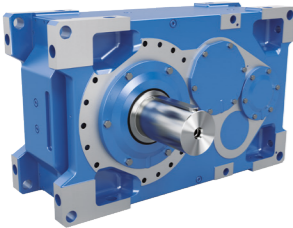


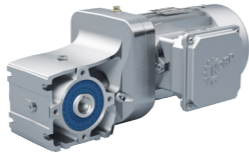
Drive solutions for the packaging industry

Complete drive systems from a single source





Industrial gear units

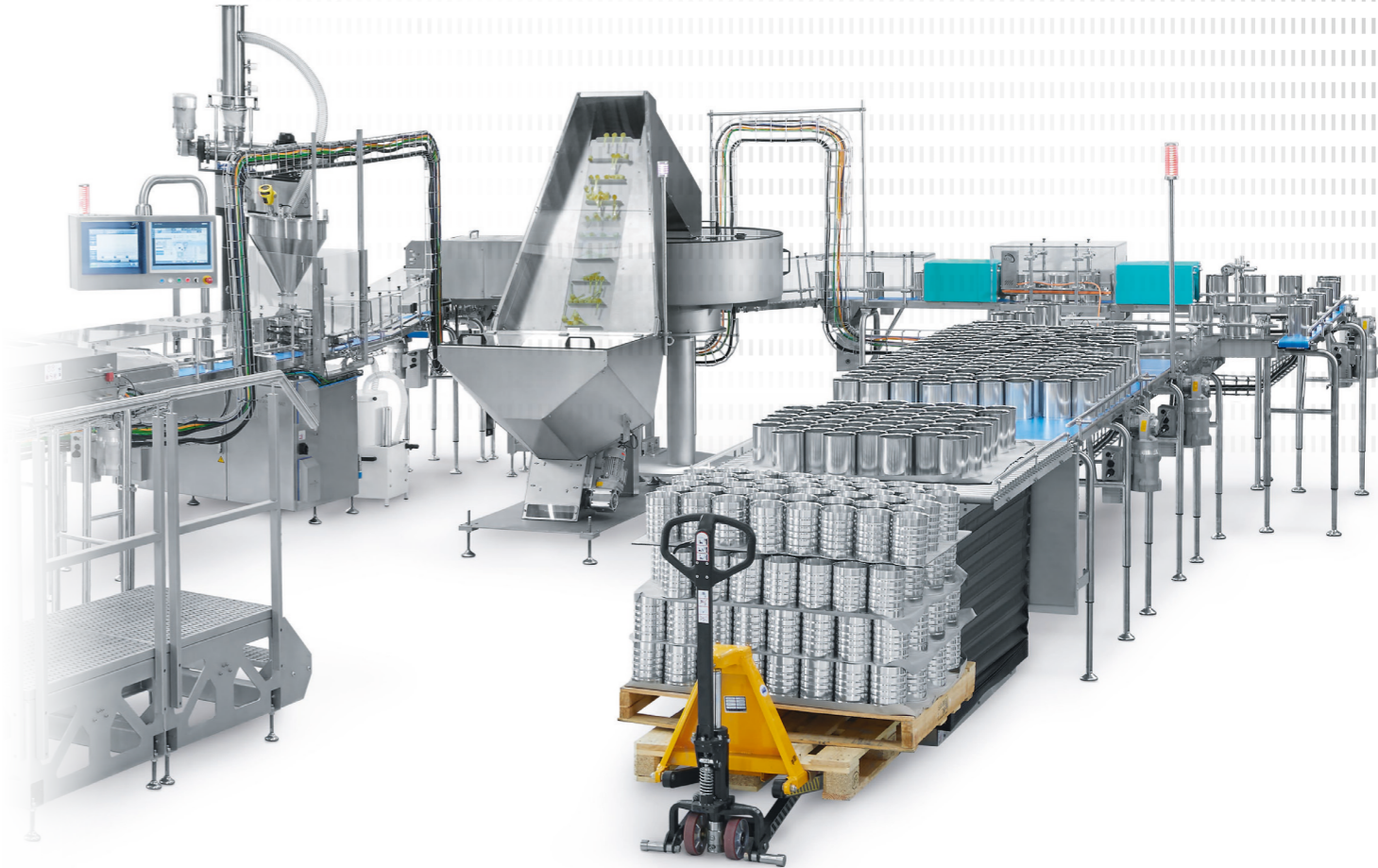


Geared motors



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 4,700 employees worldwide, we create customised solutions



Headquarters in Bargteheide



Gear unit production



Inverter production



Motor production



Production and assembly



Motor mounting

Nord - your global partner for reliable & versatile solutions for packaging machines.

Reliable Partner

Built for the application with decades of experience, the Nord technology is made to last

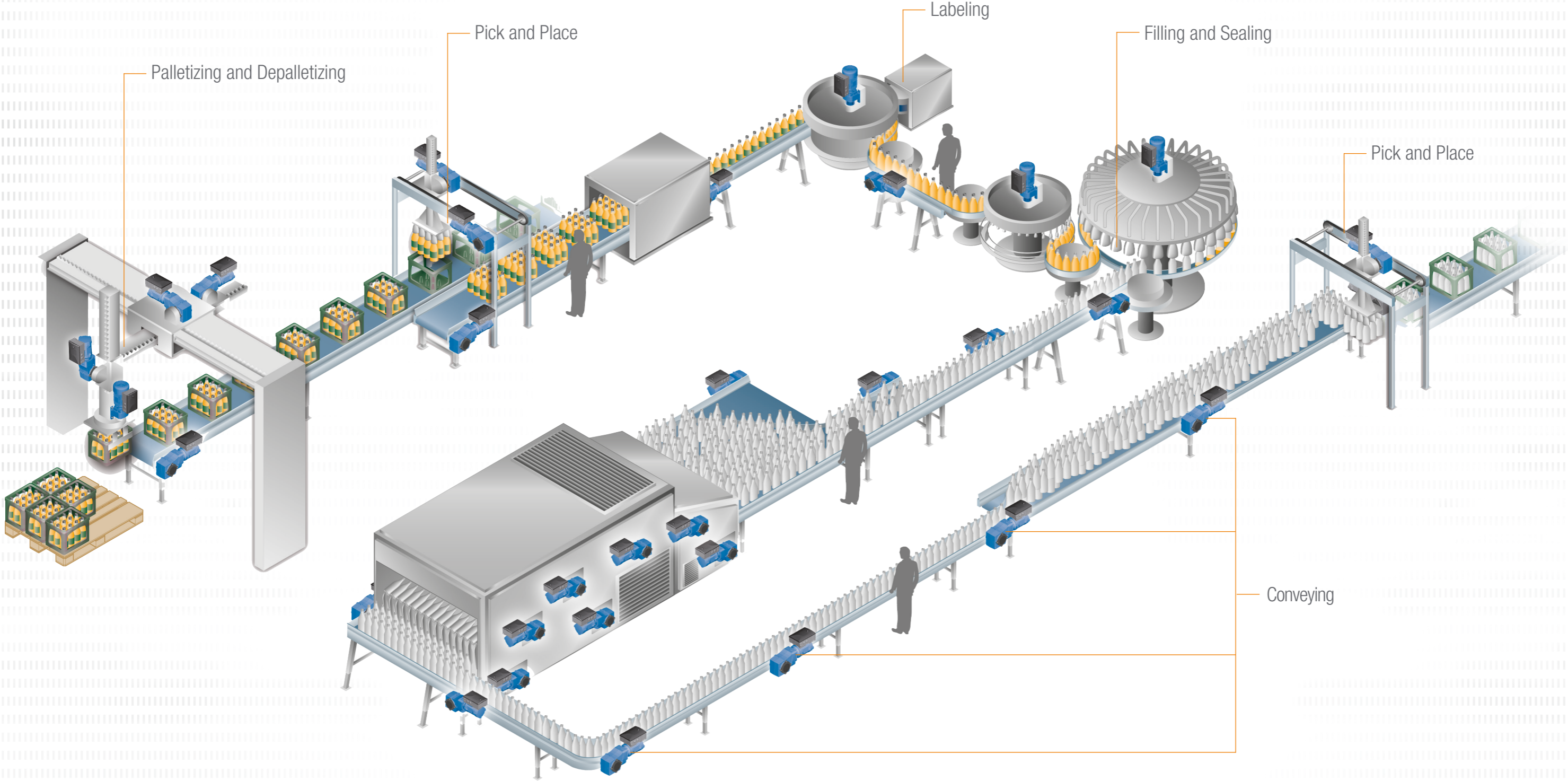
Efficient engineering

Straight structured system support and decentralized intelligent integration saving time in engineering, purchasing, installation and operation

Connected

Vertical connected to all Bus systems available & horizontal connected with decentralized solutions

Drive solutions for the packaging industry



From filling to palletizing

NORD DRIVESYSTEMS designs, engineers, and manufactures scalable drive solutions for all segments of the packaging industry. These products are energy efficient, reliable, and highly configurable to meet a wide range of application needs.

Primary Packaging

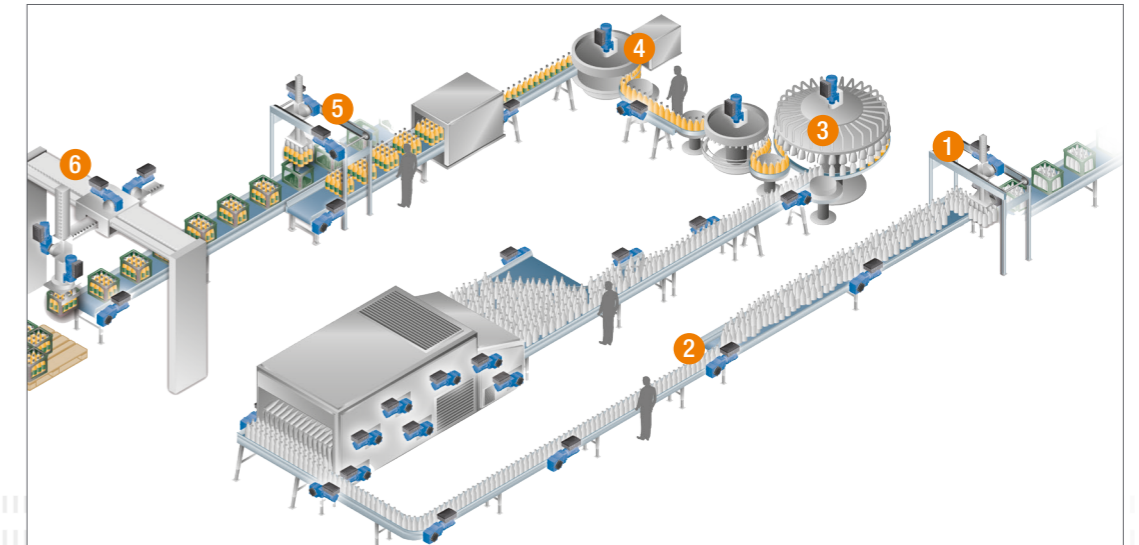
- ▶ Filling & sealing
- ▶ Dosing
- ▶ Sorting
- ▶ Feeding

Secondary Packaging

- ▶ Cartoning
- ▶ Closing
- ▶ Sealing

End of line Packaging

- ▶ Wrapping
- ▶ Strapping
- ▶ Palletizing



1 & 5 Pick and Place

Precise positioning functions, targeted, compact and cost-effective drive solution based on decentralized frequency inverter solutions.

- ▶ POSICON Software
- ▶ NORDAC *ON/ON+*
- ▶ NORDAC *FLEX*



2 Conveying

NORD's LogiDrive complete decentralized drive package offers an intuitive interface for easy monitoring and precise control over all units within the system. It greatly reduces commissioning and engineering efforts for conveyor systems.

- ▶ VFDs that enable precise positioning
- ▶ Soft start, brake ramps, and STO function
- ▶ Each parameter configurable with Ethernet interface
- ▶ Reduction of variants and lower Total Cost of Ownership (TCO) with LogiDrive



3 Filling and Sealing

NORD gear units easily regulate the flow of materials to streamline operations and prevent material back up.

- ▶ Motion control and safety functions
- ▶ Food safe paints and other high-quality surface protection options
- ▶ Food grade oil available
- ▶ nsd tupH™ sealed surface conversion for easy cleaning (wash-down)



4 Labeling

Variable frequency drives give labeling machines the precision and speed control required to maintain operations and avoid costly downtime.

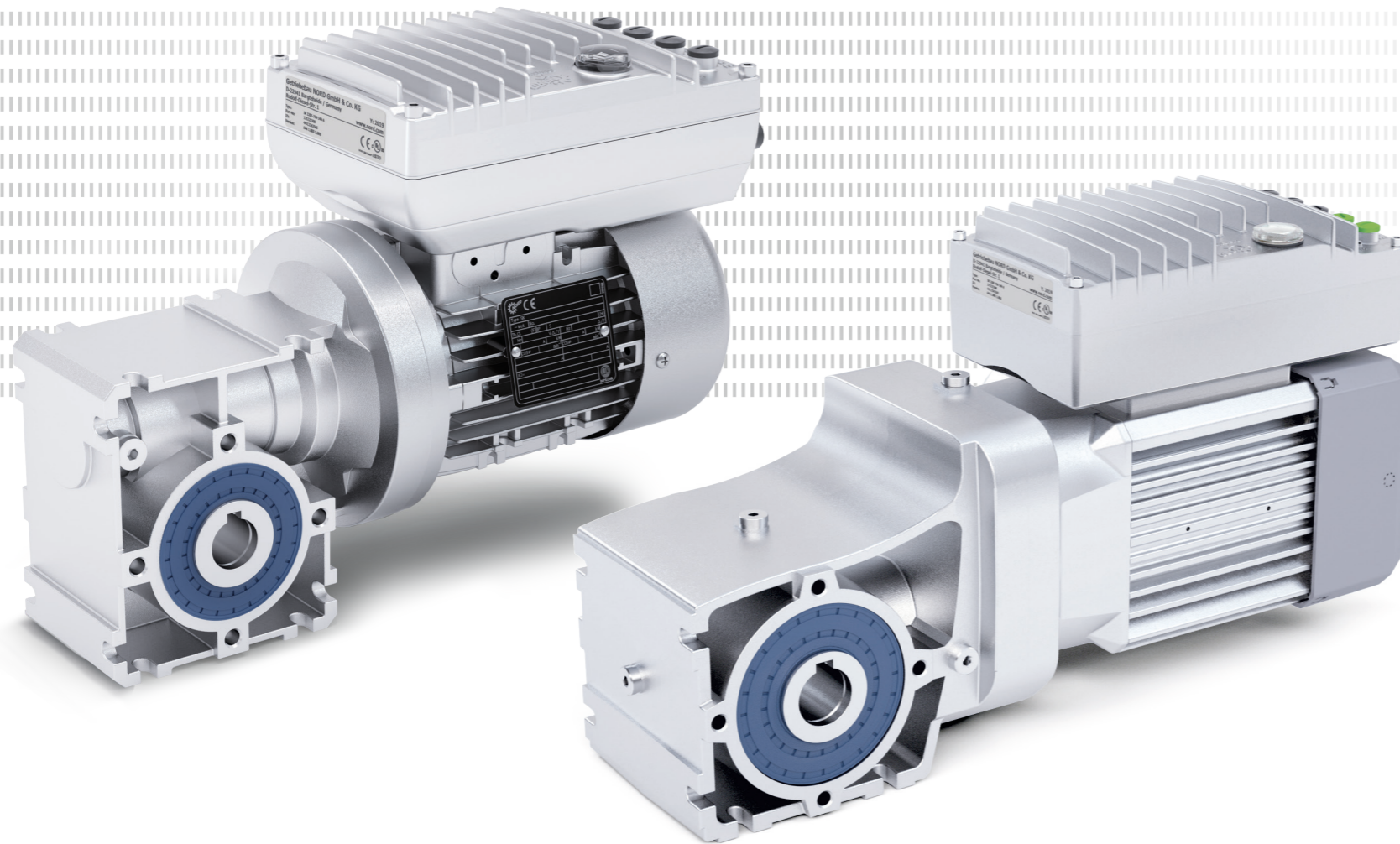
- ▶ VFDs for motor or wall mounting
- ▶ Plug-and-Play connection technology
- ▶ Motion control and safety functions



6 Palletizing and Depalletizing

Reliable, robust gear units from NORD keep palletizers and depalletizers moving dynamically and safely. When paired with decentralized variable frequency drives, these units provide extremely precise positioning and flexible control.

- ▶ High overload capacity
- ▶ Units can be proactively maintained to avoid breakdown
- ▶ Integrated PLC function
- ▶ One piece UNICASE™ housings for long service life



NORDAC ON/ON+ Strong focus, optimum function

The decentralised frequency inverter particularly serves the special requirements for a wide range of packaging applications. The NORDAC ON has been developed for IE3 drives while the NORDAC ON+ has been optimised for the combination with the IE5+ synchronous motor. It is characterised by an integrated Ethernet interface and full pluggability as well as a very compact design. An economic plug-and-play solution for IIoT environments

- Power range: 0,496 – 1,274 HP (0.37 - 0.95 kW)
- Protection class: IP55, IP66
- Wall or motor mounting
- Multi-protocol Ethernet interface
- Plug-and-play solution for fast commissioning

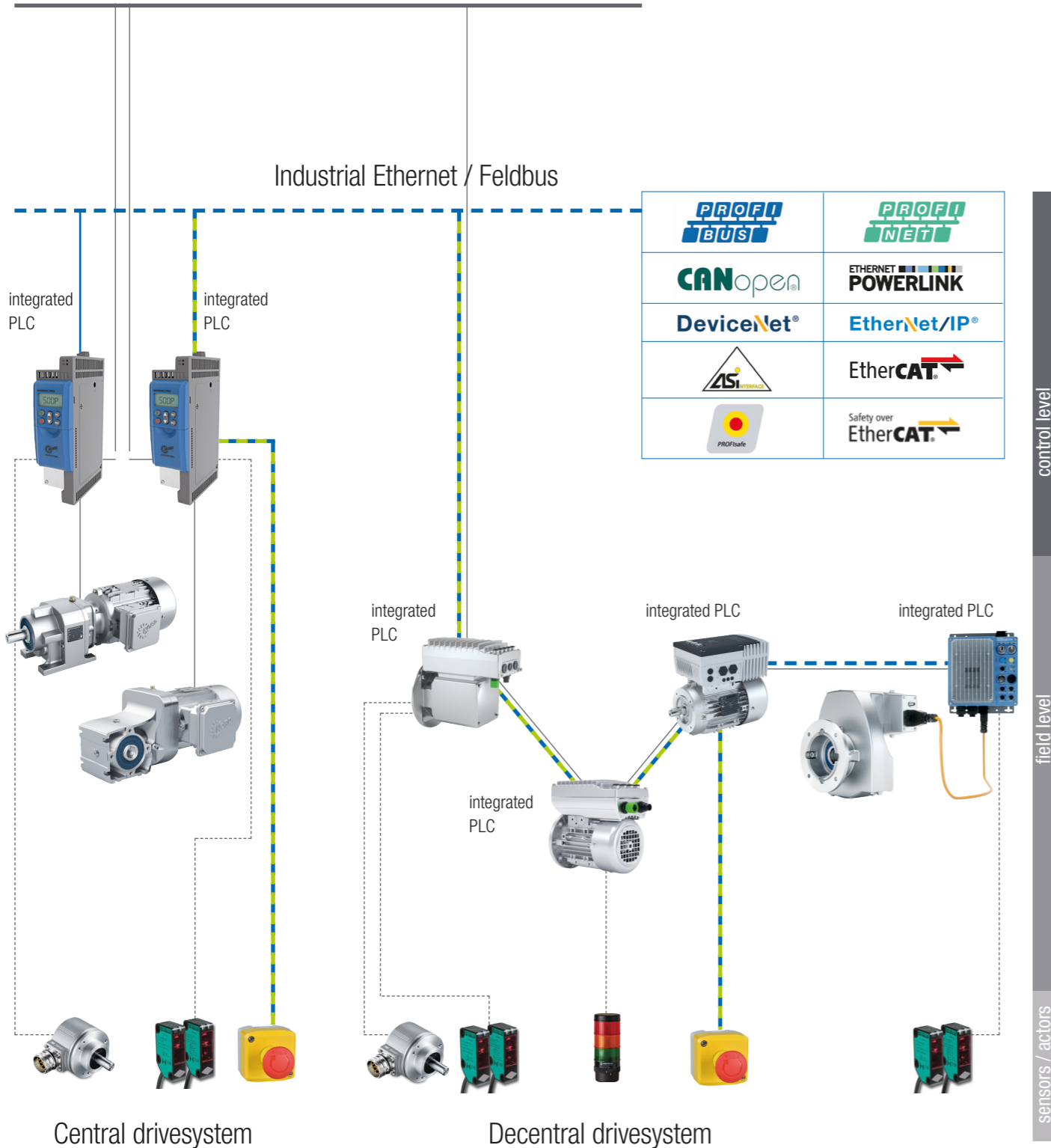
Motor	BG1	BG2	BG3
63 LP/4 – 2,600 rpm	1106 lb-in (1.25 Nm) – 0,42 HP (0.31 kW) – 1.2 A	1106 lb-in (1.25 Nm) – 0,42 HP (0.31 kW) – 1.2 A*	
71 SP/4 – 2,600 rpm	150 lb-in (1.7 Nm) – 0,58 HP (0.43 kW) – 1.5 A	151 lb-in (1.7 Nm) – 0,58 HP (0.43 kW) – 1.5 A*	
71 LP/4 – 2,600 rpm		22 lb-in (2.5 Nm) – 0,86 HP (0.64 kW) – 1.9 A	
80 SP/4 – 2,600 rpm		3248 lb-in (3.67 Nm) – 1,27 HP (0.95 kW) – 2.2 A	
ASM 90 – 2,600 rpm			In preparation

Greater powers in 87 Hz can be equipped with NORDAC FLEX until BG3 is available.

Features

- ▶ SI worm gears
- ▶ IE3 motor, developed for FI operation
- ▶ 350 V motor
- ▶ 87 Hz characteristic curve
- ▶ Version reduction
- ▶ Pre-configured standard versions
- ▶ Pluggable
- ▶ Ethernet on board
- ▶ Motor-mounted or wall-mounted
- ▶ All customary conveyor belt options are integrated

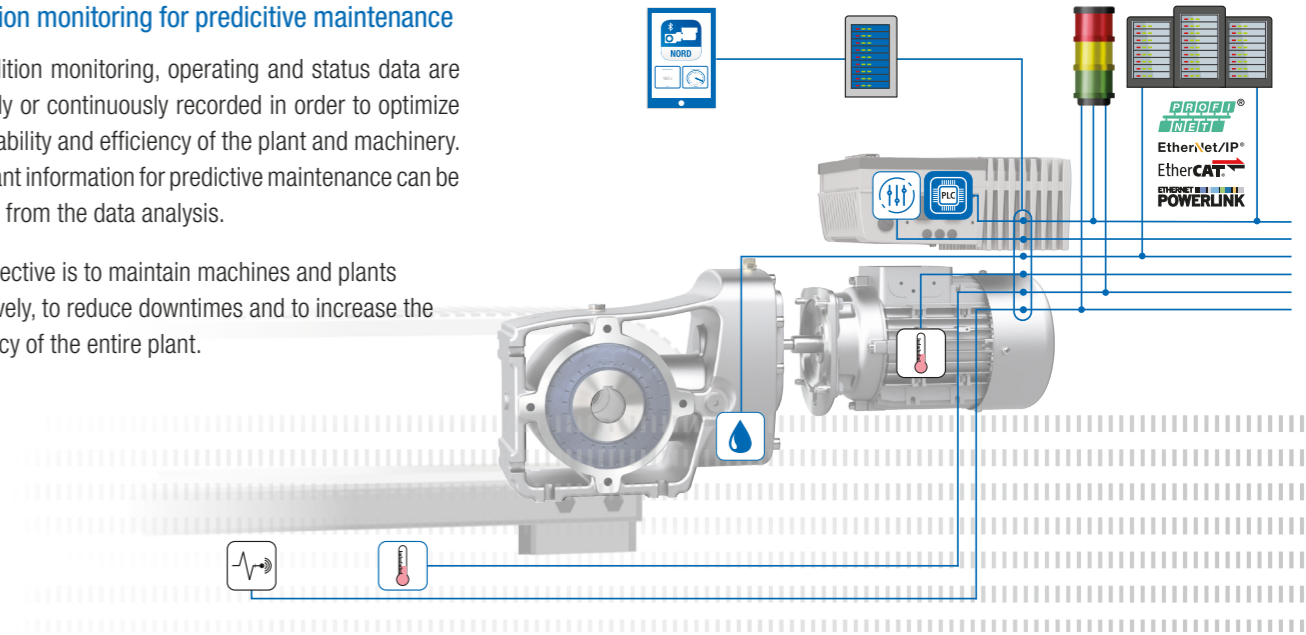
3 x AC 400V



Condition monitoring for predictive maintenance

In condition monitoring, operating and status data are regularly or continuously recorded in order to optimize 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
 - ▶ Connection of customized sensors (analog / digital)
- System temperature sensor**
 - ▶ PT1000-based motor temperature sensor
 - ▶ Ambient or system temperature
- Oil change**
 - ▶ Determination of the optimal time for oil change on the basis of virtual oil temperature
 - ▶ The algorithm is executed in the internal PLC
- Drive parameters**
 - ▶ Readout of drive system parameters
 - ▶ Basis for virtual sensors
- Integrated PLC**
 - ▶ Pre-processing of drive-specific parameters and sensors related to the drive
 - ▶ Evaluation of drive conditions
- Beacon signal**
 - ▶ Local display of drive conditions
 - ▶ 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 the collected condition monitoring data with the process data

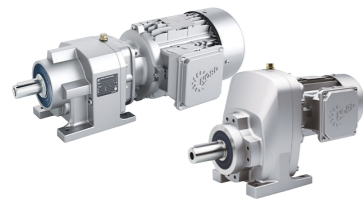
UNIVERSAL SMI worm gear units (Catalog G1035)



- ✓ Smooth-surfaces
- ✓ Universal mounting options
- ✓ Life-long lubrication
- ✓ NEMA and IEC versions

Sizes: 5
 Performance: 0.50 – 5 HP (0,12 – 4 kW)
 Torque range: 186 – 3,780 lb-in (21 – 427 Nm)
 Ratio: 5.00 – 3,000:1

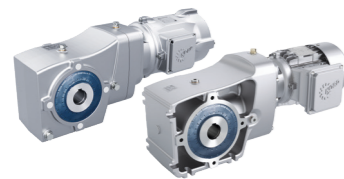
NORDBLOC.1® 1- and 2-stage helical gear units (Catalog G1013)



- ✓ Foot or flange mounted
- ✓ Die-cast aluminium or cast-iron housing
- ✓ UNICASE housing
- ✓ Industry standard dimensions

Sizes: 16
 Performance: 0.16 – 60 HP (0,12 – 37 kW)
 Torque range: Up to 29,205 lb-in (30 – 3300 Nm)
 Ratio: 1.07 – 456.77:1

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



- ✓ Foot, flange, or shaft mounted
- ✓ Hollow or solid shaft
- ✓ Aluminium housing
- ✓ Solid or open housing designs

Sizes: 6
 Performance: 0.16 – 10 HP (0,12 – 9,2 kW)
 Torque range: Up to 5,800 lb-in (50 – 660 Nm)
 Ratio: 3.03 – 70:1

DuoDrive integrated gear units (Catalog M5000)



- ✓ Integrated gear unit and motor
- ✓ Extremely high system efficiency
- ✓ Compact, space saving design
- ✓ High power density

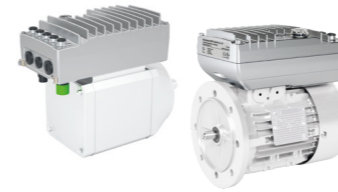
Size: 1
 Power: 0.5 – 2 HP (0,35 – 3 kW)
 Torque: Up to 700 lb-in (80 Nm)
 Ratio: 3.24:1 – 16.2:1

Motors (Catalog M7000, M5000)



- ✓ IE3 Motors from 0.16 HP (0,12 kW), Size 63
- ✓ IE4 synchronous and asynchronous motors
- ✓ IE5+ synchronous smooth body and ventilated motors (Size 71, 90)

NORDAC® ON/ON+ SK 300P variable frequency drives (Catalog E3000)



- ✓ Wall or motor mounted
- ✓ Ethernet communication
- ✓ Compact design
- ✓ Plug-and Play solution

Sizes: 3
 Voltage: 3~ 400 V
 Power: 0.25 – 1 HP (0,37 – 0,95 kW)

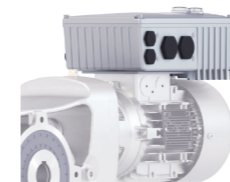
NORDAC® FLEX SK 200E variable frequency drives (Catalog E3000)



- ✓ Plug-in storage module (EEPROM)
- ✓ 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 range: 0.33 – 30 HP (0,25 – 22 kW)

NORDAC® START SK 135E bi-directional motor starters (Catalog 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 range: 0.16 – 4 HP or up to 10 HP (0,25 – 2,2 kW)

NORDAC® PRO SK 500P variable frequency drives (Catalog 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

Size: 5
 Voltage: 1~ 200 – 240 V, 3~ 380 – 480 V
 Power: 0.33 – 30 HP (0,25 – 22 kW)

NORDAC® PRO SK 500E variable frequency drives (Catalog E3000)

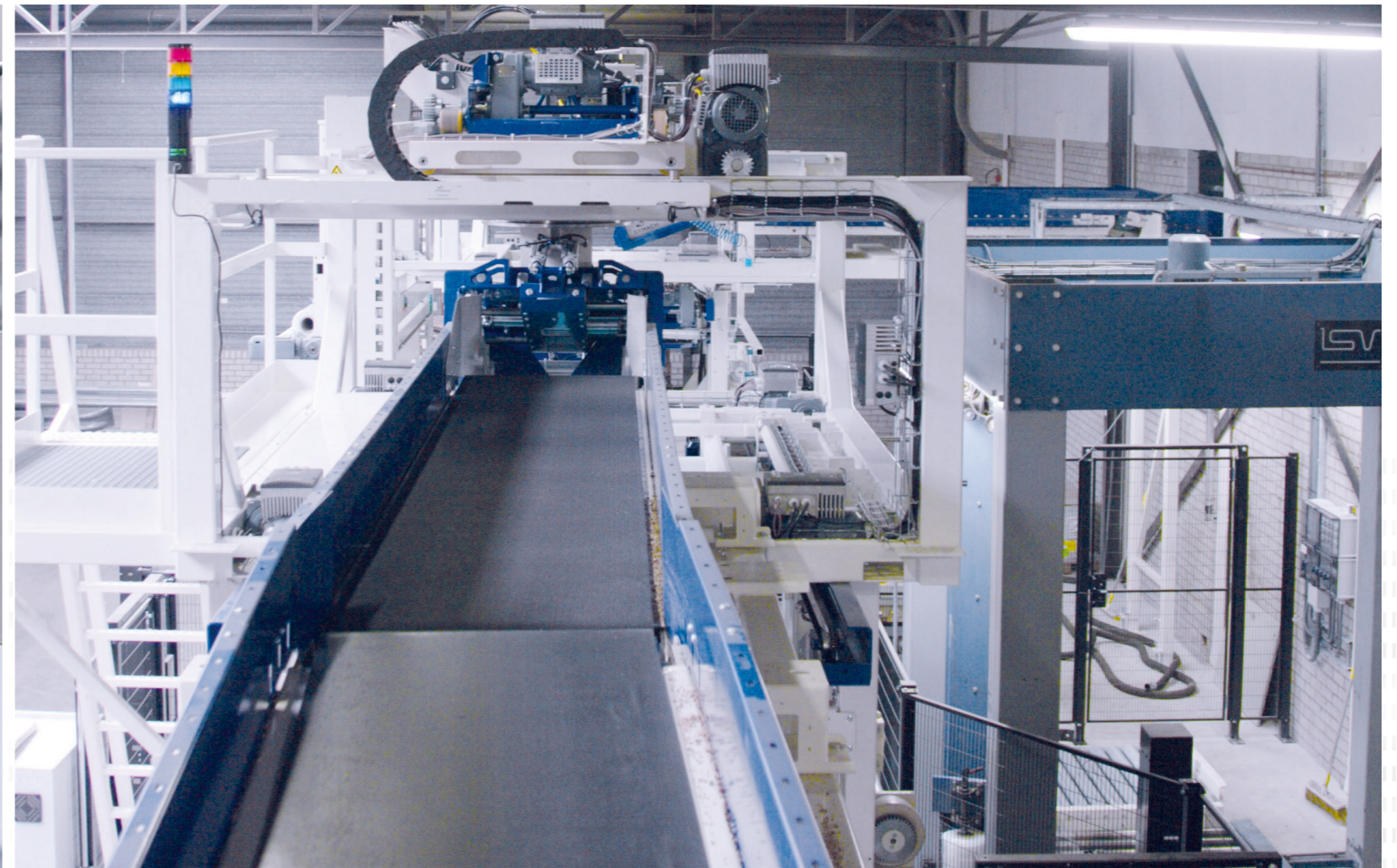


- ✓ Stand-alone operation
- ✓ 4 parameter sets

Sizes: 11
 Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 480 V
 Power range: 0.33 – 200 HP (0,25 – 160 kW)



WILD GOOSE Bottle filling line



SYMACH Palletizing

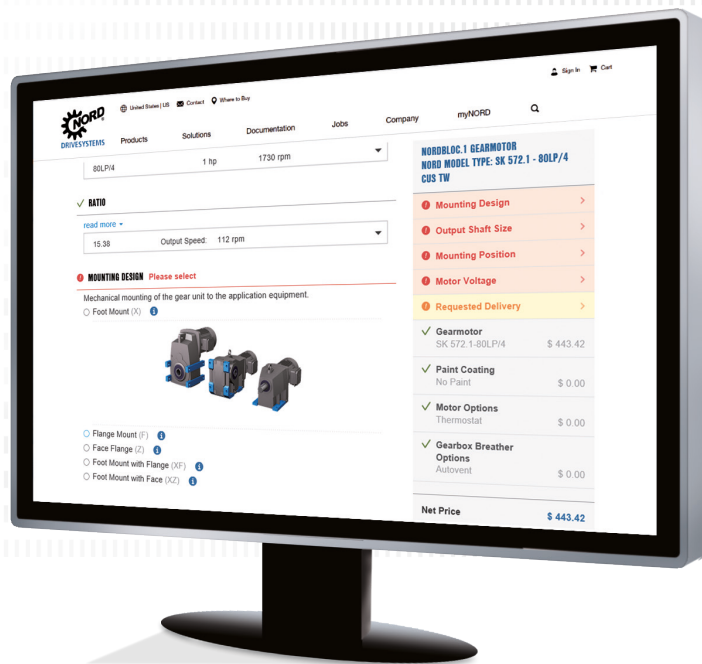
The implementation of the new drive concept was carried out step by step.

“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*

Ordering is Easy With myNORD Online Tools!

- ▶ Obtain drawing files direct from quote configuration
- ▶ Effortlessly select & configure customized drive solutions
- ▶ Create quotes with account-specific net pricing
- ▶ Order-specific documentation
- ▶ 24/7/365 order tracking
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