

Drive solutions for the bulk goods industry

Complete drive systems from a single source

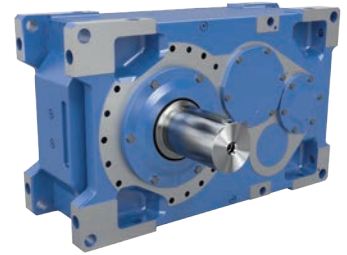


Complete drive solutions from a single source



NORD Delivers

NORD offers first-class customer service and support along with full-featured drive solutions that can tackle the toughest requirements. All components are carefully selected and precisely configured to meet your exact specifications. In the rare case that standard components won't meet your needs, our in-house engineering team will work with you to design custom components or a complete customized system.



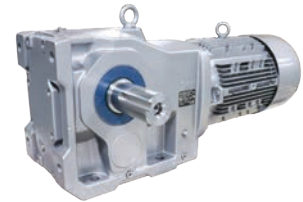
Reduce Lead Times and Decrease Inventory

- ▶ Fastest lead times in the industry with NO expedite fees
- ▶ Over 20,000,000 standard configurations to reduce or eliminate the need for custom components
- ▶ Modular drives, motors, and electronic controls minimize inventory of replacement units and parts



Global Product Designs, Standards, and Support

- ▶ Innovative, industry-standard products to support a wide range of applications
- ▶ Global sales and support network
- ▶ Dedicated mechanical and electrical application engineers ready to assist you
- ▶ Online resources available to you any time
- ▶ 24/7/365 emergency breakdown service



Increase Efficiency and Reduce Operation Costs

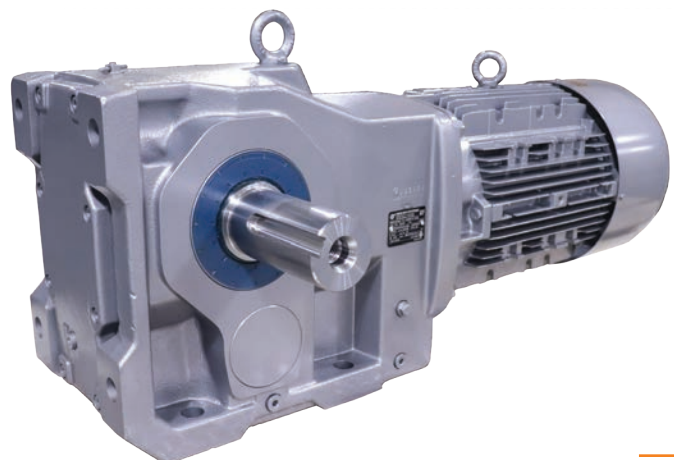
- ▶ myNORD online tools for fast selection, configuration, ordering, and tracking of your drive units
- ▶ Drive systems that are perfectly matched to your application for optimum performance and energy efficiency
- ▶ Program personalization, such as weekly shipment schedules and custom nameplates
- ▶ Partner with a company that is easy to do business with and wants to see you succeed!





Integrated solutions for the special requirements of the bulk goods industry

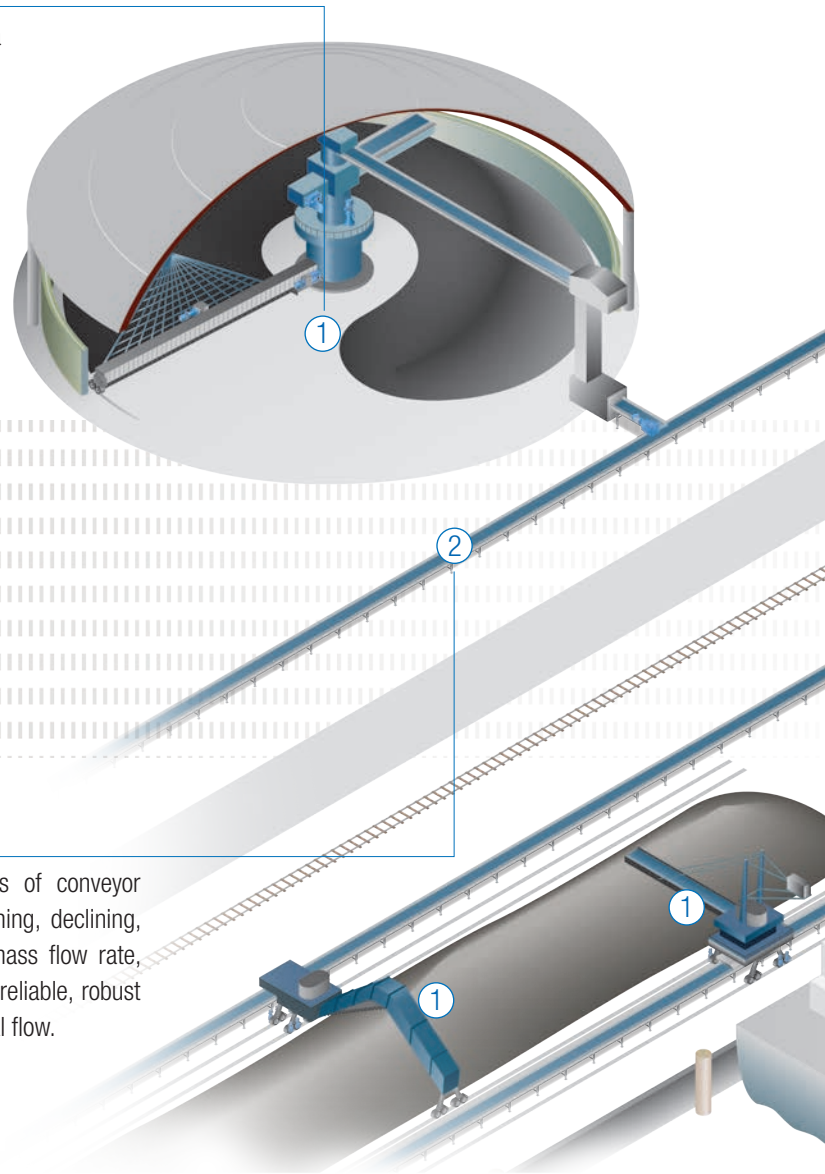
- ▶ Simple commissioning
- ▶ Low maintenance
- ▶ Clean, safe, and reliable operation
- ▶ Variant reduction
- ▶ Lower total cost of ownership
- ▶ Modular design
- ▶ Energy savings
- ▶ Project and product support
- ▶ Global NORD network



Drive solutions for the bulk goods industry

1 Storage

NORD provides highly configurable solutions to accommodate a wide range of plant arrangements.



2 Conveying

NORD solutions are engineered for all types of conveyor applications including horizontal, vertical, inclining, declining, and more. They take into consideration the mass flow rate, conveyor length, and construction to provide a reliable, robust drive system that ensures uninterrupted material flow.

Complete drive systems from a single source

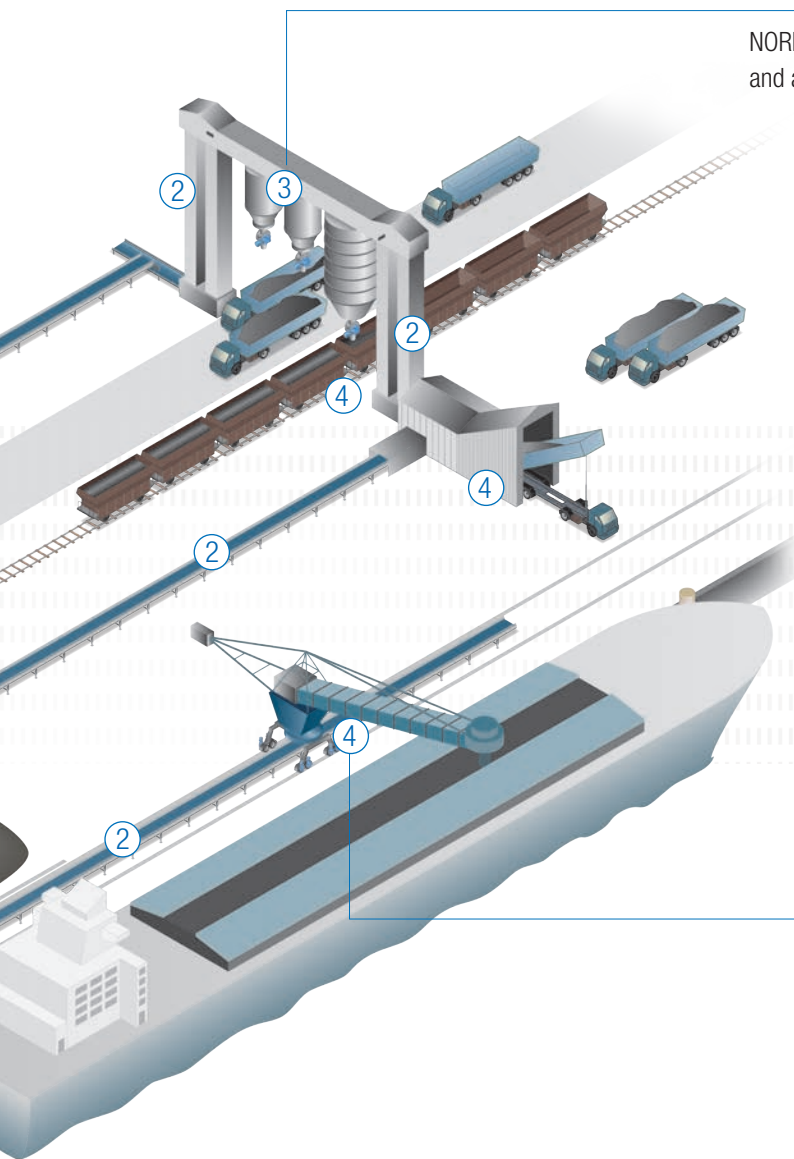
NORD DRIVESYSTEMS is one of the world's leading drive technology companies. Our solutions are used throughout the world for a wide variety of applications in many industry sectors.

NORD DRIVESYSTEMS provides:

- ▶ Extensive knowledge of applications and technical support
- ▶ Strong global presence and service
- ▶ Thousands of installed drives in the bulk goods industry
- ▶ Wide range of products with high quality standards
- ▶ Great reliability, economy, and service life
- ▶ Recognized product quality compliant with international standards

3 Weighing and Metering

NORD drives can be controlled individually to intelligently meter, weigh, and adjust mass flow for precise, dynamic bulk goods infeed control.



4 Loading and Unloading

Ships, trains, and trucks must be reliably loaded and unloaded for global bulk goods transport. NORD drives ensure that these tasks are completed quickly and safely.

We support you with:

Design

- ▶ myNORD online tools
- ▶ Variant reduction
- ▶ Project design / optimization
- ▶ 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 emergency support

Drive solutions for the bulk goods industry

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

NORD DRIVESYSTEMS developed revolutionary UNICASE™ gear unit housings in the early 1980's. These fully enclosed housings combine all of the gear unit's components and is machined from a single piece of material.

- ▶ Housing block integrates all bearing parts
- ▶ Complete machining in a single step
- ▶ High output torques
- ▶ High axial and radial load capacity
- ▶ Ultimate reliability
- ▶ Long service life
- ▶ Quiet operation



Storage

Bulk goods require specialized plant arrangements for transportation and storage. NORD offers versatile, customized drives to meet these needs.

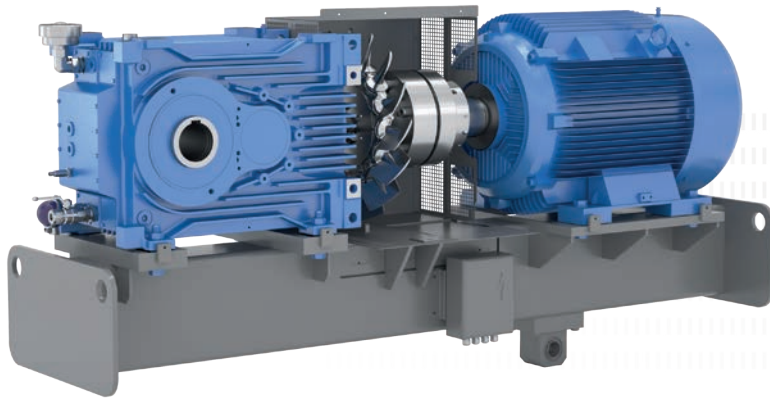
- ▶ All drives from a single source (gear units, industrial gear units, planetary gear units)
- ▶ Optimally matched components (gear unit, motor, VFD, couplings, brakes)
- ▶ Flexible implementation of customer-specific design specifications (e.g. drive pinions, motor swing bases)



Conveying

NORD specializes in gear units for conveying applications. We carefully consider all aspects of your project, including direction (horizontal, vertical, inclining, declining), mass flow, conveyor length, and construction to provide a solution that meets your precise requirements.

- ▶ Reliable
- ▶ Easy to service and maintain
- ▶ Modular components for highly configurable drive solutions
- ▶ Customer-specific engineering



Weighing and Metering

Drive solutions from NORD can be controlled individually to intelligently adjust the mass flow for precise, dynamic bulk goods infeed control.

- ▶ Dynamic operation
- ▶ Integrated PLC function
- ▶ Implementation of customer-specific process requirements (e.g. automatic blockage detection and elimination, automatic mass flow regulation)



Loading and Unloading

Ships, trains, and lorries must be loaded and unloaded quickly for global bulk goods transport. High performance NORD gear units ensure this is done safely and reliably.

- ▶ High system availability
- ▶ Optimally matched components (gear unit, motor, VFD, couplings, brakes)
- ▶ Customer-specific system design

Drive solutions for the bulk goods industry

Energy efficient, safe, and proven drive solutions from a single source



Energy efficient

NORD drive solutions are environmentally friendly, help reduce operating costs, and minimize CO₂ emissions.

- ▶ High efficiency helical and bevel gear units achieve optimum power transmission performance.
- ▶ Motors that comply with international energy efficiency classes up to IE5+.
- ▶ Variable frequency drives with energy saving functions to effectively reduce energy consumption.
- ▶ Components that are precisely matched to obtain ultimate efficiency.

Reliable

Reliability is our main focus when developing our 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.
- ▶ Highly precise gearing ensures minimal wear and a long service life.
- ▶ Efficient protection of drive system and plant by implementing couplings matched to the process and the gear unit (e.g. hydraulic couplings).
- ▶ Extraordinarily robust gear units that run quietly and have a long service life.
- ▶ Variable frequency drives equipped with safety functions to protect the drive system and operators electronically.

Tried-and-tested

Demanding ambient conditions are common in the bulk goods industry. This includes large temperature fluctuations, abrasive environments, and rough operating conditions. The reliability and cost-effectiveness of NORD solutions for these challenges have proven themselves in the bulk goods industry throughout the world.

- ▶ Full featured NORD drive solutions based on a modular system consisting of a VFD, motor, gear unit, couplings, and brakes.
- ▶ Components can be combined with add-on solutions designed on an individual basis to meet customer requirements.



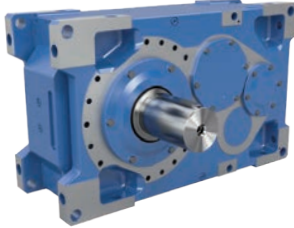
Innovative drive solutions for demanding ambient conditions

The extensive product portfolio of NORD DRIVESYSTEMS is constantly being developed. Through continuous investment in the latest development, manufacturing, and automation technology, we are always in a position to offer our customers drive systems optimized for the specific requirements of their respective industry.



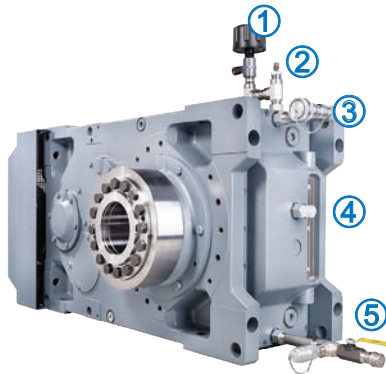
Drive solutions for the bulk goods industry

MAXXDRIVE® Industrial Gear Units (Catalog G1050)



- ✓ Parallel axis and right-angled gear units
- ✓ High axial load capacity
- ✓ Long life, low-maintenance
- ✓ UNICASE housing
- ✓ Hollow or solid shaft
- ✓ Foot motor (IEC B3)
- ✓ Hydraulic clutch
- ✓ Backstop
- ✓ Brake
- ✓ All components can be mounted on a motor swing arm or a steel frame.
- ✓ High Efficiency IE3 motor
- ✓ ATEX motors for applications in explosive environments

Sizes: 11
Power: 2.5 – 8075 HP
Torque: 132,800 – 2,495,900 lb-in
Speed ratio: 5.54 – 30,000*:1



The Endurance Package from NORD DRIVESYSTEMS is a combination of several protective measures that ensures your investment will have a long operating life.

- 1 Drying agent filter
- 2 Oil sampling point
- 3 Quick fit filter trolley connection
- 4 Oil inspection glass
- 5 Quick fit filter trolley connection and oil drain cock

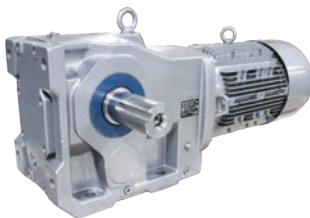
UNICASE™ CLINCHER™ parallel shaft gear units (Catalog: G1000)



- ✓ Foot, flange, or shaft mounted
- ✓ Compact design
- ✓ Hollow or solid shaft
- ✓ Cast-iron or aluminum UNICASE housing

Sizes: 15
Power: 0.16 – 200 HP
Torque range: Up to 680,000 lb-in
Speed ratio: 4.03 – 15,685.03:1

UNICASE™ bevel gear units (Catalog: G1000)



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

Sizes: 11
Power: 0.16 – 200 HP
Torque range: Up to 442,500 lb-in
Speed ratio: 8.04 – 13,432.68:1

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



- ✓ Energy-saving function
- ✓ 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: 0.33 – 30 HP

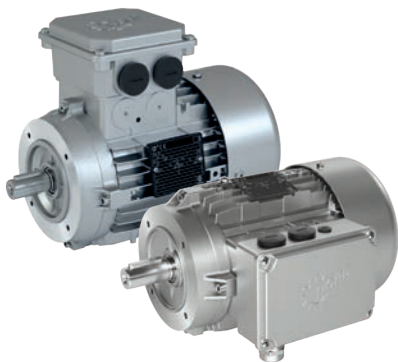
NORDAC® PRO SK 500E control cabinet variable frequency drives (Catalog: E3000)



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

Sizes: 11
 Voltage: 1 ~ 110 – 120 V, 1 ~ 200 – 240 V, 3 ~ 200 – 240 V, 3 ~ 380 – 480 V
 Power: 0.33 – 200 HP

Motors



- ✓ IE3 motors from 0.16 HP / 0.12 kW (Size 63)
- ✓ IE4/IE5+ synchronous and asynchronous motors



Explosion-protected drive solutions

NORD DRIVESYSTEMS supplies customized explosion-protected motors and geared motors.

- ▶ Versions and equipment according to individual requirements
- ▶ Configuration processes validated according to ISO 9001
- ▶ Safe, SAP-supported modular system

Dust explosion protected motors

- ▶ Category 2D or 3D, Zone 21 or 22
- ▶ According to EN 60079-31
- ▶ Ignition protection type Ex t (protected by housing)

Gas explosion protected gear units

- ▶ Category 2D or 3D, Zone 21 or 22
- ▶ According to EN 13463
- ▶ Ignition protection Type C (design safety)

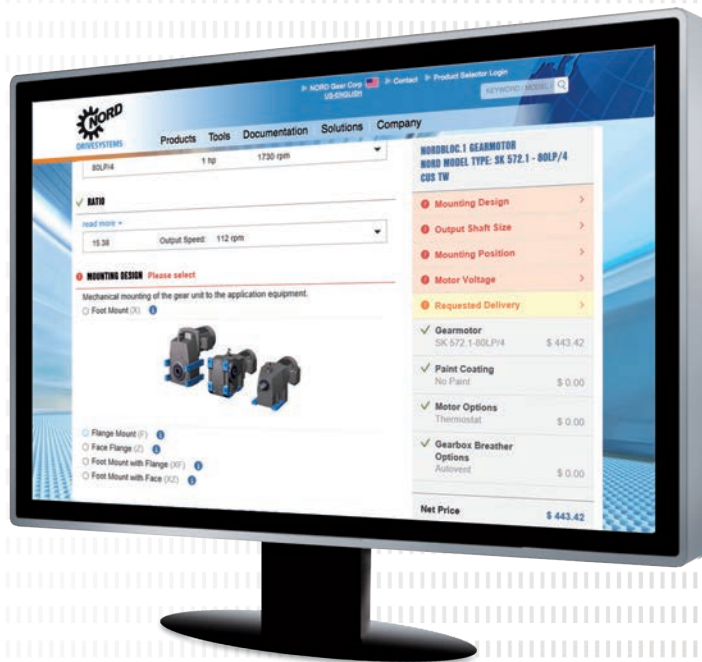
Hazardous locations

- ▶ Class I, Division 2 Groups A, B, C, D
- ▶ Class II, Division 2 Groups F and G Temp Code T3B

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
- ▶ Select and order spare parts



Register now at myNORD.com!



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