our customers right from the time an automation solution is planned and accompany the entire process, with focus on the individual customer.

For more than 45 years we have turned our attention to customised automation solutions. We are happy to pass this know-how on to our customers - already at the time of planning and project engineering of machines, plants and systems. Together with our customers we develop hardware and software concepts and specify individual products and sensors.

Finding the best solution

Our sector and product management is in constant dialogue with our customers. Requirements are addressed directly on site and problems are analysed together with the customer. Depending on customer's requirements, we offer our support also during project engineering and commissioning. Our software specialists develop applications, software modules and couple devices from other manufacturers via various fieldbus systems. We focus on the function of the machines or system as a whole,

not only our own product. Finding the best solution together - this is what successful cooperation means to us.

Always at your side

If you wish, we accompany you during project engineering or even after successful commissioning with intensive instruction and training courses. Just let us know how we can help you best.

We look forward to your individual automation task and a successful cooperation.

▶ Service and contact

▶ Call centre +49 208 9963 - 0

You are looking for a competent contact person or the employee in charge of your matter? Our call centre will be happy to assist you! info@lenord.de

▶ CustomerCentre +49 208 9963 - 216

You urgently need the products, or have questions on delivery conditions, repairs or status of a current order? Our CustomerCentre can advise you about business questions!

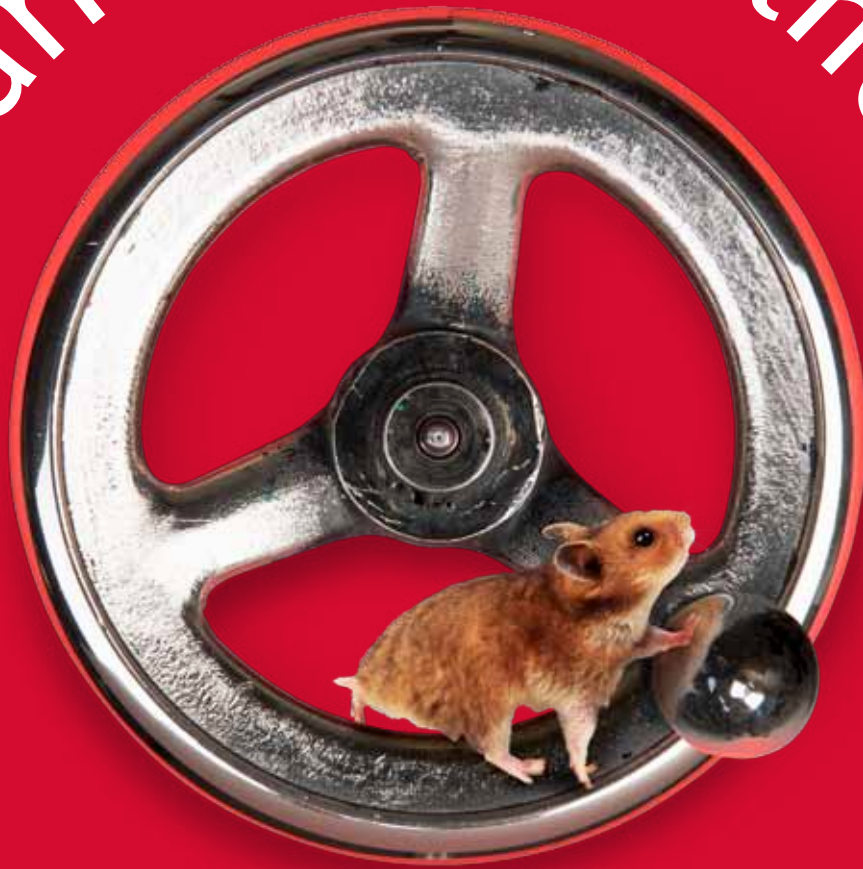
kundencenter@lenord.de

▶ Technical Support +49 208 9963 - 215

You have technical questions concerning our products or need help with commissioning? Our competent support staff in the office will be happy to offer you advise and practical help.

support@lenord.de

No drive to turn the wheels?



The new PowerDRIVE
positioning drive

 **LENORD
+BAUER**
... automates motion.

Lenord, Bauer & Co. GmbH
Dohlenstraße 32
46145 Oberhausen, Germany
Phone: +49 (0)208 9963-0
Fax: +49 (0)208 676292
info@lenord.de
www.lenord.de