

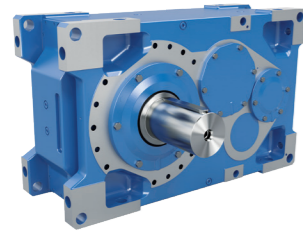
Drive solutions for the beverage industry

Complete drive systems from a single source

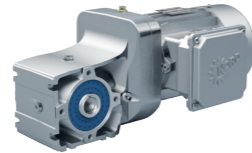


DRIVESYSTEMS

Our Solution. Your Success.



Industrial gear units

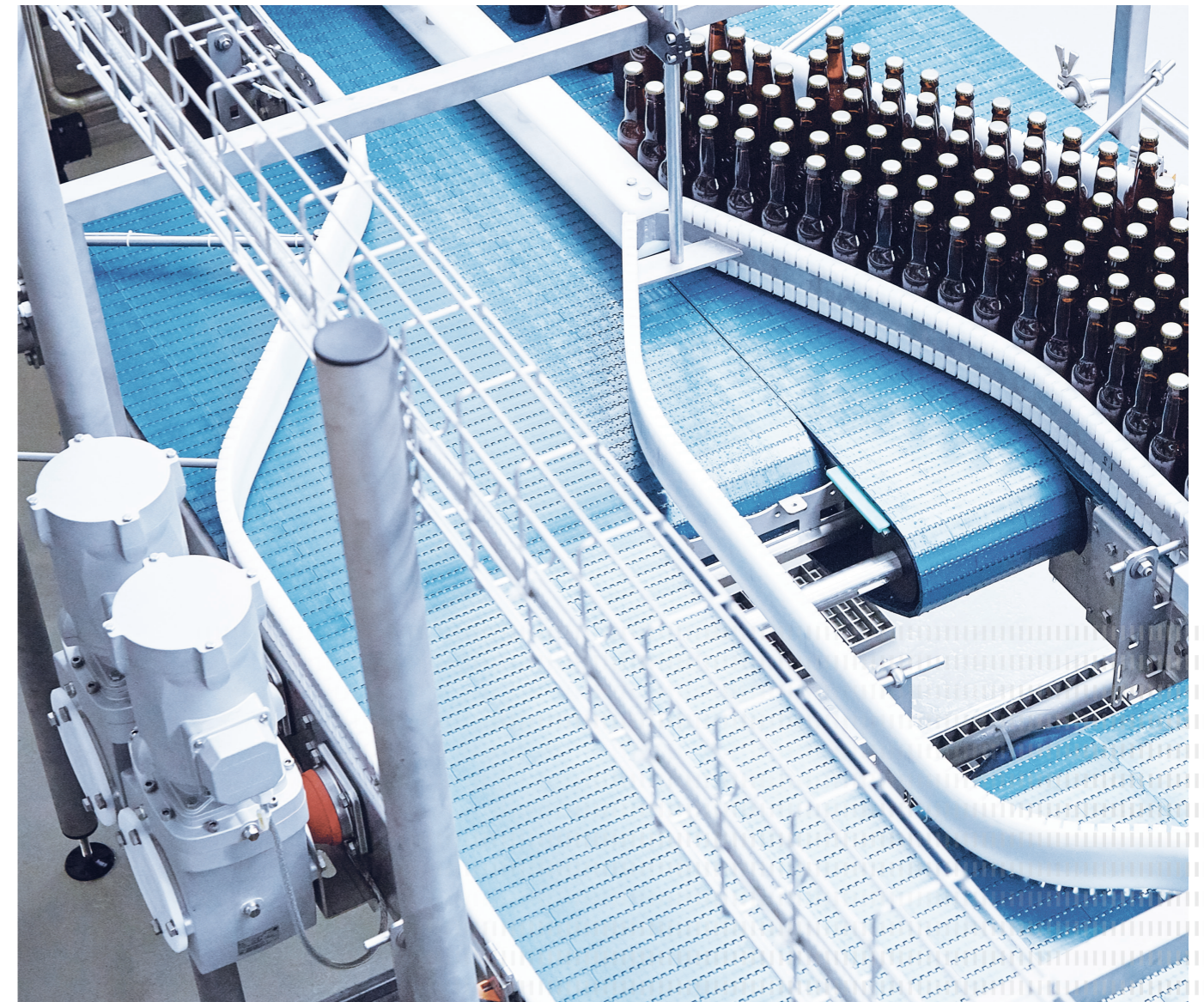


Geared motors



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, providing local stocks, assembly centres, technical support and customer service.
- ▶ More than 4,900 employees throughout the world create customised solutions.



Headquarters in Bargteheide

Motor production

Production and assembly

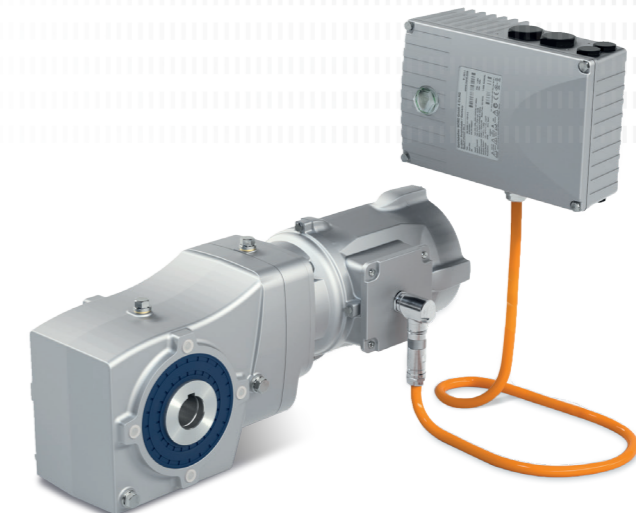
Motor assembly

Gear unit production

Inverter production

Integrated solutions for the special requirements of the beverage industry

- ▶ Simple commissioning
- ▶ Easy maintenance and safe, reliable operation
- ▶ Lower total cost of ownership
- ▶ Modular design
- ▶ Energy savings
- ▶ Project and product support
- ▶ Global NORD network



Packaging

Packaging machines require a large number of directions of movement to gently pack the individual products into cartons or to combine beverage crates into packaging units.

Palletising

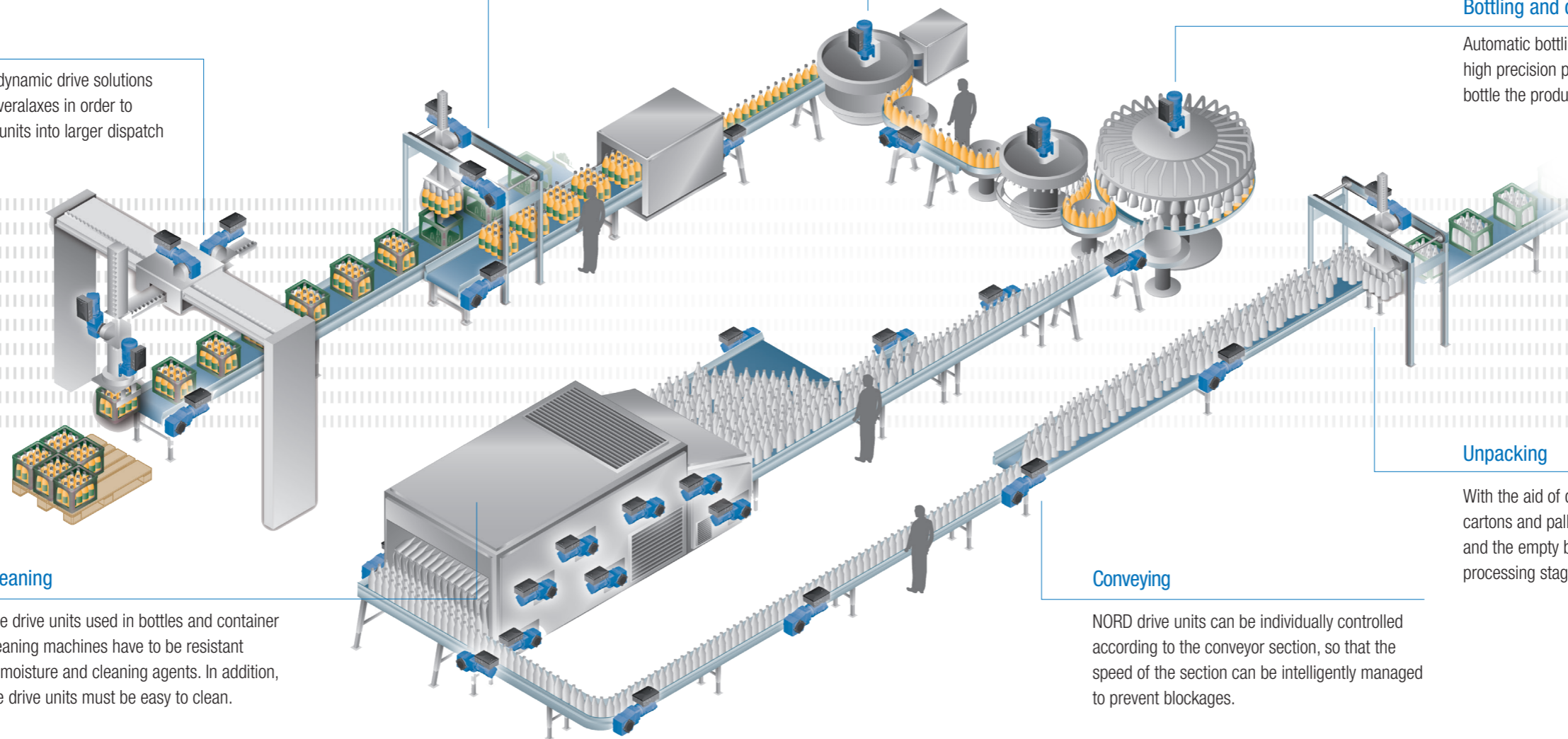
Palletising systems require dynamic drive solutions for precise positioning in several axes in order to quickly combine packaging units into larger dispatch consignments.

Labelling

Labelling machines for every type of container, regardless of whether you use cold or hot adhesives, require precise and even guidance of the container to be labelled.

Bottling and capping

Automatic bottling and capping machines require high precision positioning to quickly and hygienically bottle the products and securely cap them.



Cleaning

The drive units used in bottles and container cleaning machines have to be resistant to moisture and cleaning agents. In addition, the drive units must be easy to clean.

Conveying

NORD drive units can be individually controlled according to the conveyor section, so that the speed of the section can be intelligently managed to prevent blockages.

Unpacking

With the aid of dynamic drive units for palletising, cartons and pallets can be unpacked fully automatically and the empty bottles can be quickly fed into further processing stages.

NORD DRIVESYSTEMS is one of the world's leading drive technology companies. Our solutions are used throughout the world for a wide variety of applications in the beverage industry.

NORD covers a wide range of applications in the beverage industry with industry-specific, innovative drive solutions.

We know your business and precisely understand your requirements. We prefer longterm collaboration with our customers and partners. You can be confident that we will do everything that we can to reinforce the good reputation of your brand.

NORD DRIVESYSTEMS provides:

- ▶ Extensive knowledge of applications and technical support
- ▶ Complete drive solutions from a single source
- ▶ Strong global presence and service
- ▶ Thousands of installed drives in the food and beverage industry
- ▶ Wide range of products with high quality standards
- ▶ Great reliability, economy and service life
- ▶ Recognised product quality compliant with international standards

From start to finish

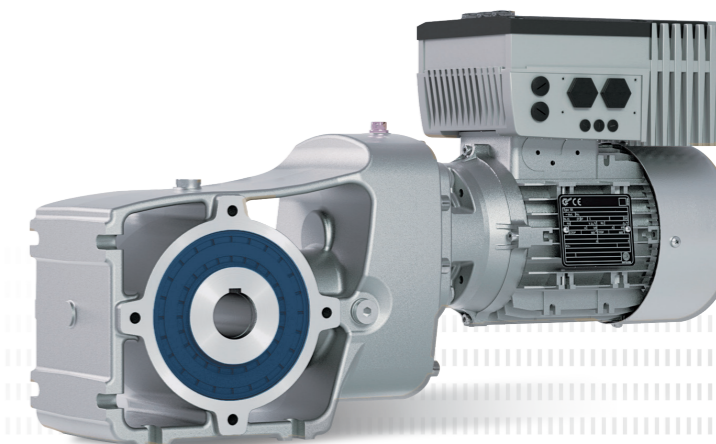
NORD DRIVESYSTEMS develops and produces scalable drive solutions for all segments of the beverage industry. From production and processing of beverages, up to bottling and packaging.

Water, juice, milk products, wine, beer or spirits

- ▶ Shredding and pressing
- ▶ Washing and rinsing
- ▶ Sterilising
- ▶ Bottling
- ▶ Closing and sealing
- ▶ Labelling
- ▶ Palletising

Conveyors and handling machinery

- ▶ Palletising machines
- ▶ Conveyor systems
- ▶ Belt gap adjusters
- ▶ Deflectors
- ▶ Storage, table, container packaging, mat, bottle neck guidance and container conveyors



Unpacking and palletising

Palletisers and packaging machines require dynamic drive solutions and precise, simultaneous positioning in several axes. NORD supplies asynchronous and synchronous motor technology with wall or motor mounted inverters and closed-loop operation.

- ▶ Compact design
- ▶ Motors with Super Premium Efficiency or IE4
- ▶ Servo mode control systems with integrated encoders for precise positioning
- ▶ Smooth housings for gear units, motors and inverters
- ▶ Suitable for wash-down



Cleaning

Cleaning and rinsing is one of the most important processes in the beverage industry. NORD products are precise and powerful and reliably fulfil all requirements. They are permanently resistant to commonly used cleaning agents.

- ▶ nsd tupH surface treatment for easy cleaning (wash-down)
- ▶ Resistant to acids and alkalis (wide pH range)
- ▶ Fanless motors prevent the spread of bacteria
- ▶ Energy-efficient



Conveying

NORD supplies a wide range of products, which can be perfectly matched to the conveyor system and which correspond to the specifications of the customer's application. NORD drive units are used in a wide variety of conveyor systems in the beverage industry.

- ▶ Encoders for precise positioning
- ▶ Energy-saving inverters for control cabinet, wall or motor mounting
- ▶ nsd tupH surface treatment for easy cleaning (wash-down)
- ▶ Soft start, brake ramps and STO function



Bottling and capping

NORD DRIVESYSTEMS supplies tailor-made drives for bottling and capping machines.

- ▶ Absolute and incremental encoders
- ▶ Plug-and-Play connection technology
- ▶ Low backlash gear units and closed-loop IE4 synchronous motor technology
- ▶ nsd tupH surface treatment for easy cleaning (wash-down)



Packaging

NORD DRIVESYSTEMS supplies systems with very low energy consumption for intermittent and continuous operation.

- ▶ Compact size, Plug-and-Play connections
- ▶ Operation with decentralised or wall mounted inverters
- ▶ Encoders for precise positioning
- ▶ nsd tupH surface treatment for easy cleaning (wash-down)

Drive solutions for the beverage industry

Efficient, reliable and proven drive solutions from a single source



Foam cleaning in filling plants

Efficient

NORD drive solutions are environmentally friendly and fulfil all current national and international energy saving standards.

- ▶ Lightweight aluminium construction
- ▶ NORD motors for all requirements, including IE3 and IE4
- ▶ Intelligent NORD inverters with energy saving flux reduction for optimal operation under partial load

Reliable

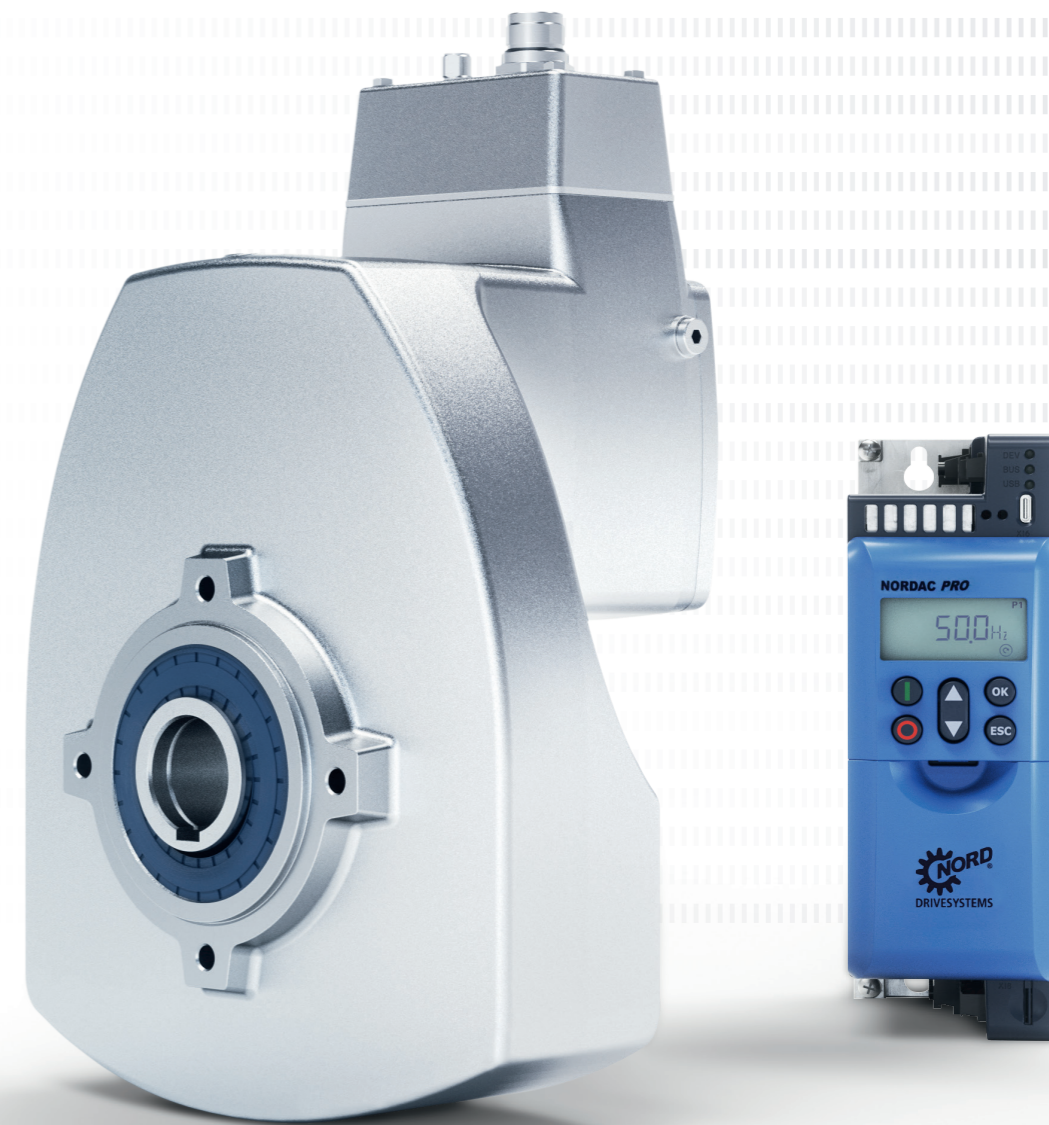
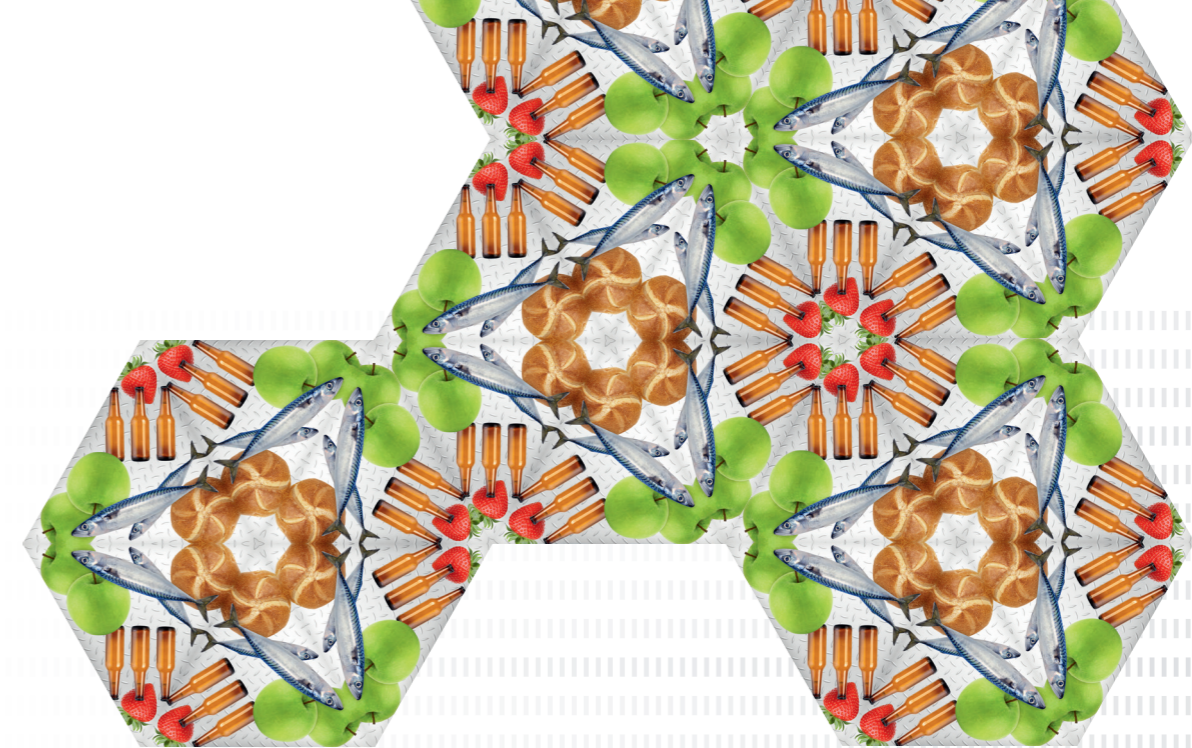
From pinions to circuit boards, all NORD mechatronic components are produced in our own factories, which means unsurpassed reliability, long operating times, long service life and low total operating costs. Countless options cater for all requirements of the food and beverage industry.

- ▶ Special lubricants for low / high temperatures
- ▶ Temperature sensors to protect against overheating
- ▶ Protection class IP66 or IP69K for cleaning with hot water
- ▶ Stainless steel shafts and accessories, metal fan blades, fanless designs
- ▶ Moisture protection: rust protection (dust and rust), multi-layer coatings or nsd tupH surface treatment

Tried-and-tested

Demanding environments are common in the food and beverage industry. These include extreme temperatures, use of high pressure jet cleaning and various hazard areas, e.g. for alcoholic beverages and chemically aggressive environments in cleaning processes. NORD special solutions for this problem have proven themselves throughout the world.

- ▶ Explosion-protected motors (ATEX, NEC) for Zone 1/21 and Zone 2/22 explosion hazard areas
- ▶ nsd tupH surface treatment system to protect against corrosion, chemical, pressure jet and steam jet cleaning
- ▶ Dairy versions: condensate drains, condensation protection heaters

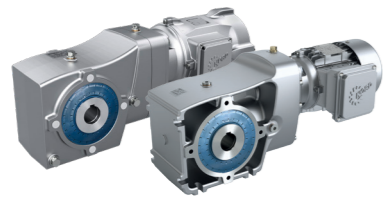


Drive solutions for the beverage industry

As early as 1981 NORD DRIVESYSTEMS developed the revolutionary UNICASE housing. An enclosed gear unit housing which combines all elements of the gear unit is produced from a single piece of material.

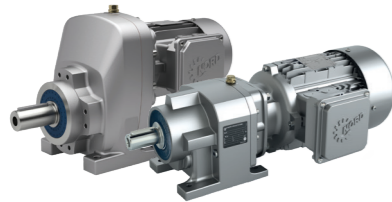
- ▶ A housing block which integrates all bearing points
- ▶ Complete machining in a single step
- ▶ High output loads
- ▶ High axial and radial load capacity
- ▶ Ultimate reliability
- ▶ Long service life
- ▶ Quiet running

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



- ✓ Foot, flange or face mounted
 - ✓ Hollow or solid shaft
 - ✓ Aluminium housing
- Sizes: 6
 Power: 0.12 – 9.2 kW
 Torque: 50 – 660 Nm
 Speed ratio: 3.03 – 70:1

NORDBLOC.1® 1- and 2-stage helical gear units (Catalogue G1000)



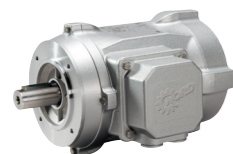
- ✓ Foot or flange mounted
 - ✓ Die-cast aluminium housing
 - ✓ UNICASE housing
 - ✓ Industry standard dimensions
- Sizes: 13
 Power: 0.12 – 37 kW
 Torque: 30 – 3,300 Nm
 Speed ratio: 1.07 – 456.77:1

UNIVERSAL SMI worm gear units (Catalogue G1035)



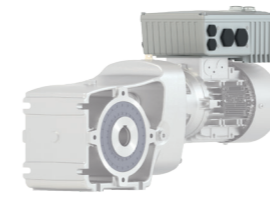
- ✓ Modular
 - ✓ Universal mounting options
 - ✓ Life-long lubrication
 - ✓ IEC version
- Sizes: 5
 Power: 0.12 – 4.0 kW
 Torque: 21 – 427 Nm
 Speed ratio: 5.00 – 3,000:1

Smooth surface motors (Catalogue M7010)



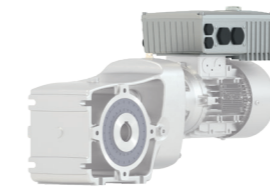
- ✓ IP66 / IP69K (optional)
 - ✓ Aluminium motors
 - ✓ nsd tupH surface treatment (optional)
 - ✓ IE3 IE4
- Sizes: 80, 90, 100
 Power: 0.12 – 2.2 kW

NORDAC START SK 135E motor starters (Catalogue E3000)



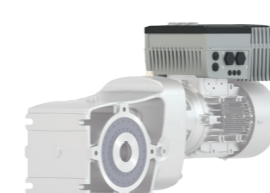
- ✓ Integrated electronic brake rectifier
 - ✓ Consistent parameter structure
 - ✓ Reversing starter with soft start function
- Sizes: 2
 Voltage: 3~ 200 – 240 V, 3~ 380 – 500 V
 Power: 0.12 – 3 kW resp. up to 7.5 kW

NORDAC BASE SK 180E frequency inverters (Catalogue E3000)



- ✓ Stand-alone operation
 - ✓ 4 parameter sets
 - ✓ Sensorless current vector control (ISD control)
 - ✓ Integrated PLC
- Sizes: 2
 Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 500 V
 Power: 0.25 – 2.2 kW

NORDAC FLEX SK 200E frequency inverters (Catalogue E3000)



- ✓ Energy-saving function
 - ✓ Integrated POSICON positioning control
 - ✓ Integrated PLC
- 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 PRO SK 500E frequency inverters (Catalogue E3000)



- ✓ Stand-alone operation
 - ✓ 4 parameter sets
 - ✓ Sensorless current vector control (ISD control)
 - ✓ Integrated PLC
- Sizes: 11
 Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 480 V
 Power: 0.25 – 160 kW

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