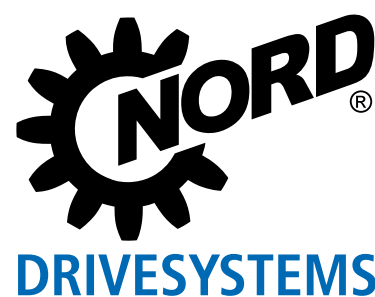


INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



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**DRIVE SOLUTIONS FOR  
CRANE SYSTEMS**



# NORD DRIVE SOLUTIONS FOR THE CRANE 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 3,900 employees throughout the world** create customised solutions.



# DRIVE SOLUTIONS FOR THE CRANE INDUSTRY

**NORD DRIVESYSTEMS is one of the world's leading drive technology companies whose solutions are used in crane systems all over the world.**

**NORD DRIVESYSTEMS provides:**

- Extensive knowledge of applications and technical support
- Complete drive solutions from a single source, consisting of gear units, motors, brakes and frequency inverters
- Strong global presence and service
- Experience from the installation of thousands of drive units in the crane industry
- Wide range of products with high quality standards
- Great reliability, economy and service life
- Recognised product quality compliant with international standards

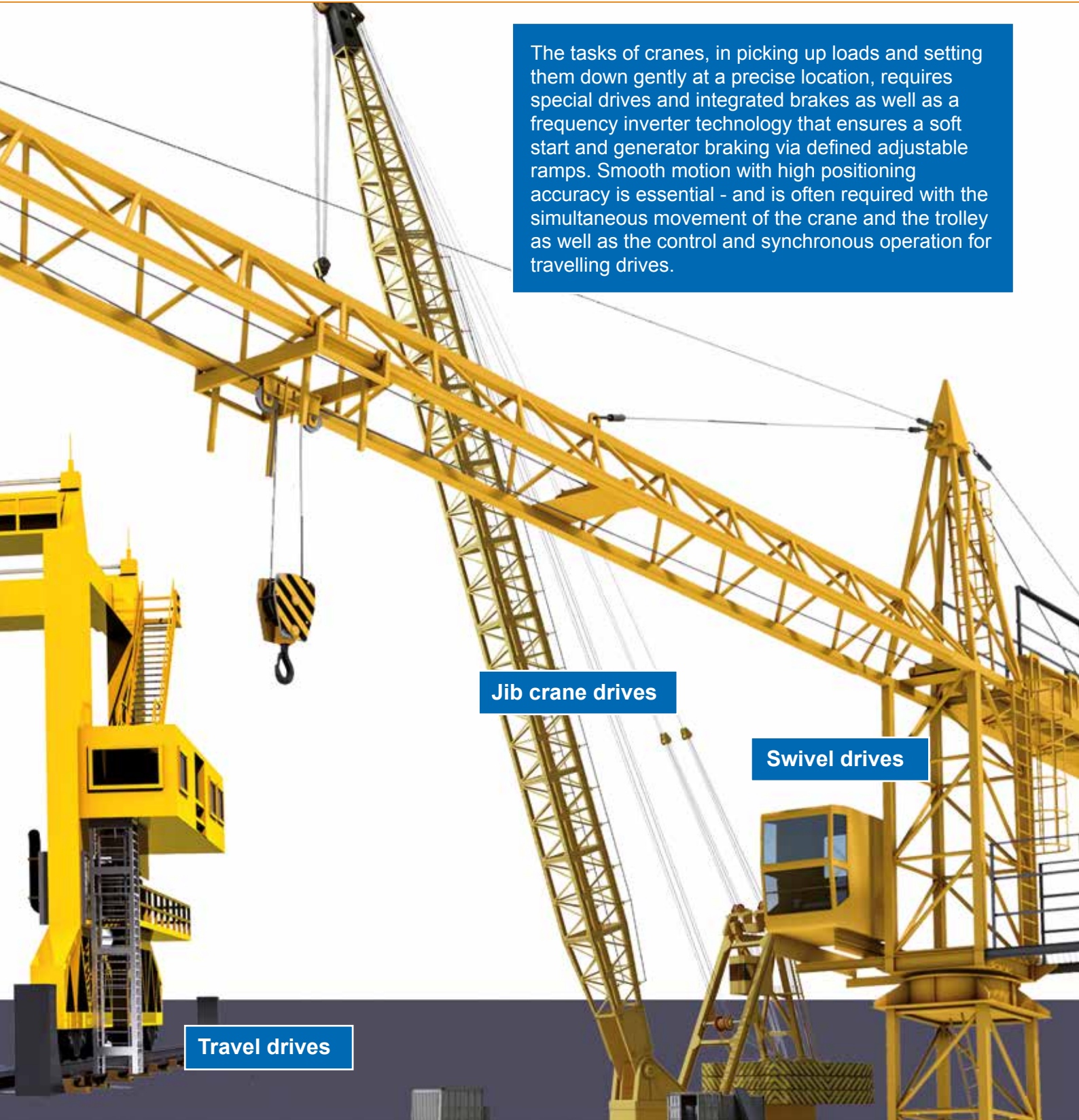
**Drive solutions for:**

- Bridge cranes
- Wall-mounted cranes
- Portal cranes
- Travelling cranes
- Building cranes
- Jib cranes
- Floating cranes
- Container cranes
- Harbour cranes

and many other types of crane.







The tasks of cranes, in picking up loads and setting them down gently at a precise location, requires special drives and integrated brakes as well as a frequency inverter technology that ensures a soft start and generator braking via defined adjustable ramps. Smooth motion with high positioning accuracy is essential - and is often required with the simultaneous movement of the crane and the trolley as well as the control and synchronous operation for travelling drives.

Jib crane drives

Swivel drives

Travel drives

# APPLICATIONS IN CRANE SYSTEMS

With its expertise in drive solutions for crane systems, NORD DRIVESYSTEMS creates economic drive solutions that meet all current and future requirements.

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 Travel drives

- Compact design
- Precise positioning
- Easy to service and maintain
- Energy-efficient
- High overload capacity
- With integrated PLC function
- Brake design for gentle braking
- Paint systems / Sealing systems
- Torque supports decoupled with metal instead of elastomers



## 2 Cross-travel drives

- Compact design
- Precise positioning
- Easy to service and maintain
- Energy-efficient
- High overload capacity
- With integrated PLC function
- Brake design for gentle braking
- Paint systems / Sealing systems
- Torque supports decoupled with metal instead of elastomers



## 3 Lifting gear drives

- Compact design
- Precise positioning
- Easy to service and maintain
- Energy-efficient
- High overload capacity
- With integrated PLC function
- Brake design up to gentle braking
- Paint systems / Sealing systems
- Torque supports decoupled with metal instead of elastomers

# EFFICIENT, RELIABLE AND PROVEN DRIVE SOLUTIONS FOR CRANE SYSTEMS



## Efficient

NORD drive solutions are environmentally friendly and help to minimise 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 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 in crane 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.

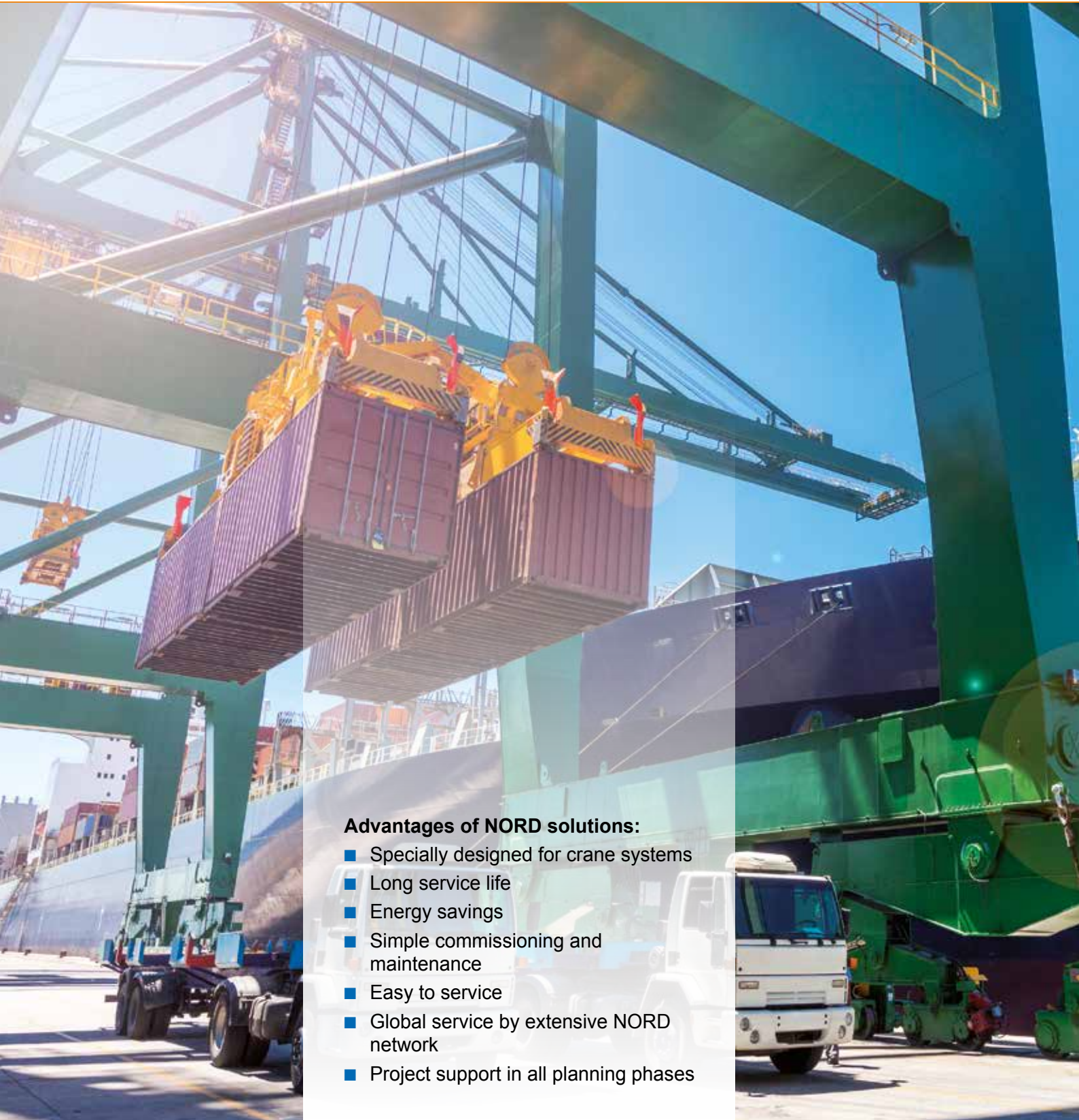
- UNICASE gear units ensure precise positioning of bearings and shafts.
- AUTOVENT™ ensures a leak free design.
- Precisely machined gear wheels with minimum wear are used.
- The gear units are extraordinarily robust, run very quietly and have a particularly long service life.
- NORD inverters electronically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

## Tried-and-tested

NORD special solutions for crane systems have proven themselves throughout the world. The reasons for this include:

- Gear units withstand a wide range of ambient conditions. They function both in dusty environments, as well as in environments with high humidity and heat, and large temperature differences.
- We provide our customers with individual solutions which are tailored to their requirements, so that functionality in all situations is ensured.

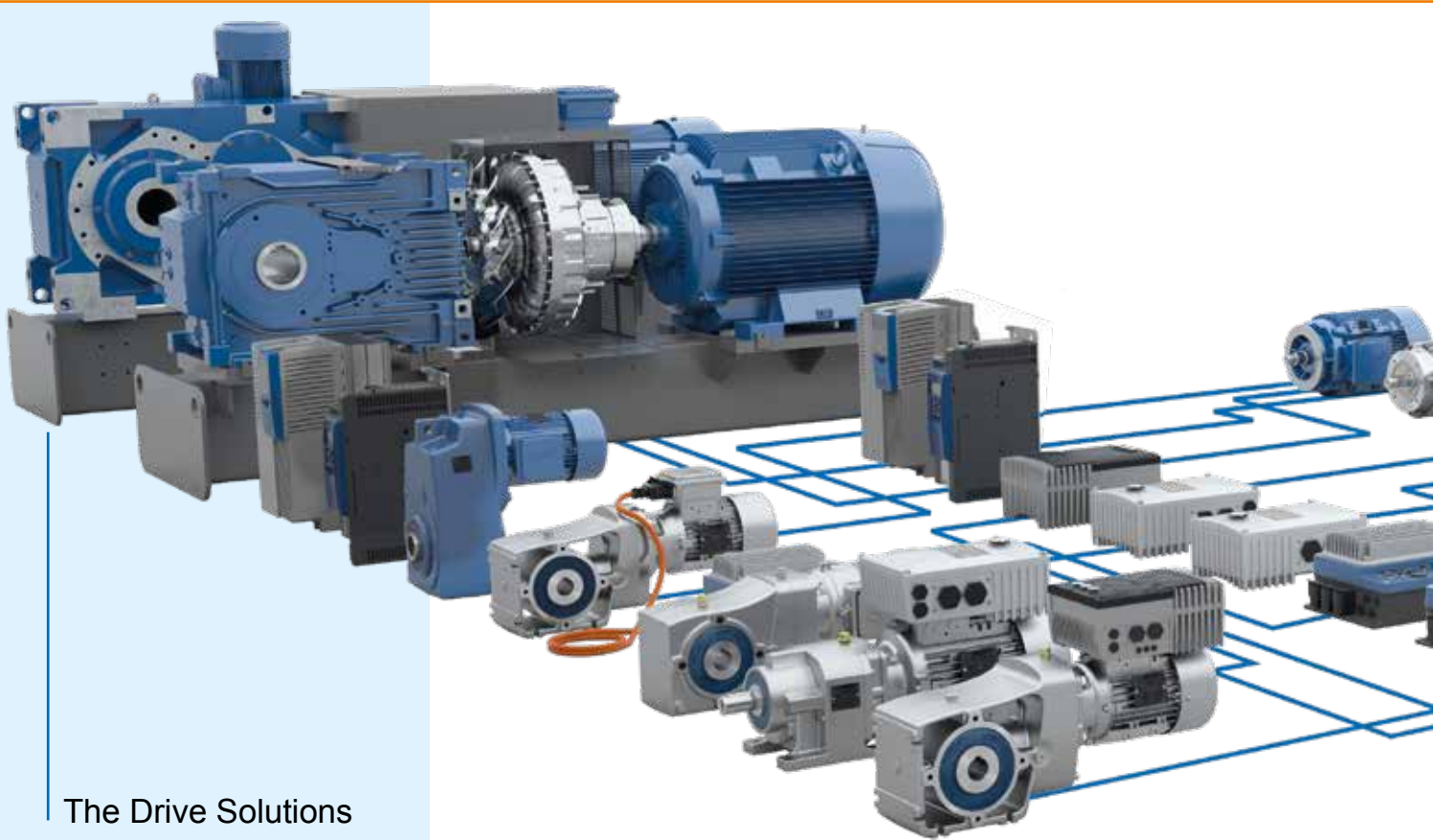




**Advantages of NORD solutions:**

- Specially designed for crane systems
- Long service life
- Energy savings
- Simple commissioning and maintenance
- Easy to service
- Global service by extensive NORD network
- Project support in all planning phases

# 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



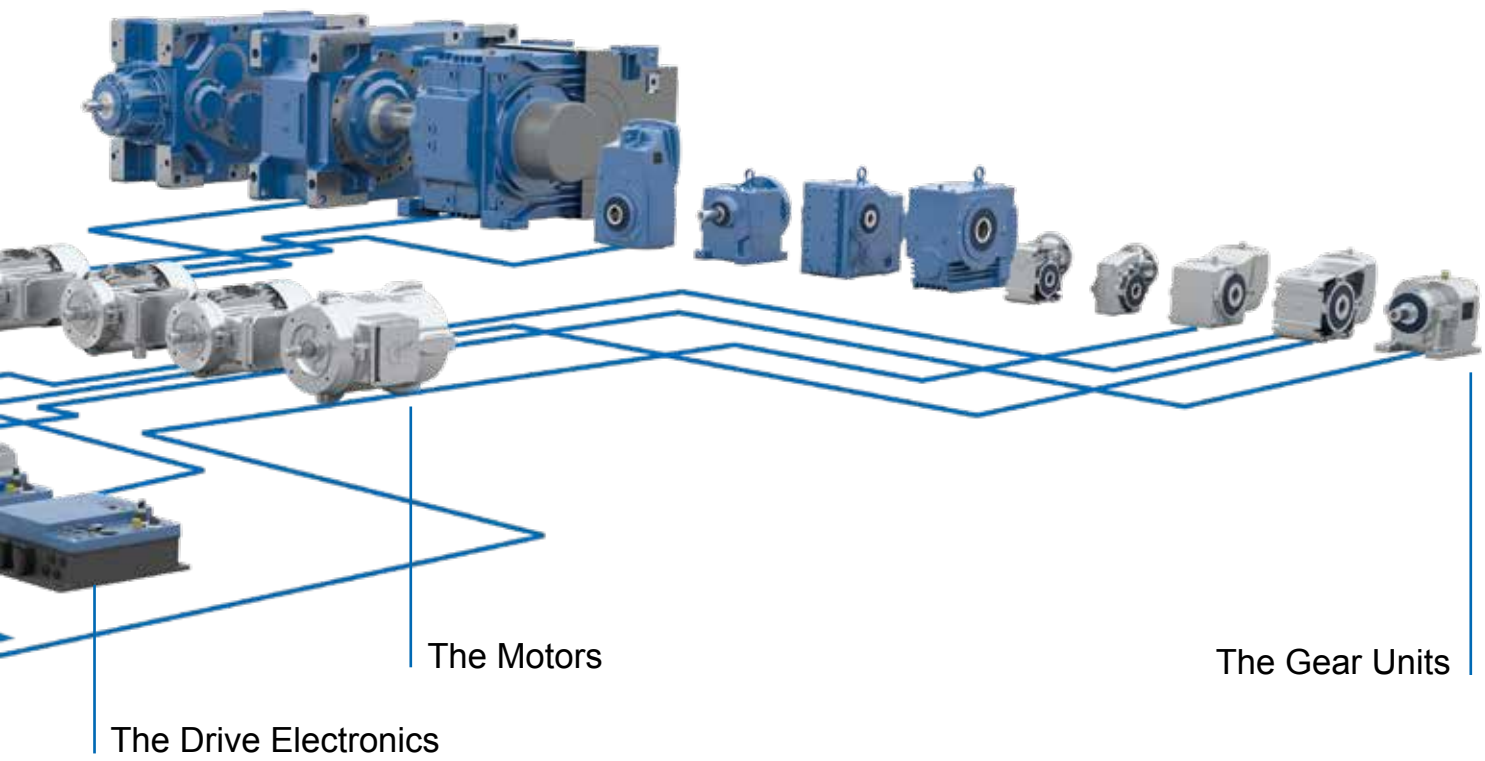
Intelligent drive electronics provide exactly the control facilities you need.

- 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 CRANE INDUSTRY



## 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

## UNICASE bevel gear units (Catalogue G1000)



- ✓ High axial torques
- ✓ High axial and radial loads
- ✓ Long life, low maintenance
- ✓ UNICASE housing

Power	0.12 – 200 kW
Torque	180 – 50,000 Nm
Speed ratio	8.04:1 – 13,432.68:1

## MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ Parallel axis and right-angled gear units
- ✓ High axial precision
- ✓ Long life, low maintenance
- ✓ UNICASE housing

Power	1.5 – 4,000 kW
Torque	15,000 – 260,000 Nm
Speed ratio	5.60:1 – 30,000:1



### 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
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### SK 500E NORDAC *PRO* frequency inverter (Catalogue E3000)



- ✓ Energy-saving function
- ✓ Integrated POSICON positioning control
- ✓ Plug-on communication module (field bus)

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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### Motors (Catalogue M7000)



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 according to 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



# NORD DRIVE SOLUTIONS FOR LOADING SYSTEMS

In Wugang harbour, located about 250 kilometres south of Shanghai at the mouth of the Yangtze River, up to 15 million tons of imported iron ore are unloaded every year for the WISCO steelworks in Wuhan.

More than 170 NORD geared motors ensure the reliable operation of the crane systems and bucket wheels, including:

- Three grabs at a mooring for 300,000 dwt ships with
- A total of 72 three-stage bevel geared motors

All of the NORD geared motors in Wugang are equipped with heavy-duty housings for outdoor use. They are effectively protected against the entry of fluids and equipped with corrosion- and moisture-proof components. Special paints are used for protection against the salty atmosphere. Most of the units are equipped with application-specific optional components. These include dust and corrosion protected brakes, micro-switches for continuous brake monitoring and double protective shields on the motor fans.







Whether for travel drives, cross-travel drives or lifting gear drives: NORD DRIVESYSTEMS offer the ideal drive solution for every application.

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