

INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



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**DRIVE SOLUTIONS FOR
INTRALOGISTICS AND
WAREHOUSING**



NORD DRIVE SOLUTIONS FOR THE INTRALOGISTICS INDUSTRY



NORD DRIVESYSTEMS Group

Headquarters and technology centre in Bargteheide, near Hamburg



Innovative drive solutions for more than 100 branches of industry

Mechanical products	Electrical products	Electronic products
Gear units	Motors	Frequency inverters, motor starters and field distributors

7 production locations with cutting-edge technology produce gear units, motors, inverters etc. for complete drive systems from a single source.



Gear unit production



Motor production



Inverter production

Subsidiaries and sales partners in 98 countries on 5 continents provide local stocks, assembly centres, technical support and customer service.



The map shown above is for information only and does not claim to be created for or applicable to any legal purpose. For this reason, we do not assume any liability for legality, correctness and completeness.

More than 4,000 employees throughout the world create customised solutions.

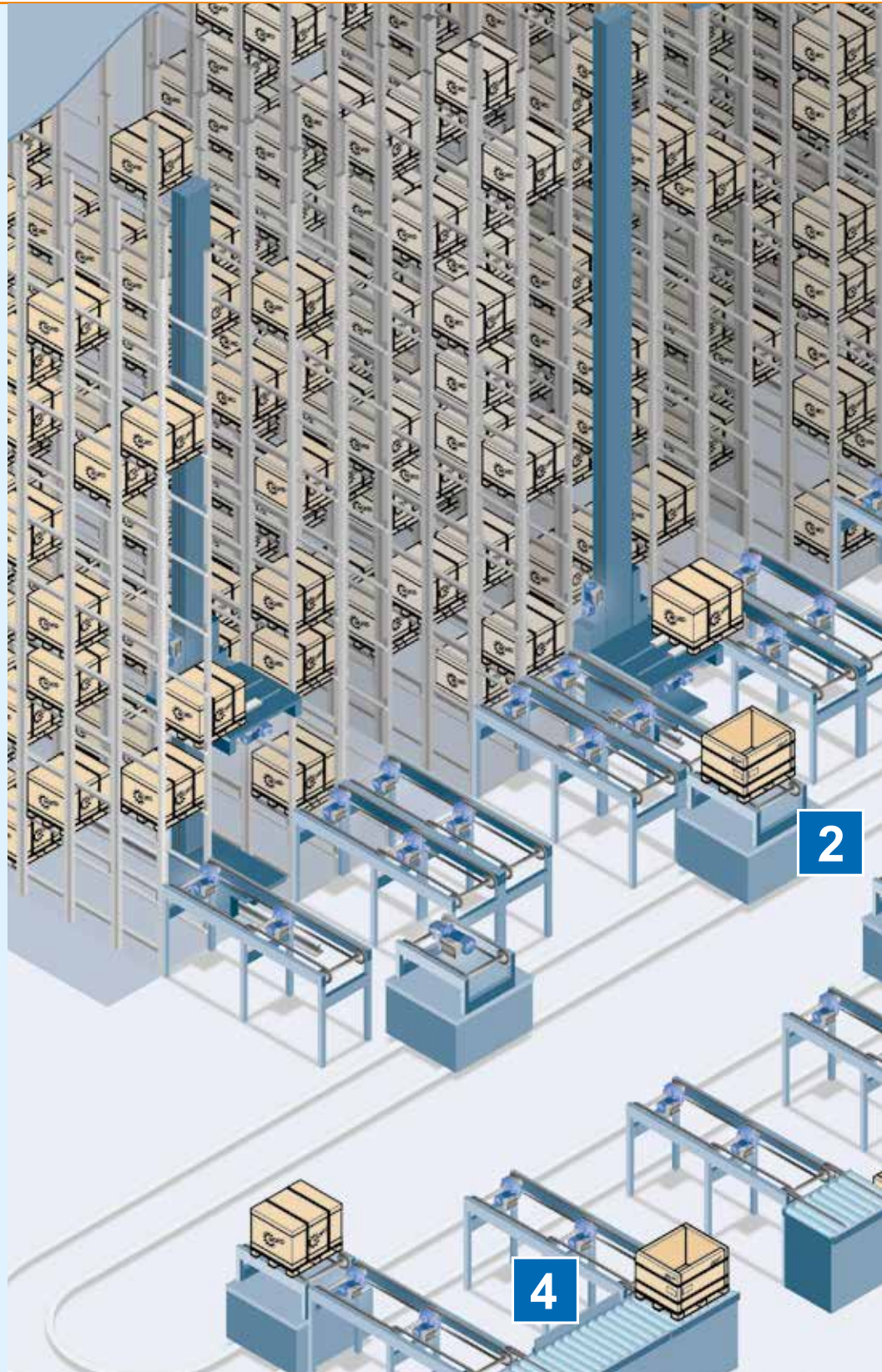


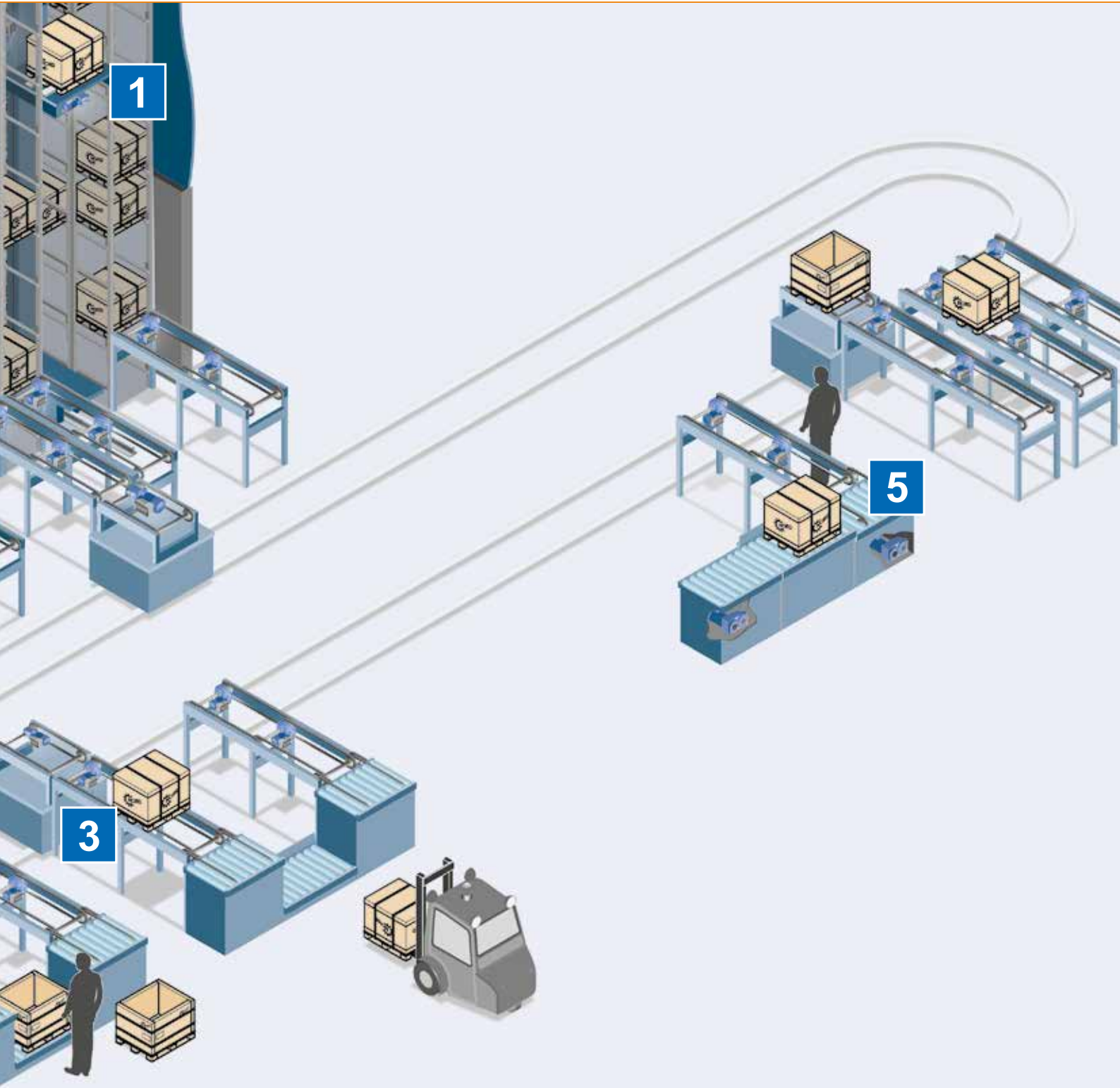
DRIVE SOLUTIONS FOR AUTOMATED WAREHOUSE SYSTEMS

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 many industry sectors.

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 intralogistics industry
- Wide range of products with high quality standards
- Great reliability, economy and service life
- Recognised product quality compliant with international standards





APPLICATIONS IN INTRALOGISTICS AND WAREHOUSING SYSTEMS

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

We know your business and precisely understand your requirements. We prefer long-term 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 supports you with:

DESIGN

- myNORD
- Reduced number of variants
- Project design/optimisation
- Drive system design
- Application solutions
- Green solutions
- CAD drawings

COMMISSIONING

- Plug-and-Play
- Support
- Training
- Documentation
- Smart commissioning

SERVICE

- Predictive maintenance (PLC function)
- Spare parts, express shipping
- Global presence
- 24/7 support

NORD DRIVESYSTEMS is your dependable worldwide project partner with subsidiaries and sales partners in 98 countries on 5 continents.



1 Storage and retrieval device

Automated storage systems offer high storage density. Therefore, agile stacker cranes are essential for rapid retrieval and storage of goods. To achieve a high degree of mobility and extraordinary storage and retrieval throughput, these systems depend on dynamic and precise drives.

- Dynamic
- Easy to service and maintain
- Precise positioning
- Energy-efficient

2 Automated guided vehicle

Automated guided vehicles move loads from a conveyor belt to a defined location within the warehouse. As soon as a transport vehicle stops at its destination and aligns with a stacker crane, NORD drives ensure that the loads are positioned precisely for rapid and smooth transfer.

- Compact design
- Easy to service and maintain
- Precise positioning
- With integrated PLC function

3 Chain conveyors

Chain conveyors are mainly used to transport heavy loads and industrial containers. NORD DRIVESYSTEMS supplies the corresponding robust drive solutions with repeatedly proven long service life and reliability – both in single and double line configurations.

- Compact design
- Easy to service and maintain
- Reduced number of variants
- High overload capacity
- Standardised

4 Roller and belt conveyors

Roller and belt conveyors are versatile transport systems for handling light to moderately heavy packing units. NORD drives can be individually controlled to intelligently adjust the speed on the line – for the precise, dynamic control of distances and accumulation of packing units.

- Compact design
- Easy to service and maintain
- Reduced number of variants
- High overload capacity
- Standardised

5 Corner transfer conveyor

A corner transfer conveyor is a combination roller and chain conveyor that enables a 90° change of direction. By lifting or lowering the chain, chain conveyors receive or transfer unit loads.

- Compact design
- Easy to service and maintain
- High overload capacity

EFFICIENT, RELIABLE & PROVEN DRIVE SOLUTIONS FOR INTRALOGISTICS



Efficient

NORD drive solutions are environmentally friendly and help to minimise CO₂ emissions.

- NORD motors with low mass inertia are designed for inverter operation and comply with the latest international energy requirements.
- NORD frequency inverters ensure efficient operation, improved process control, and optimised motor performance.
- Easy to service and maintain, NORD drives reduce standstill times and thus contribute to an increased efficiency and availability of the entire system.

Reliable

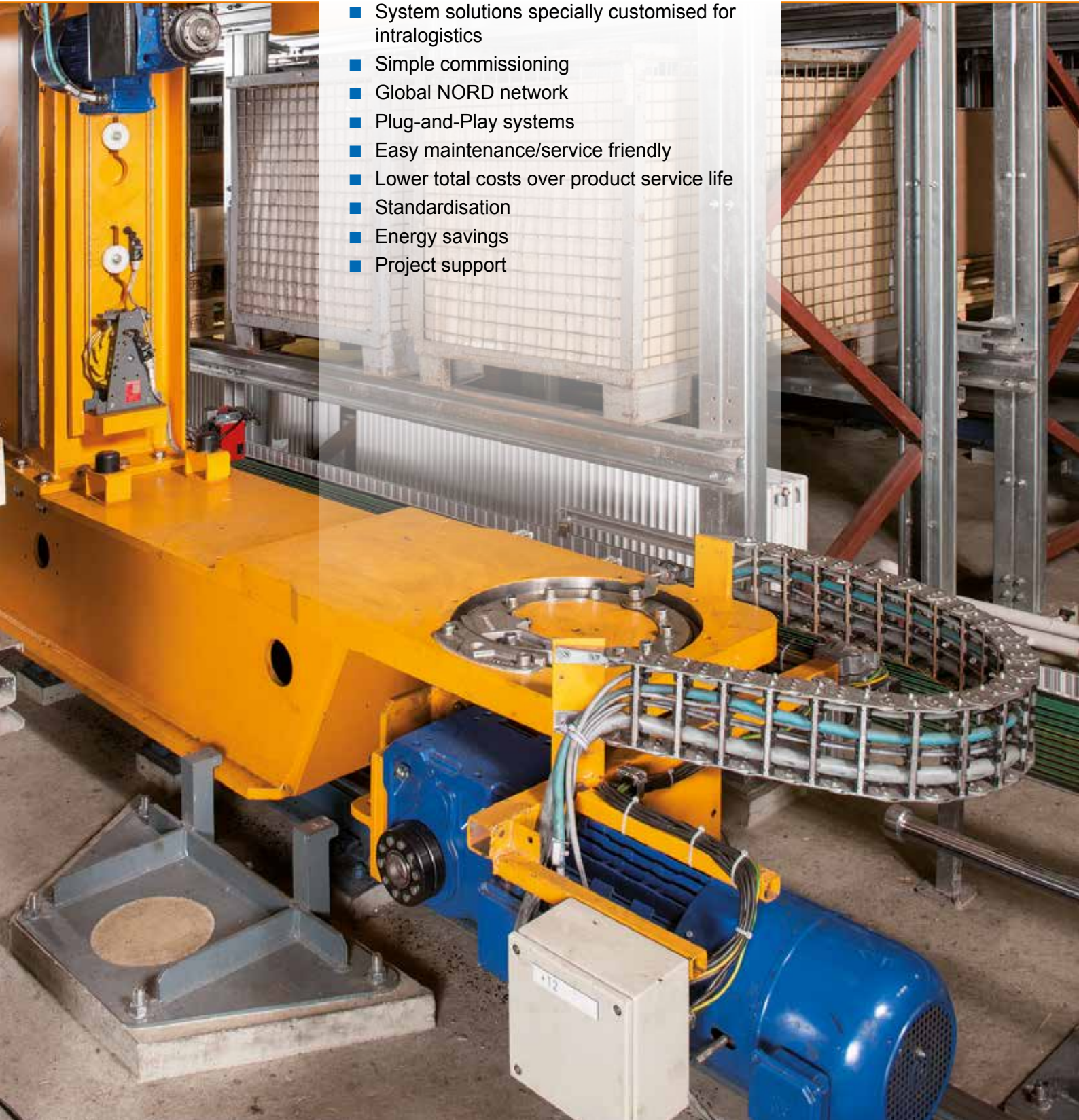
It is vital to prevent breakdowns of intralogistics systems. For this reason, reliability is our main focus when developing drive solutions. All of our system components are precisely matched to each other and ensure smooth operation.

- UNICASE gear units ensure precise positioning of bearings and shafts.
- AUTOVENT™ ensures a leak free design.
- Precisely machined gear wheels with minimum wear are used.
- The gear units are extraordinarily robust, run very quietly and have a particularly long service life.
- NORD inverters electronically protect the drive system and can visualise the operating data.

Tried-and-tested

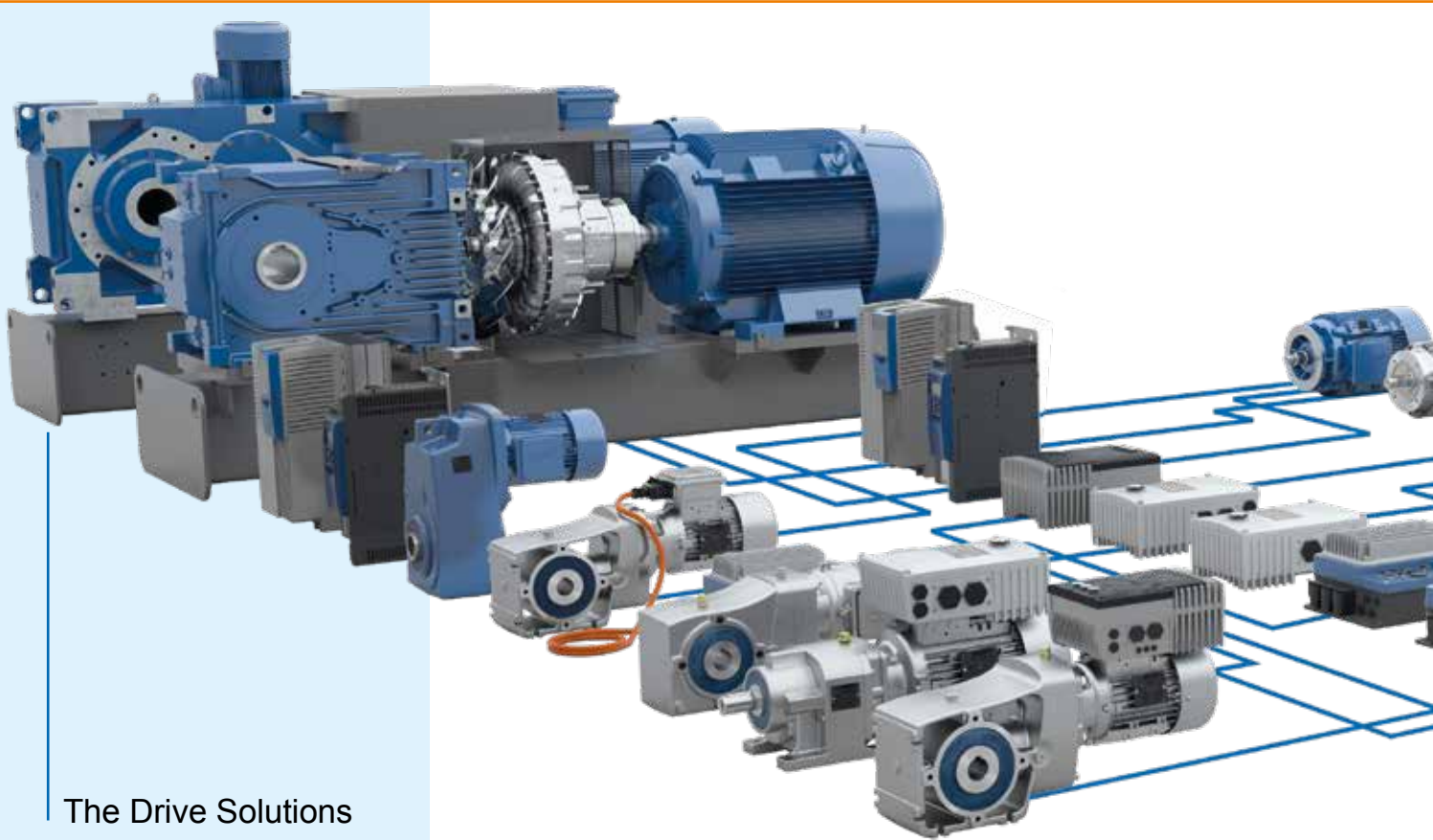
The reliability and cost-effectiveness of electronically controlled NORD conveyor drives have proven themselves in intralogistics throughout the world. The systems combine high flexibility and tiered functional equipment with convenient operability. NORD drives ensure particularly high conveyance speeds that are more and more often required due to increased safety measures.

- Mechatronic drive solutions from NORD DRIVESYSTEMS are based on 2-stage bevel gear motors featuring low weights and high efficiencies.
- In combination with wall-mounted or motor-mounted frequency inverters, they form efficient drive systems.
NORD DRIVESYSTEMS also supplies the required cable connectors and interfaces to a variety of bus systems as well as the respective software.



- System solutions specially customised for intralogistics
- Simple commissioning
- Global NORD network
- Plug-and-Play systems
- Easy maintenance/service friendly
- Lower total costs over product service life
- Standardisation
- Energy savings
- Project support

COMPLETE DRIVE SOLUTIONS FROM A SINGLE SOURCE



The Drive Solutions



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 IE4 keep the drive systems moving in any operating situation.

- Designed in compliance with international standards
- High overload capacity
- Energy-efficient

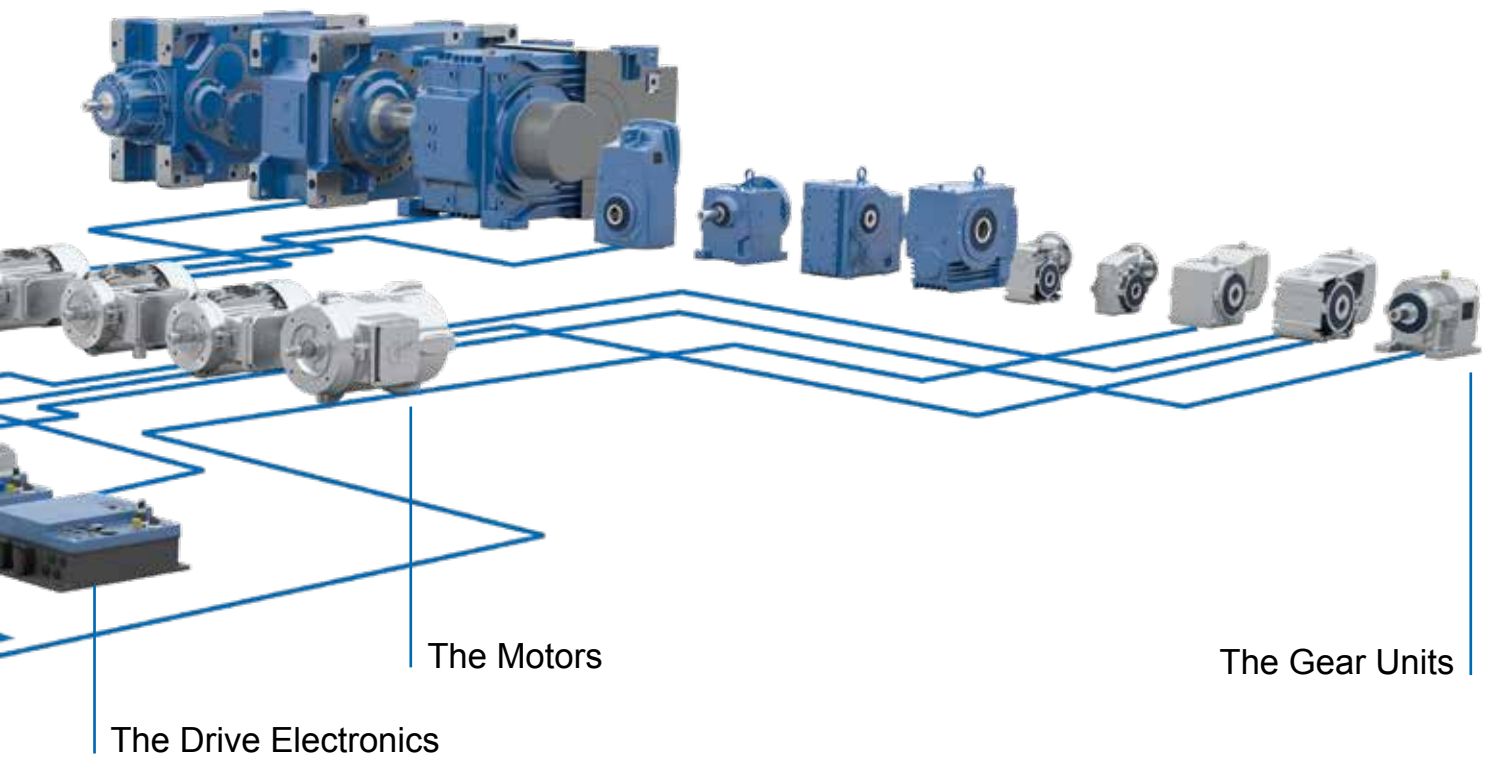


Intelligent drive electronics provide exactly the control facilities you need.

- Scalable functions
- Full field bus connection facilities
- Wide power range
- PLC integrated at no extra cost



An optimum and individual drive solution can therefore 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.



Extensive communication options enable access to the drive units from all levels, providing a wide range of adjustments.

- All common bus systems
- Quick and simple commissioning with plug-in control box or using NORDCON software
- Convenient handheld console for local operation
- Optionally with intralogistics options



Switches and buttons are located directly on the drive units and enable direct starting, stopping or mode changes.

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



All interfaces designed for ease of operation. The drives can be easily configured and installed.

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

NORD DRIVE SOLUTIONS FOR THE INTRALOGISTICS INDUSTRY



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



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

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

SK 180E NORDAC *BASE* frequency inverter (Catalogue E3000)



- ✓ Stand-alone operation
- ✓ 4 parameter sets
- ✓ Sensorless current vector control (ISD control)
- ✓ Integrated PLC

Voltage	1~ 110 – 120 V
	1~ 200 – 240 V
	3~ 200 – 240 V
	3~ 380 – 500 V
Power	0.25 – 2.2 kW

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



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

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

SK 250E NORDAC *LINK* field distributor (Catalogue E3000)



- ✓ Frequency inverter or motor starter
- ✓ All connections in plug-in version for easy commissioning and maintenance
- ✓ PLC functionality for drive-integrated functions

Voltage	3~ 380 – 500 V
Power	Frequency inverters 0.75 – 7.5 kW
	Motor starters 0.12 – 3 kW

UNICASE helical gear units (Catalogue G1000)



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

Power	0.12 – 160 kW
Torque	10 – 26,000 Nm
Speed ratio	1.35:1 – 14,340.31:1

UNICASE parallel shaft gear units (Catalogue G1000)



- ✓ Foot-, flange- or hollow shaft-mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ UNICASE housing

Power	0.12 – 200 kW
Torque	110 – 100,000 Nm
Speed ratio	4.03:1 – 15.685,03:1

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



- ✓ Foot-, flange- or shaft-mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE cast-iron housing

Power	0.12 – 9.2 kW
Torque	50 – 660 Nm
Speed ratio	3.03:1 – 70:1

UNIVERSAL SI worm gear units (Catalogue G1035)



- ✓ Modular
- ✓ Universal mounting options
- ✓ Life-long lubrication

Power	0.12 – 4.0 kW
Torque	21 – 427 Nm
Speed ratio	5.00:1 – 3,000.00:1

Motors



IE3 motors from 0.12 kW (size 63) IE4 synchronous and asynchronous motors



International energy efficiency standards

- EU: IE1 – IE4 as per IEC 60034-30
- US: ee labelling as per EISA 2007 (Dept. of Energy)
- CA: CSA energy verified as per EER 2010
- CN: CEL as per GB 18613
- KR: KEL as per REELS 2010
- BR: Alto Rendimento as per Decreto nº 4.508
- AU: MEPS as per AS/NZS 1359.5



In combination with motor and motor control system in accordance with Ecodesign directive EN50598

THE IDEAL SOLUTION FOR INTRALOGISTICS



LogiDrive



- High-efficiency 2-stage bevel gear unit
- IE4 PMSM synchronous motor
- Power plug connector
- M12 slots
- Incremental encoders
- Pre-assembled cables
- High potential overload capacity
- Standardised hollow shaft diameter

The LogiDrive solution from NORD DRIVESYSTEMS reduces planning and commissioning effort:

- NORD inverters for intralogistics and airport applications can control both synchronous and asynchronous motors.
- Simple planning with identical housing dimensions for synchronous and asynchronous motors

COMPARISON		
Motor size	IE3 asynchronous	IE4 synchronous
Size 80	0.75 kW	1.1 / 1.5 kW
Size 90	1.1 / 1.5 kW	1.5 / 2.2 / 3.0 kW
Size 100	2.2 / 3.0 kW	3.0 / 4.0 / 5.5 kW

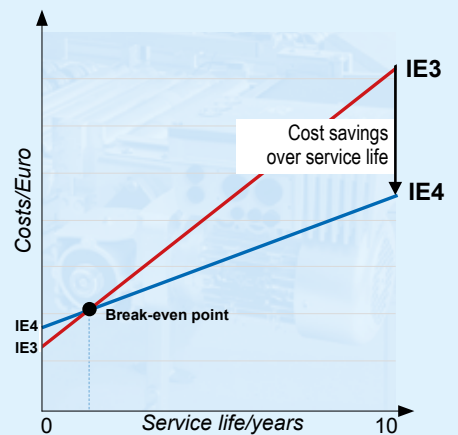
Use of IE4 synchronous motors minimises overall costs during service life. NORD IE4 motors achieve considerably greater efficiency and a fast return on investment (ROI).



Motor-mounted version

Total Cost of Ownership (TCO)

IE4 synchronous motors reveal their full potential in applications with a partial load range and low speed ranges. By using IE4 synchronous motors, airports can achieve significant cost reductions.



IE4 synchronous motors achieve high cost reductions over their entire service life and a quick break-even point with just a small additional investment.




means energy efficiency:

- By compliance with the most stringent efficiency regulations
- Considerably reduces TCO
- High efficiency, even in partial load ranges and at low speeds thanks to PMSM technology

Efficiency under partial load and at partial speed

◀ IE3

◀ IE4



Automated guided vehicles, stacker cranes or any other conveyor systems: NORD DRIVESYSTEMS offers the ideal drive solution for every application.

Headquarters:

Getriebbau NORD GmbH & Co. KG
Getriebbau-Nord-Str. 1, 22941 Bargteheide, Germany
T +49 4532 2890, F +49 4532 289 2253
info@nord.com

Member of the NORD DRIVESYSTEMS Group

