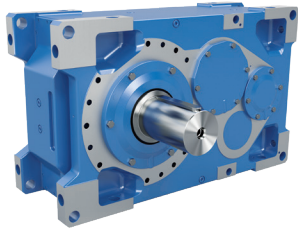


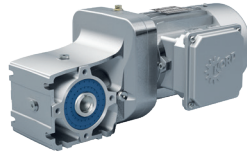
**Drive solutions for  
intralogistics and warehousing**  
Complete drive systems from a single source



# NORD DRIVESYSTEMS Group



Industrial Gear Units



Geared Motors



Frequency Inverters and Motor Starters

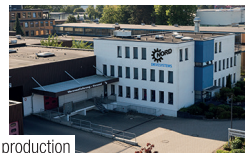
- ▶ Headquarters and technology centre in Bargteheide near Hamburg.
- ▶ Innovative drive solutions for more than 100 branches of industry.
- ▶ 7 production locations with cutting edge technology produce gear units, motors, VFDs, and more to provide complete drive systems from a single source.
- ▶ NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries, provide local inventory, assembly, technical support, and industry-leading customer service.
- ▶ More than 4,100 employees throughout the world create customized solutions.



Headquarters in Bargteheide



Gear unit production



Inverter production



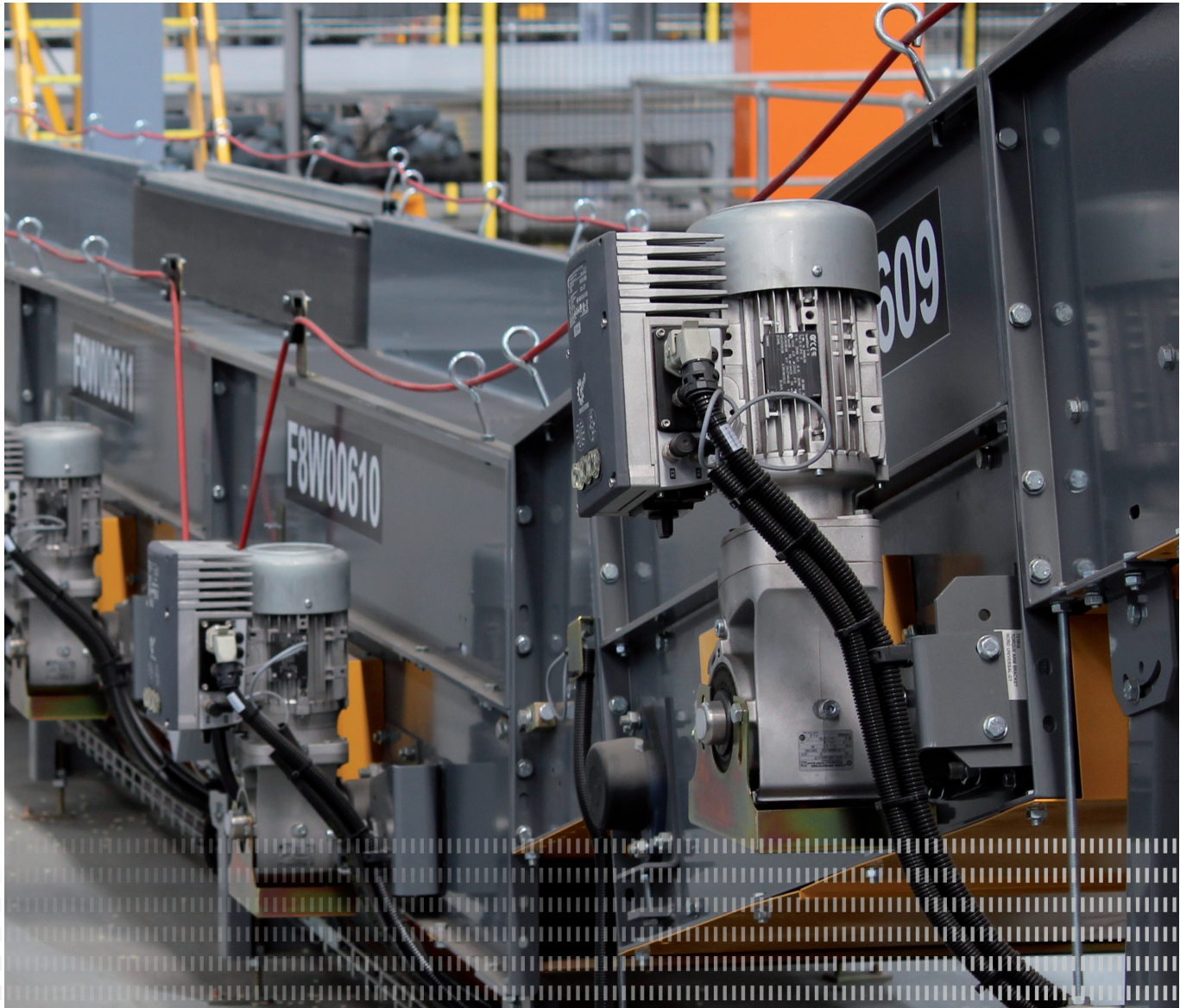
Motor production



Production and assembly



Motor assembly



### Integrated solutions for the special requirements of the logistics industry

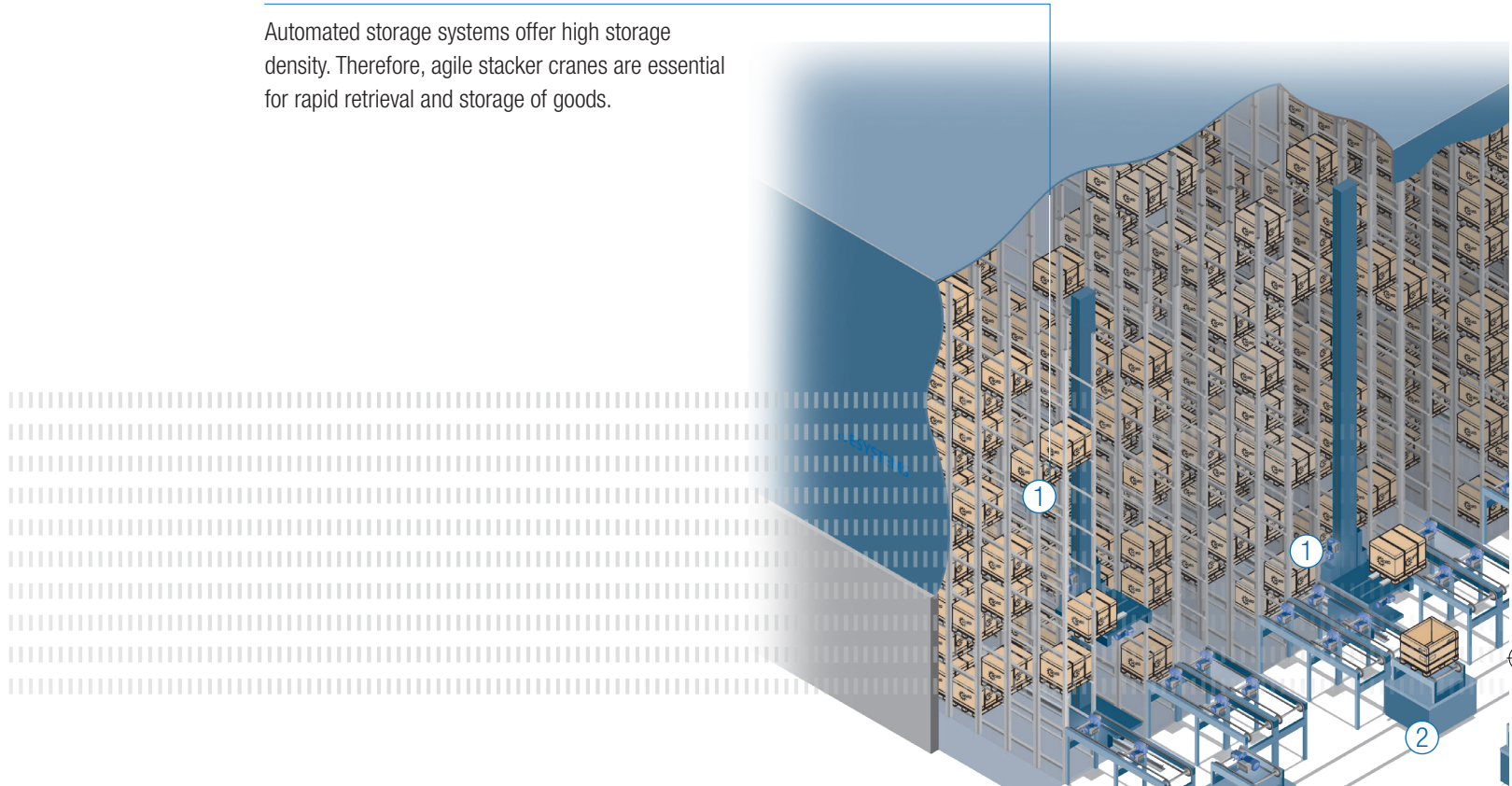
- ▶ Simple commissioning
- ▶ Easy maintenance and safe, reliable operation
- ▶ Lower total cost of ownership
- ▶ Modular design
- ▶ Energy savings
- ▶ Project and product support
- ▶ Global network



# Drive solutions for intralogistics and warehousing

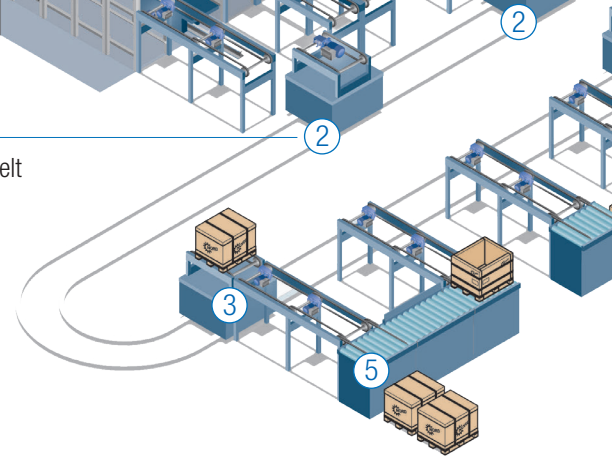
## 1 Storage and retrieval device

Automated storage systems offer high storage density. Therefore, agile stacker cranes are essential for rapid retrieval and storage of goods.



## 2 Automated guided vehicle

Automated guided vehicles move loads from a conveyor belt to a defined location within the warehouse.



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
- ▶ Recognized product quality compliant with international standards



### 3 Chain conveyors

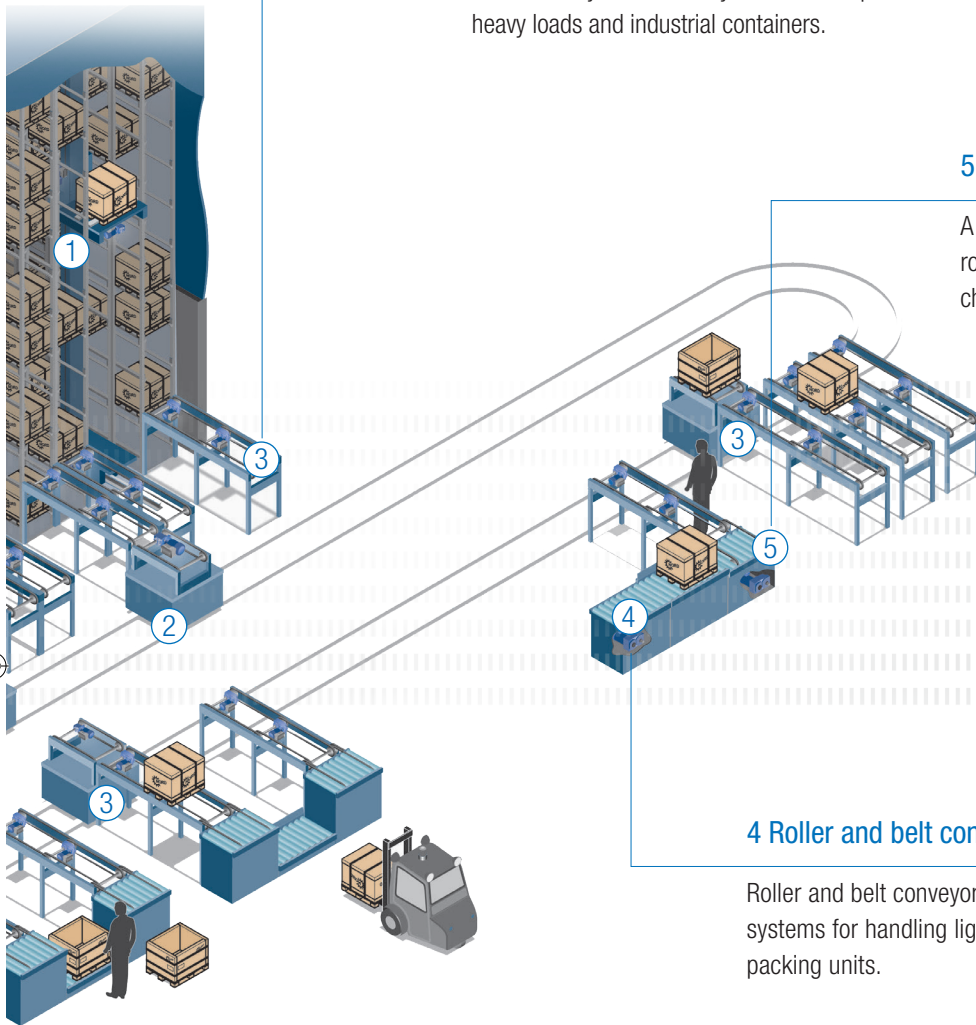
Chain conveyors are mainly used to transport heavy loads and industrial containers.

### 5 Corner transfer conveyor

A corner transfer conveyor is a combination roller and chain conveyor that enables a 90° change of direction.

### 4 Roller and belt conveyors

Roller and belt conveyors are versatile transport systems for handling light to moderately heavy packing units.



#### We support 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

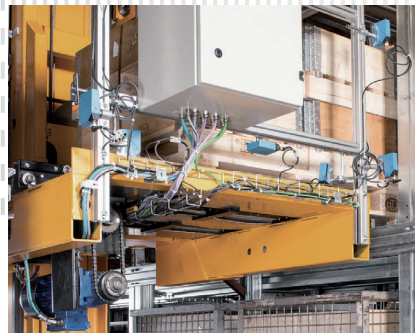


# Drive solutions for intralogistics and warehousing

NORD DRIVESYSTEMS develops and manufactures scalable drive solutions for all areas of the logistics industry.

NORD DRIVESYSTEMS developed as early as 1981 the revolutionary block housing construction. From a single piece a closed gearbox housing is manufactured which combines all transmission elements.

- ▶ One housing block in which all bearings are integrated
- ▶ Complete machining in one clamping
- ▶ High output torques
- ▶ High axial and radial load capacity
- ▶ Highest operational reliability
- ▶ Long service life
- ▶ Low-noise operation



## 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.

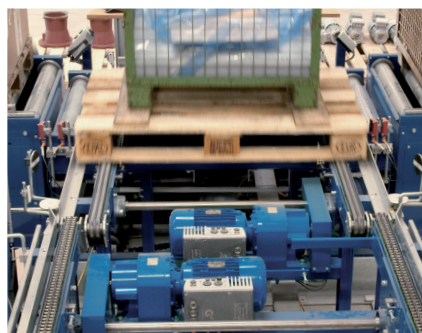
- ▶ Dynamic
- ▶ Easy to service and maintain
- ▶ Precise positioning
- ▶ Energy-efficient



## 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



### Chain conveyors

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

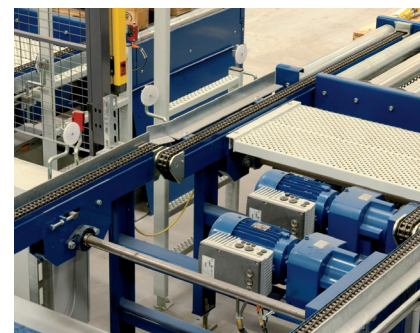
- ▶ Compact design
- ▶ Easy to service and maintain
- ▶ Reduced number of variants
- ▶ High overload capacity
- ▶ Standardized



### 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
- ▶ Standardized



### Corner transfer conveyor

A corner transfer conveyor is a combination of a 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



# Drive solutions for intralogistics and warehousing

Efficient, reliable and proven drive solutions from a single source



## Efficient

NORD drive solutions are environmentally friendly and help to minimize CO<sub>2</sub> 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 optimized 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 visualize 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 also supplies the required cable connectors and interfaces to a variety of bus systems as well as the respective software.





# LogiDrive®

## The ideal solution for intralogistics technology

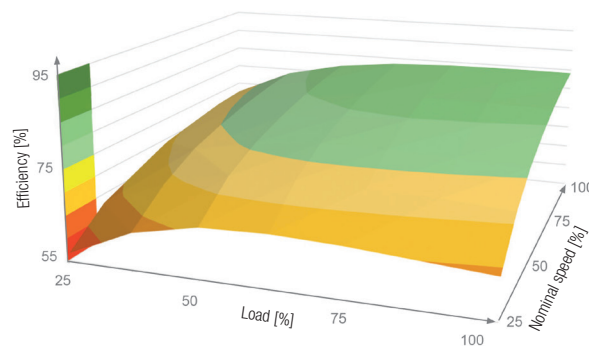
- ▶ Highly efficient 2-stage bevel gear unit
- ▶ IE5+ PMSM synchronous motor
- ▶ Power plug connector
- ▶ Signal connector
- ▶ Incremental encoder
- ▶ Pre-assembled cable
- ▶ High overload capacity







## NORDAC LINK FDS\* SK 250E \* Field Distribution System

- ▶ Internal or external braking resistor
- ▶ External 24V supply for the control board, thereby the drive units can be accessed via the bus even without the 400V AC mains voltage.
- ▶ Decentralized installation
- ▶ Plug-in inverter
- ▶ Plug-in EEPROM – data can be transferred if servicing is required.

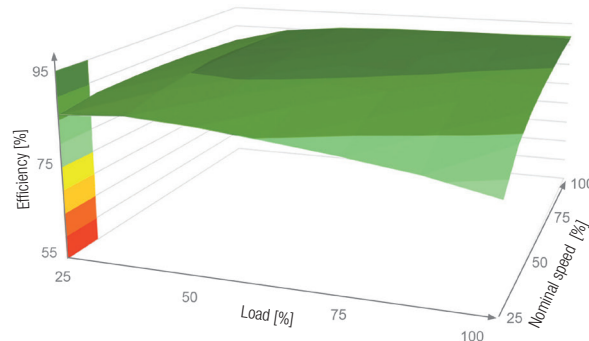
## IE3 drive units (Asynchronous technology)



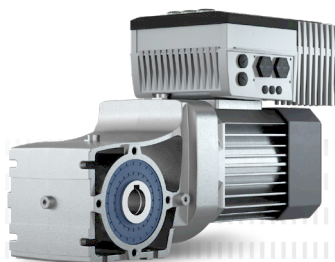
## Wall mounted frequency inverters

Frequency inverters	Motors	mMotor power [HP]
NORDAC LINK 	PMSM – IE5+ 	00.47 – 5.36
NORDAC FLEX 	PMSM – IE5+ 	0.47 – 5.36

## IE5+ drive units (PMSM technology)

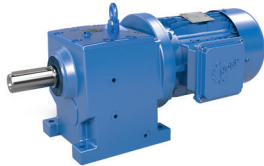


Use of IE5+ synchronous motors minimizes overall costs during service life. NORD IE5+ motors achieve considerably greater efficiency and a fast return on investment (ROI).



# Drive solutions for intralogistics and warehousing

## UNICASE™ Helical In-Line Gear Units (Catalogue G1000)



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

Sizes: 11  
 Performance: 0.16 – 215 HP  
 Torque range: 89 – 230,119 lb-inch  
 Speed ratio: 1.35 – 14,340.31:1

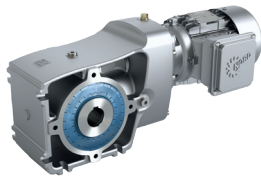
## UNICASE™ CLINCHER™ Parallel Shaft Gear Units (Catalogue G1000)



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

Sizes: 15  
 Performance: 0.16 – 268 HP  
 Torque range: 974 – 885,075 lb-inch  
 Speed ratio: 4.03 – 15,685.03:1

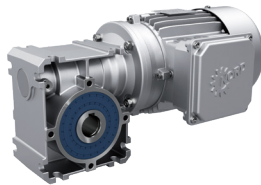
## NORDBLOC.1® Two-Stage Bevel Gear Units (Catalogue G1014)



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

Sizes: 6  
 Performance: 0.16 – 12,5 HP  
 Torque range: 443 – 5,842 lb-inch  
 Speed ratio: 3.03 – 70:1

## FLEXBLOC® Worm Gear Units (Catalogue G1035)



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

Sizes: 5  
 Performance: 0.16 – 5.5 HP  
 Torque range: 186 – 3,780 lb-inch  
 Speed ratio: 5.00 – 3,000:1

## Motors (Catalogue M7000)



- ✓ IE3 motors from 0,16 HP (Size 63)
- ✓ IE4 synchronous and asynchronous motors

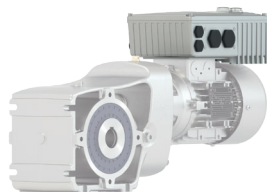


### International energy efficiency standards

- ▶ EU: IE1 – IE4 as per IEC 60034-30
- ▶ US: ee labeling as per EISA 2014 (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



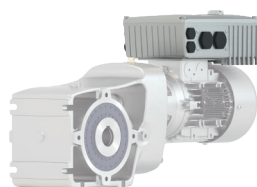
### NORDAC *START* SK 135E Motor Starters (Catalogue E3000)



- ✓ 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 range: 0.16 – 4 HP or up to 10 HP

### NORDAC *BASE* SK 180E Frequency Drives (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 range: 0.33 – 3 HP

### NORDAC *FLEX* SK 200E Frequency Drives (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 range: 0.33 – 30 HP

### NORDAC *LINK* SK 250E Field Distribution Systems (Catalogue E3000)



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

Sizes: 3  
Voltage: 3~ 380 – 500 V  
Power range: frequency inverter 0.75 – 10 HP, motor starter 0.16 – 4 HP





**US**

Headquarters  
NORD Gear Corporation  
800 NORD Drive  
Waunakee, WI 53597  
T: 888 314 6673  
info.us@nord.com

**CA**

NORD Gear Limited  
41 West Drive  
Brampton, ON L6T4A1  
T: 800 668 4378  
info.ca@nord.com

**MX**

NORD DRIVE SYSTEMS SA DE CV  
Av. Industria Textil B.6  
Parque Industrial PYME, Huimilpan  
QRO - Mexico 76950  
T: 52 442 688 7110  
info.mx@nord.com

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