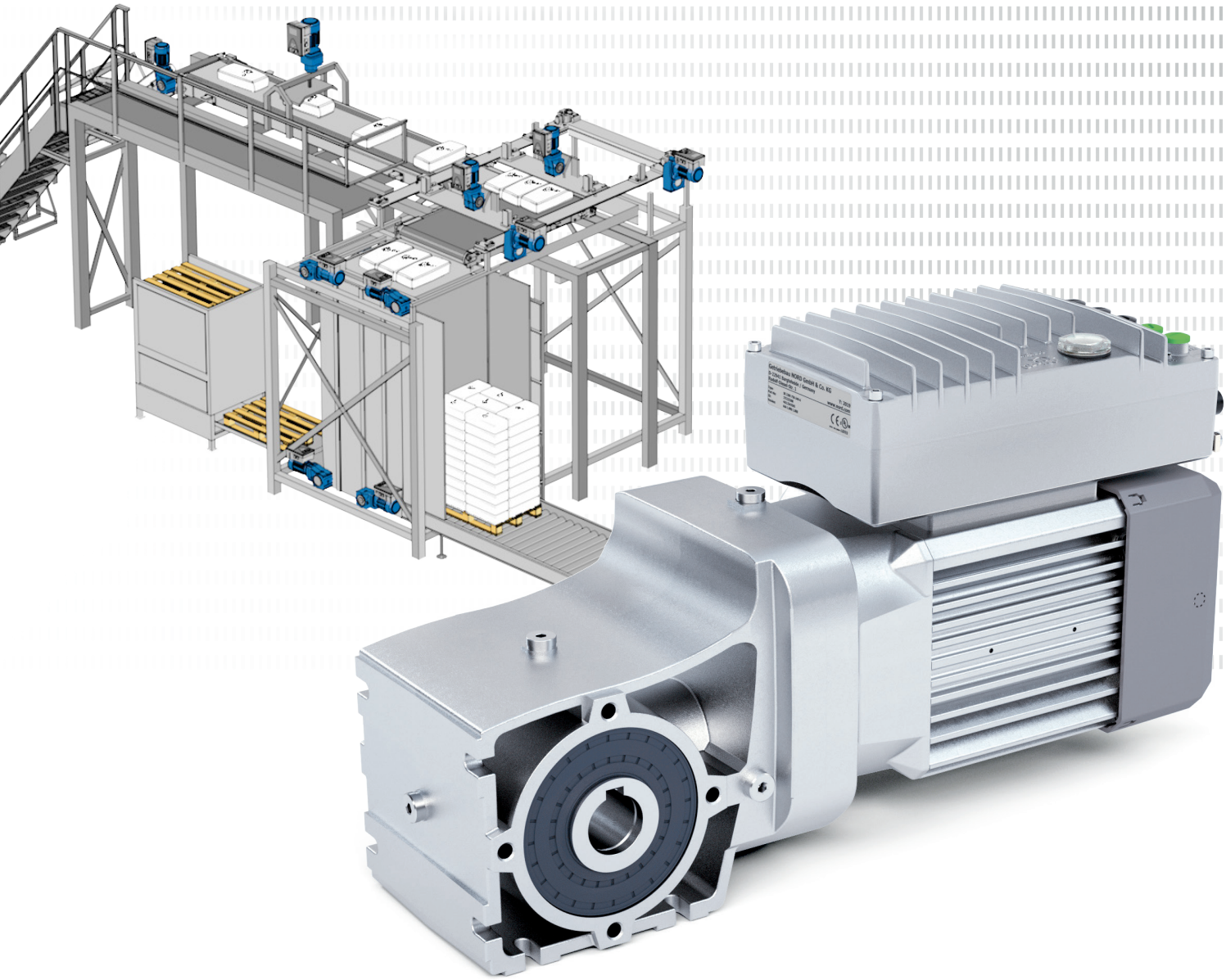
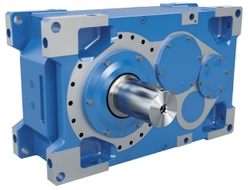


Drive solutions for packaging machinery

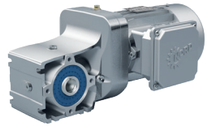
Complete drive systems from a single source

NORD®
DRIVESYSTEMS
Our Solution. Your Success.

NORD DRIVESYSTEMS Group



Industrial gear units



Geared motors

Frequency inverters and motor starters

- Headquarters and technology centre in Bargteheide, near Hamburg
- Innovative drive solutions for more than 100 branches of industry
- 7 production locations with cutting-edge technology produce gear units, motors and drive electronics for complete drive systems from a single source
- NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries They provide local stocks, assembly centres, technical support and customer service
- With more than 4,900 employees worldwide, we create customised solutions

Headquarters in Bargteheide

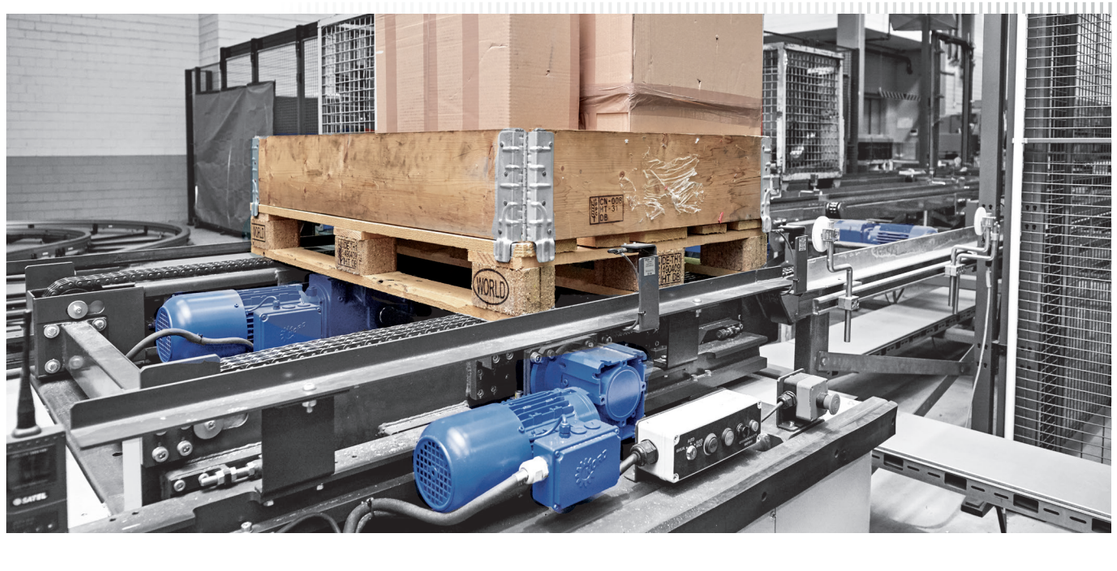
Gear unit production

Inverter production

Motor production

Production and assembly

Motor mounting



Drives for the packaging industry

Electric drives play an important role for packaging machines. They can be used to convey packaging material, to drive tools, and to form and seal packages.
These drives are essential to monitor and control the overall process.
They provide a cost-efficient, precise and reliable possibility to perform movements in the entire packaging process. Electrical drive systems are easy to install, maintenance-friendly, energy-efficient, and can be quickly adapted to the requirements in the packaging process.

Strong partner with industry knowledge

Manufacturers and operators of all types of packaging machines and transport systems need a strong partner with great expertise in drive technology and profound industry knowledge in the packaging industry. NORD DRIVESYSTEMS is this reliable partner.

Reliable partner

Long-term experience in the configuration of drives for special applications. The NORD technology's quality is designed to last. Global service network.

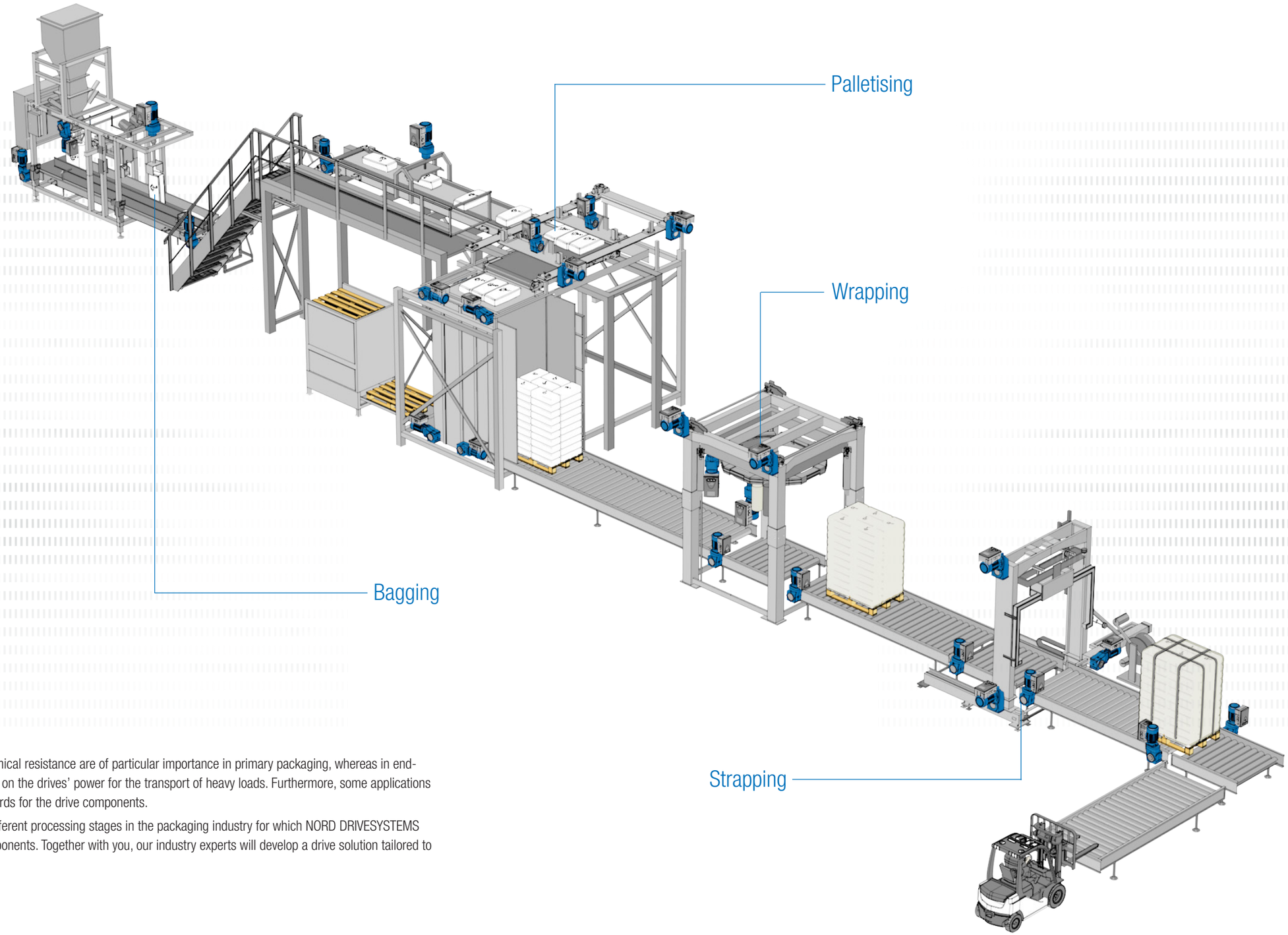
Efficient engineering

Industry knowledge for individual solution orientation. Decentralised, intelligent integration saves time during construction, procurement, installation & operation.

Connected

Drives are compatible with all common bus systems with central or decentralised solutions. Plug-and-play solutions for any application.

Drive solutions for packaging machinery



Positioning accuracy and chemical resistance are of particular importance in primary packaging, whereas in end-of-line packaging, the focus is on the drives' power for the transport of heavy loads. Furthermore, some applications require higher hygienic standards for the drive components.

Different criteria determine different processing stages in the packaging industry for which NORD DRIVESYSTEMS offers optimally adjusted components. Together with you, our industry experts will develop a drive solution tailored to your requirements.

Drive solutions for packaging machinery

From start to finish –
We move your packaging machinery.

Primary packaging

In primary packaging, food, pharmaceuticals and other hygiene-sensitive products are often packed. Drive systems in these applications must be easy to clean and resistant to chemical cleaning agents and potential contamination.

In primary packaging, we offer drive solutions for the following processes:

- Forming
- Dosing
- Filling
- Sealing

Secondary packaging

In secondary packaging machinery, electric drives have become more popular than pneumatic ones over the last years. By comparison, electrical drive systems are more efficient, precise and controllable, allowing for more efficient processes. Furthermore, electric drives have a longer service life and require less maintenance than pneumatic drive systems. For these applications, NORD DRIVESYSTEMS offers a wide portfolio of drive components: motors, gear units and drive electronics – always fully matched.

In secondary packaging, we offer drive solutions for the following processes:

- Carton erecting
- Filling
- Sealing
- Foiling
- Enveloping
- Shrinking

End-of-line packaging

In end-of-line packaging, heavy pallets, boxes and containers are transported. Heavy loads must be moved over long travel distances. This requires individual and powerful drive systems. NORD DRIVESYSTEMS offers drive components for all types of packaging, strapping and palletising machinery from a single source. NORD's asynchronous servo technology with higher inertia is particularly beneficial. Electric drives with higher inertia in the rotor ensure better (motion) control when moving heavy loads, especially for fast movements and dynamic load changes. Furthermore, they enable highest process stability, reduce vibrations and the risk of damaging the load or packaging machine.

In end-of-line packaging, we offer drive solutions for the following processes:

- Palletising
- Wrapping
- Strapping

Higher-level applications

Through all processing stages in the packaging industry, transport and provisioning processes play a decisive role. Depending on whether individual units or larger containers are transported, powerful and efficient drive systems are required that have been optimised for the respective application. With NORD DRIVESYSTEMS' wide portfolio, we always find suitable solutions that can be individually adjusted to the respective requirements.

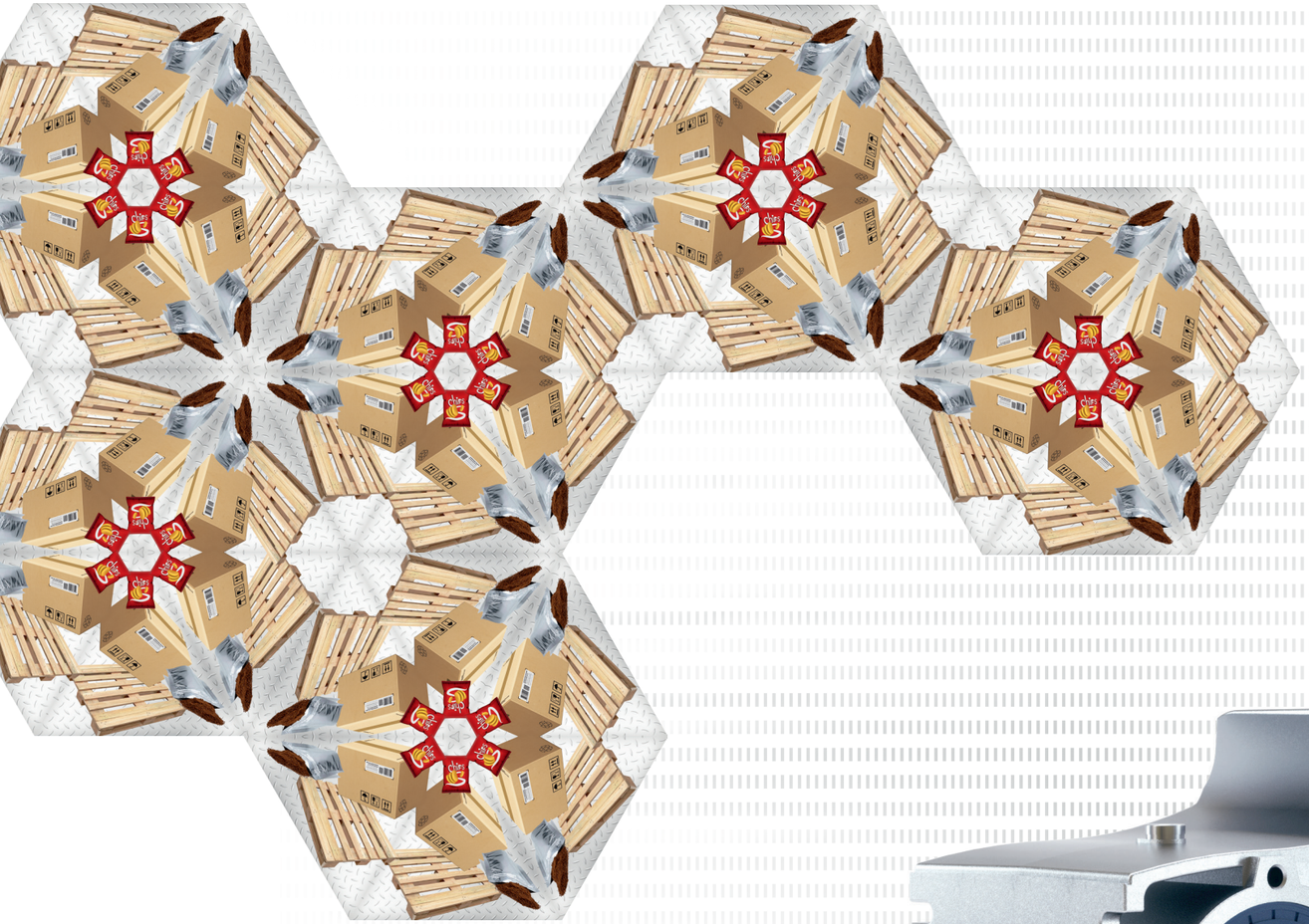
For higher-level applications, we offer drive solutions for the following processes:

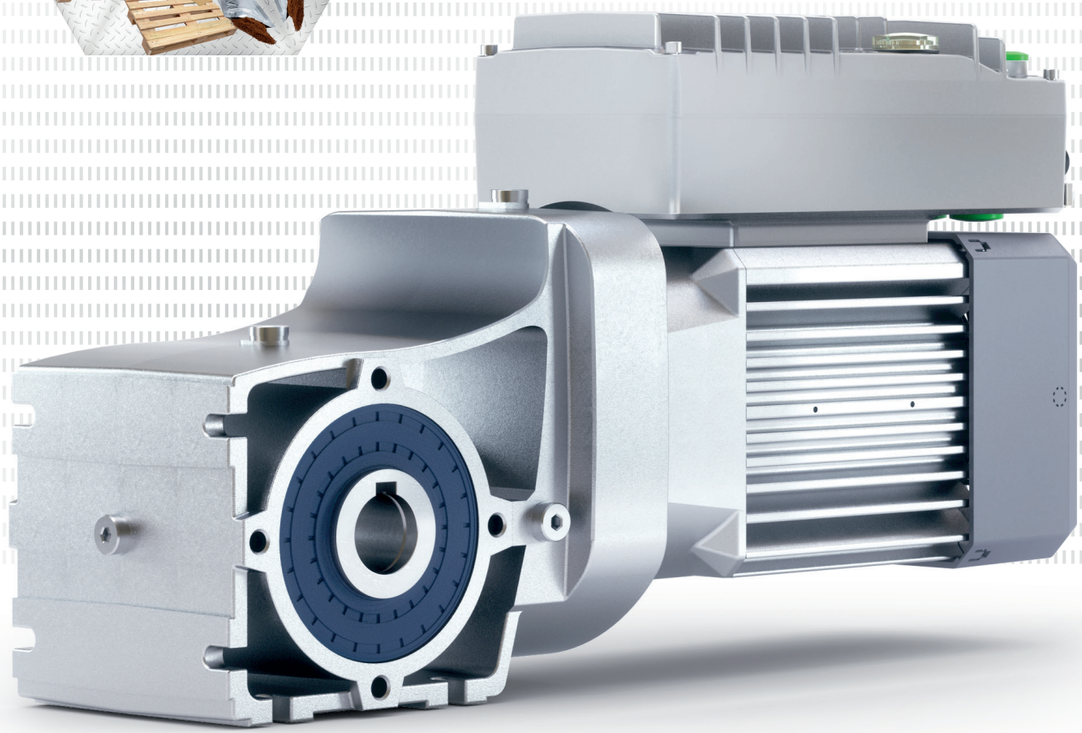
- Conveying
- Pushing
- Rotating
- Packaging handling
- Labelling

Our drive solution for packaging machines

Decentrally controlled drive systems for packaging machines

- Modular system solutions simplify product selection and system extensions
- Compact design allows for small installation spaces
- Decentralised drive technology reduces wiring efforts



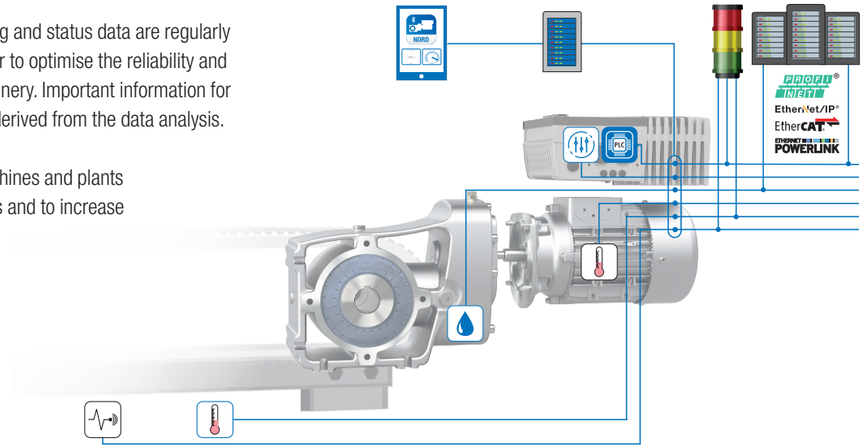


Drive solutions for packaging machinery

Condition monitoring for predictive maintenance

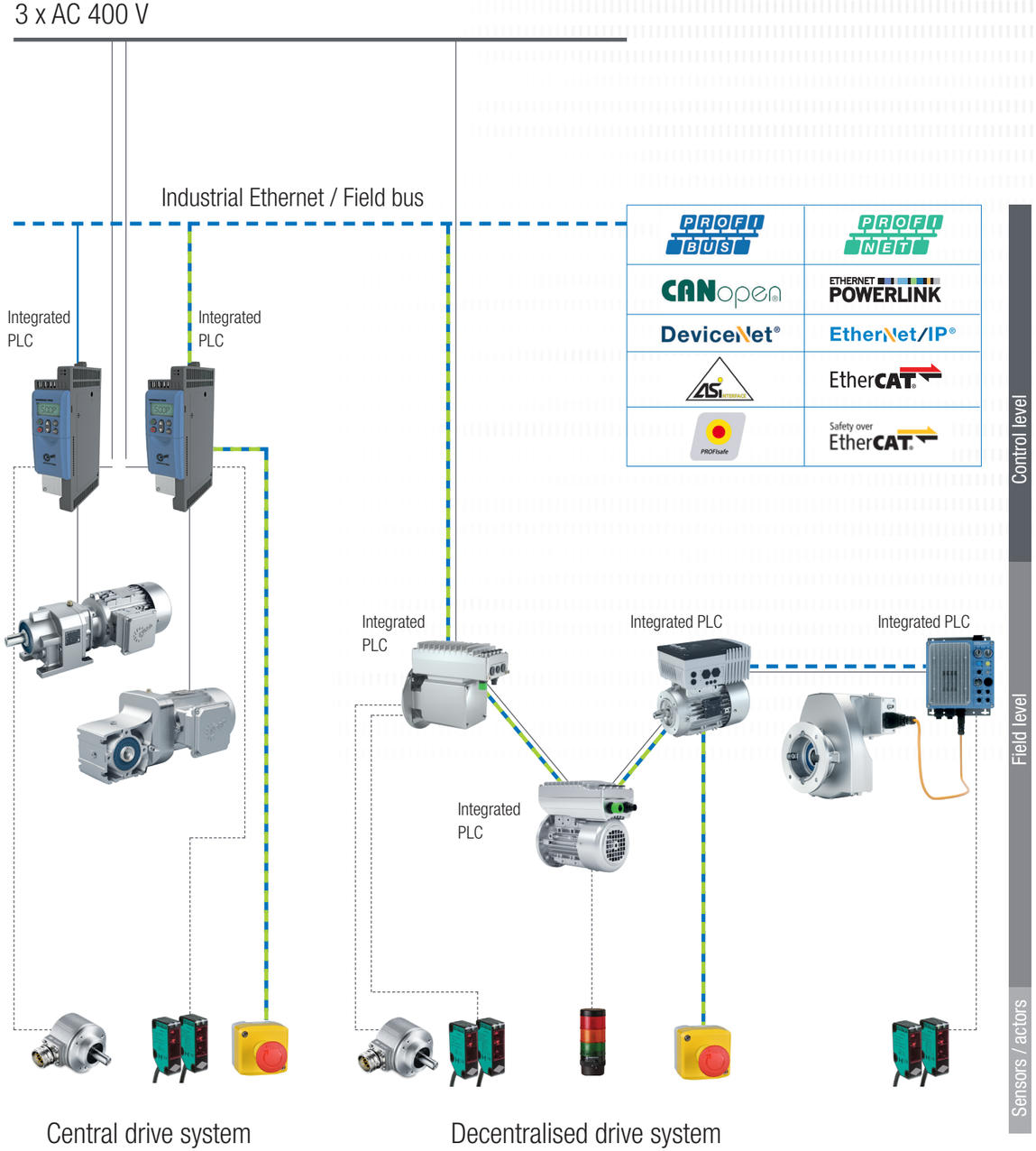
In condition monitoring, operating and status data are regularly or continuously recorded in order to optimise the reliability and efficiency of the plant and machinery. Important information for predictive maintenance can be derived from the data analysis.

The objective is to maintain machines and plants proactively, to reduce downtimes and to increase the efficiency of the entire plant.



System vibration sensor	▸ NORD qualified sensors ▸ Customer-specific sensors can be connected (analogue/digital)
Temperature sensor	▸ Motor temperature sensor on the basis of PT1000 ▸ Ambient or system temperature
Oil change	▸ Determination of the optimum time for oil change on the basis of the virtual oil temperature ▸ Algorithm is executed in the internal PLC
Drive parameters	▸ Read-out of the drive parameters of the drive system ▸ Basis for virtual sensors
Integrated PLC	▸ Pre-processing of drive-specific parameters and drive-related sensors ▸ Evaluation of drive condition
Signal beacon	▸ Local display of drive condition ▸ Scalable display
Local data management	▸ Processing of drive data for drive and system analysis ▸ Condition monitoring
Local dashboard	▸ Display of drive and system data
Higher level PLC	▸ Processing of condition monitoring information by the customer ▸ Combination of condition monitoring information with process data

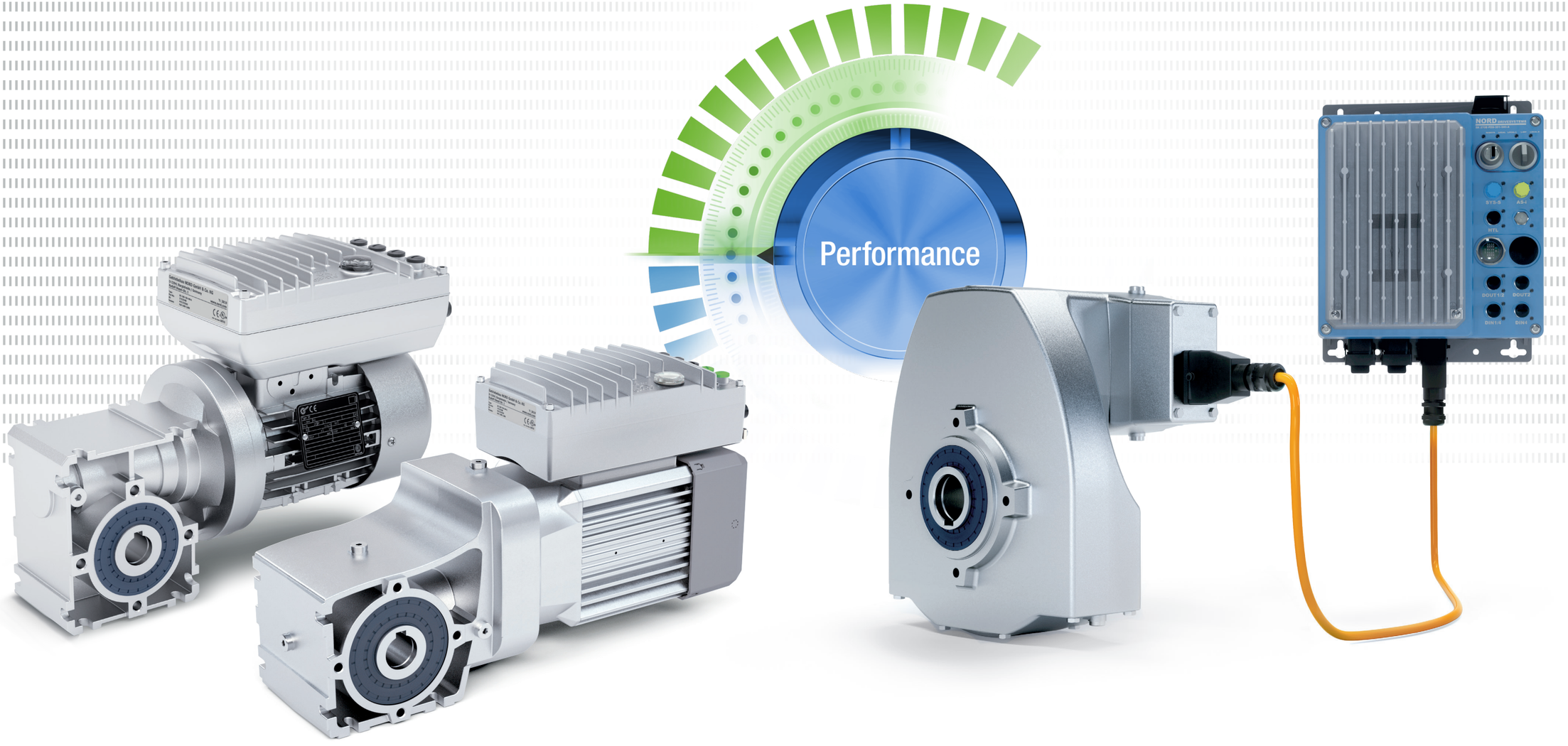
Increased efficiency and flexibility



Central drive system

Decentralised drive system

Drive solutions for packaging machinery



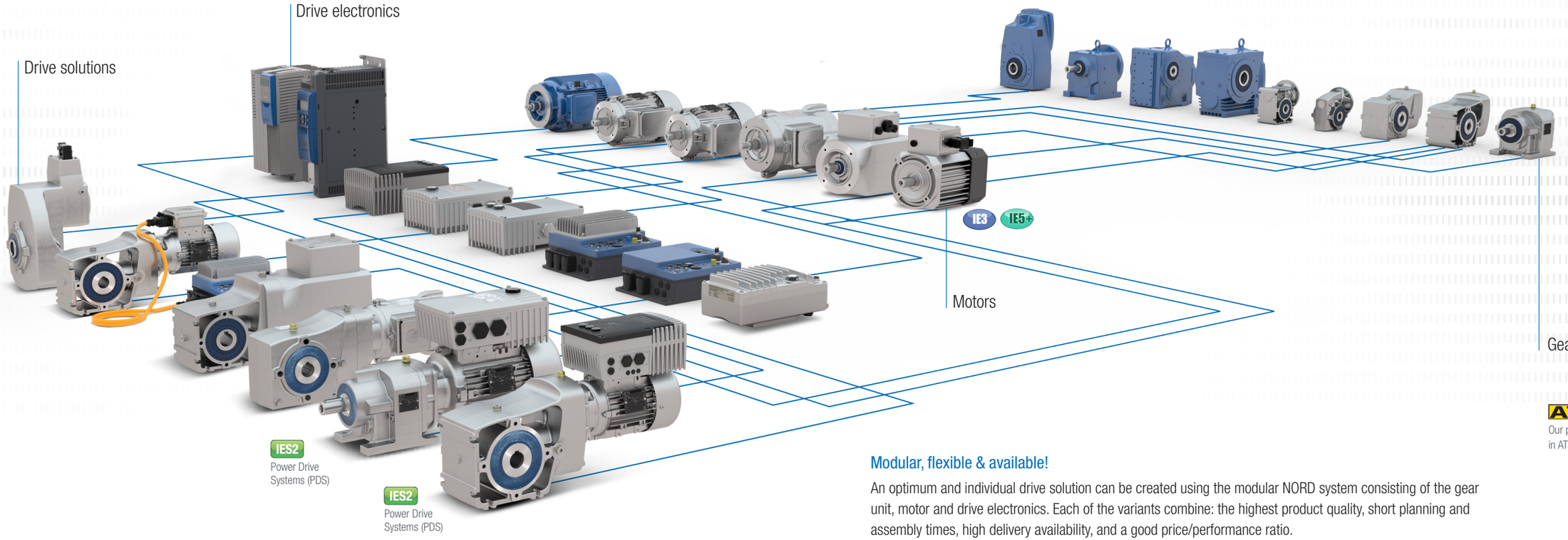
NORDAC *ON / ON+*
Strong focus, optimum function

Decentralised frequency inverters are optimally suited to meet the special and different requirements of packaging applications. NORDAC ***ON*** has been developed for IE3 geared motors, whereas NORDAC ***ON+*** has been optimised for use with IE5+ synchronous geared motors. These frequency inverters have an integrated Industrial Ethernet interface and full plug-and-play compatibility paired with an extremely compact design. NORDAC ***ON/ON+*** are an economic solution for IIoT environments.

The revolutionary DuoDrive with integrated IE5+ motor is especially suitable for reducing the total cost of ownership.

- Extremely high system efficiency of up to 92%
- Reduced Total Costs of Ownership (TCO) and faster Return on Investment (ROI)
- Reduced number of variants through constant motor torque over a wide speed range
- Very compact wash-down design for optimal installation space utilisation
- Market-compatible connection dimensions for simple replacement
- Very low noise emissions thanks to quiet running

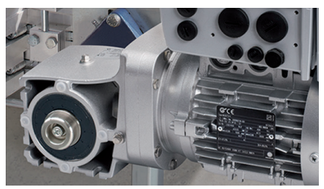
Drive solutions for packaging machinery



ATEX
Our products are available in ATEX-certified versions.

Modular, flexible & available!

An optimum and individual drive solution can be created using the modular NORD system consisting of the gear unit, motor and drive electronics. Each of the variants combine: the highest product quality, short planning and assembly times, high delivery availability, and a good price/performance ratio.



Reliable gear units with one-piece UNICASE housing can cater for any load.

- 2-stage, high efficiency bevel gear design
- High power density
- Long service life

Powerful motors up to IE5+ keep drive systems in motion in all operating situations.

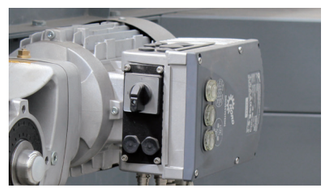
- Designed in compliance with international standards
- High overload capability
- Ultimate energy efficiency

Intelligent drive electronics provide exactly the control options that you need.

- Scalable functions
- Full field bus connection facilities
- Wide power range
- Flexible configuration

Extensive communication options enable access to the drive units from all levels. This provides a wide range of setting options.

- All common bus systems
- Quick and simple commissioning with plug-in control box or using NORDCON software and NORDAC *ACCESS BT*



Switches and keys are located directly on the drives and enable direct starting and stopping as well as mode switching.

- Mains switch
- Selector switch for local or remote control
- Start/Stop and Forward/Reverse switch
- Key switch

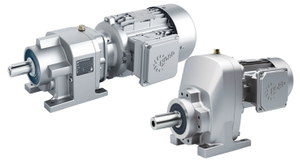
All interfaces are designed for ease of use. Drives can be easily configured and installed.

- Simple plug-and-play with all common connection plugs
- Plug-in supply cable and motor output
- Plug-in sensors and encoders
- Pre-assembled cables
- PLC integrated at no extra cost
- Daisy chaining

NORD DRIVESYSTEMS

Drive solutions for packaging machinery

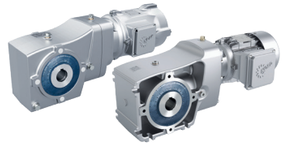
UNICASE helical in-line gear units (Catalogue G1000)



- ✓ Foot- or flange-mounted version
- ✓ Optimum sealing
- ✓ Long life, low-maintenance
- ✓ UNICASE housing

Sizes: 11
Power: 0.12–160 kW
Torque: 10–26,000 Nm
Ratio: 1.35–14,340.31:1

NORDBLOC.1® 2-stage bevel gear units (Catalogue G1014)



- ✓ Foot mounted, flange mounted or face mounted
- ✓ Aluminium housing
- ✓ Hollow or solid shaft

Sizes: 6
Power: 0.12–9.2 kW
Torque: 50–660 Nm
Ratio: 3.03–70:1

UNIVERSAL SI worm gear units (Catalogue G1035)

- ✓ Modular
- ✓ Life-long lubrication
- ✓ Universal mounting
- ✓ IEC version

Sizes: 5
Power: 0.12–4.0 kW
Torque: 21–427 Nm
Ratio: 5.00–3,000:1

DuoDrive – Integrated gear unit/motor concept

- ✓ Highly efficient IE5+ motor
- ✓ System efficiency of 92%
- ✓ Results in a significant reduction of the TCO (Total Cost of Ownership) compared to other drive systems
- ✓ High power density
- ✓ Minimal noise emissions
- ✓ Simple plug-and-play commissioning
- ✓ Hygienic design (wash-down)
- ✓ Design: M1, M4, M5, M6

Sizes: 3
Power: 0.35–1.5 kW
Torque: 26–78 Nm
Ratio: 3.24–16.2:1

Motors (Catalogue M7000)

- ✓ IE3 motors from 0.12 kW (size 63)
- ✓ IE5+ motors

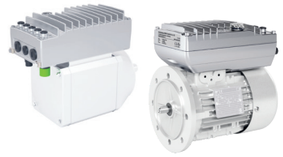
IE3 IE5+

NORDAC *FLEX* SK 200E frequency inverter (Catalogue E3000)

- ✓ Energy-saving function
- ✓ Integrated PLC
- ✓ Integrated POSICON positioning control

Sizes: 4
Voltage: 1 ~ 110–120 V, 1 ~ 200–240 V, 3 ~ 200–240 V, 3 ~ 380–500 V
Power: 0.25–22 kW

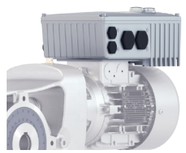
NORDAC *ON*/*ON+* SK 300P (Catalogue E3000)



- ✓ Optimised by focus
- ✓ Very compact design
- ✓ Plug-and-play for fast commissioning
- ✓ Integrated Ethernet interface

Sizes: 2
Voltage: 3 ~ 400 V
Power: 0.37–0.95 kW

NORDAC *START* SK 135E motor starter (Catalogue E3000)



- ✓ Integrated electronic brake rectifier
- ✓ Reversing starter with soft start function
- ✓ Consistent parameter structure

Sizes: 2
Voltage: 3 ~ 200–240 V, 3 ~ 380–500 V
Power: 0.12–3 kW or up to 7.5 kW

NORDAC® *PRO* SK 500P frequency inverter (Catalogue E3000)

- ✓ Precise current vector control with high overload reserves for operating asynchronous and synchronous motors
- ✓ Universal interface for real-time Ethernet
- ✓ Integrated PLC for drive-related functions, even in the basic device

Sizes: 3
Voltage: 1 ~ 200–240 V, 3 ~ 380–480 V
Power: 0.25–22 kW

NORDAC *LINK* SK 250E Field Distribution System (FDS) LogiDrive (Catalogue E3000)

- ✓ Frequency inverter or motor starter
- ✓ PLC functionality for drive-related functions
- ✓ All connections in plug-in design foreasy commissioning and maintenance

Sizes: 3
Voltage: 3 ~ 380–500 V
Power: Frequency inverter 0.37–7.5 kW, motor starter 0.12–3 kW

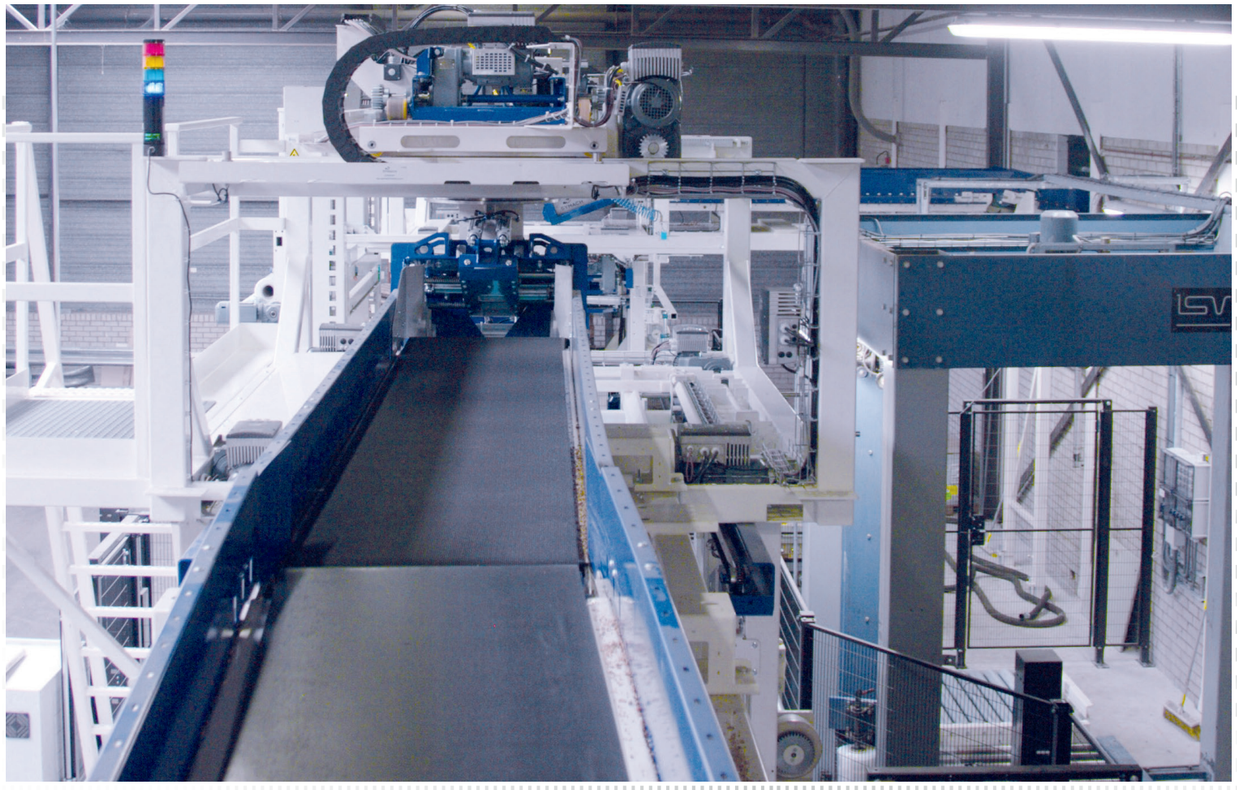
Drive solutions for packaging machinery

WILD GOOSE Bottle filling line

The implementation of the new drive concept was carried out step by step.

"NORD played an important role as our supplier and consultant", says Bakker. "A supplier who supports you and thinks along the same lines provides a great opportunity. This was precisely the case with NORD. Not the quality of the products alone was decisive for us, but also the good relationships which we have built over the past years with NORD as our global partner."

Sacha Bakker,
Managing Director and co-owner of the Dutch engineering company SYMACH



SYMACH Palletizing

EN

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