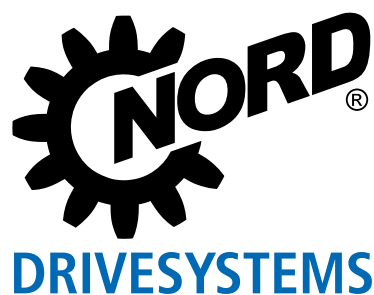


INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



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**DRIVE SOLUTIONS FOR  
THE GRAIN INDUSTRY**



# DRIVE SOLUTIONS FOR THE GRAIN 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 and motor starters



**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 GRAIN HANDLING PROCESSES

**NORD DRIVESYSTEMS** is a globally active system provider of robust and reliable drive technology, including drives for the special environment of the grain industry.

NORD DRIVESYSTEMS designs customised and individual drive solutions, which meet the requirements of several grain production processes.

## TERMINALS

- Receiving
- Storage
- Load Out

## TRANSPORTATION

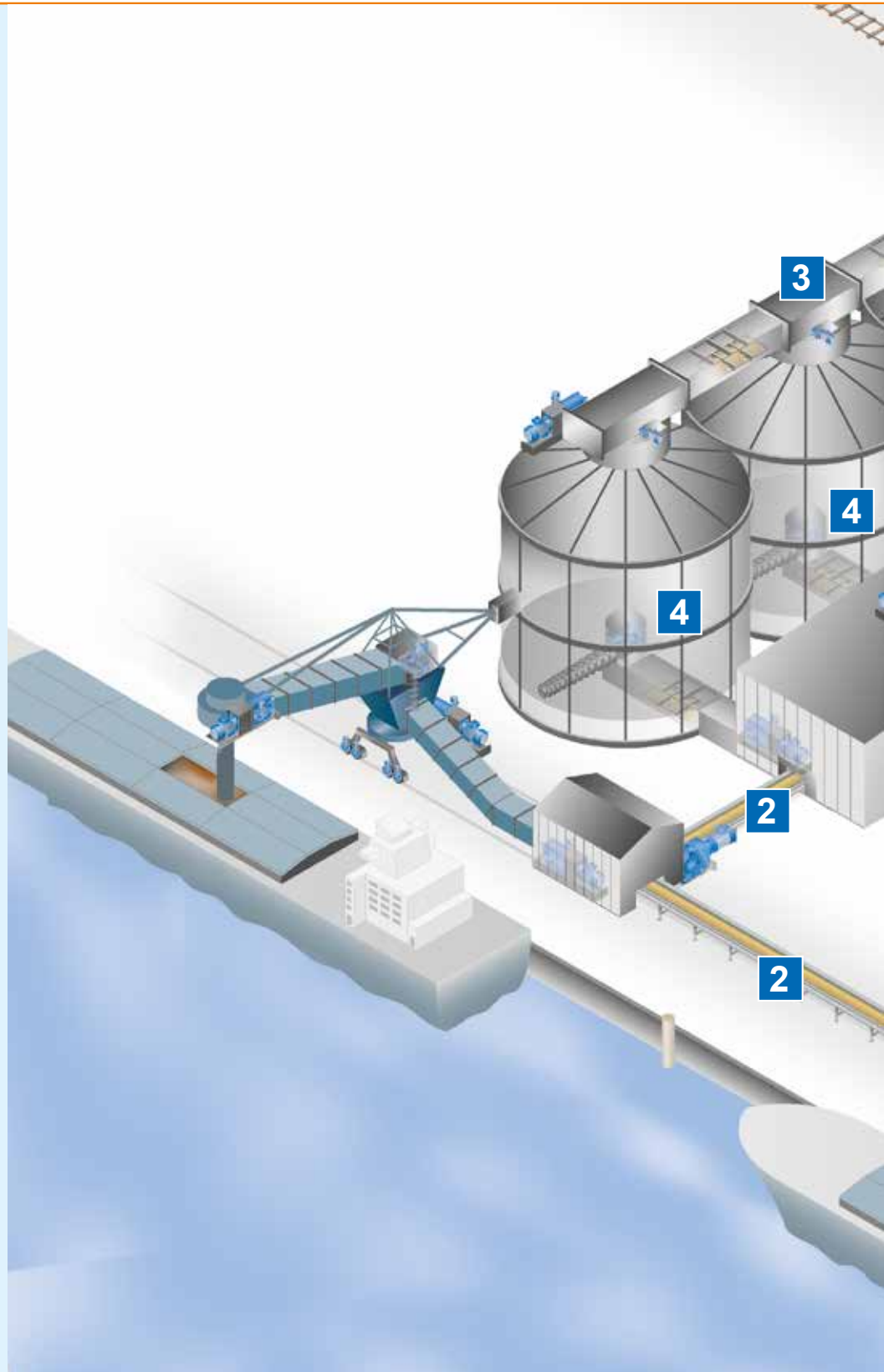
- Port Facilities
- Rail

## PROCESSING\*

- Canola Crushing
- Flour Mills
- Feed Mills
- Fertilizer Storage
- Blending Facilities

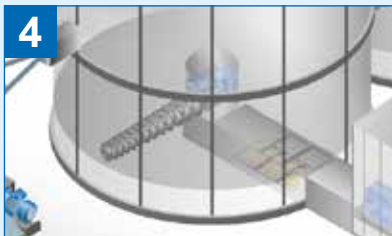
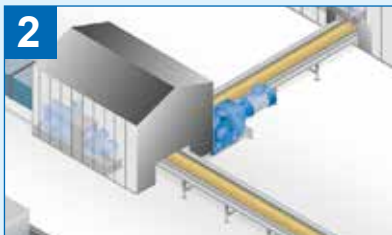
## NORD DRIVESYSTEMS provides:

- Strong application knowledge and technical support with experience of thousands of installed units in the grain industry
- Complete drive solutions from a single source
- Strong worldwide presence and support
- Large product portfolio with high quality standards
- Highest reliability and robustness in Certifications: ISO 9001, UL, CSA, GHOST-R, CCC and ATEX





# DRIVE SOLUTIONS FOR GRAIN HANDLING PROCESSES



## 1 Drag Conveyors

Drag conveyors can be used to meter or transport bulk materials from one process to another. Flexible design allows to adopt to nearly every plant layout. They are ideal for handling dry, free-flowing materials in a fully closed design with safety and environmental advantages. Benefits of the drag conveyor include minimal product abrasion during conveying and require less horsepower per volume of material than other types of conveyors. NORD DRIVESYSTEMS compact and versatile design fits almost any plant layout.

- Foot, shaft or flange mounted
- UNICASE cast iron housing
- Air breather helps prevent bearing and gear damage
- 90.1 Helical bevel geared motors offer infinite-life gears & high permissible radial forces
- Parallel shaft geared motor as an alternative in limited space

## 2 Belt Conveyors

Belt conveyors are used for higher capacity, long distance and single outlet conveying at low horsepower with static material on the belt for horizontal and/or inclined transportation of material.

- Hydraulic couplings or inverter for soft start
- Back stop option to prevent material flow back
- Special sealing solutions
- Shrink disc for easy fixation
- Torque console, torque arms

### 3 Rotary Valves/Feeders/Slide Gates

The bulk material can be regulated, measured and dosed by a rotary valve, feeder or slide gate to ensure the correct material flow in the process. Exact positioning and constant but flexible speeds are important and can be regulated with NORD geared motors.

- Corrosion-resistant versions available for many applications
- Reverse operation option to remove material blockage (e.g. stones)
- Foot, shaft or flange mounted
- Space-saving design
- Special sealing solutions

### 5 Screw Conveyors

Screw conveyors hold a screw in between bearings, which rotates in a housing and thereby transports the material. Over a specific distance, the bulk material conveyed in horizontal, inclined or vertical direction can be accurately metered through the case.

- UNICASE reducer housings
- Special shaft sealings for every environment
- Easy mounting and removal
- Eliminates the need for top motor mounting, pulleys and belts

### 4 Rotary Screw Silo Reclaimer

Removing material residues from silo grounds is taken care of by rotary screw silo reclaimers. Included intelligent torque control solutions and reverse direction modes protect the application against overloads caused by bigger, harder materials.

- UNICASE cast iron housing
- Foot, shaft or flange mounted
- Reinforced bearing designs for high axial and radial loads
- Intelligent drive electronics and torque control

### 6 Bucket Elevators

Bucket elevators are used for vertical transport of bulk materials. NORD DRIVESYSTEMS provides flexible solutions for even high-torque applications.

- Back stop option to prevent material flow back
- Auxiliary drive with overruning clutch and incremental encoder available for maintenance mode
- Special sealing solutions
- Hydraulic couplings or inverter for soft start
- Swing base
- Direct or IEC mounted motors

# RELIABLE DRIVE SOLUTIONS

## SATISFIED CUSTOMERS



### Clean & Safe

NORD DRIVESYSTEMS efficient and reliable reducers, motors and frequency inverter contribute to a clean and safe design. By offering a neat and compact direct drive alternative, the application is free of straps and has no exposure of rotating components.

- Optimised drive selections – designed with safety in mind
- Reduced pinch points and external rotating components
- Bolt on carriers and housing splits are eliminated



### Reliable

Downtime is something unsustainable in the grain industry. To keep key operations safe and profitable, NORD DRIVESYSTEMS uniquely designed components work in unison and are highly reliable.

- Industry leading ratio range and mounting option flexibility
- UNICASE gear housings provide accurate positioning of bearings and shafts
- Air breather helps ensure a leak-free design
- Infinite-life, high quality gearing
- Exceptional durability, quiet operation and long service life
- Coupling, cooling and swing base options
- Predictive maintenance features



### Efficient

NORD DRIVESYSTEMS is committed to reduce carbon emissions harmful to our environment. NORD motors offer superior insulating materials, low temperature rise and voltage spike resistance.

- Low inertia, inverter rated motors meet the latest global energy requirements.
- Efficient operation and optimised motor performance
- Reduced operating temperatures
- Longer service life and lower total cost of ownership



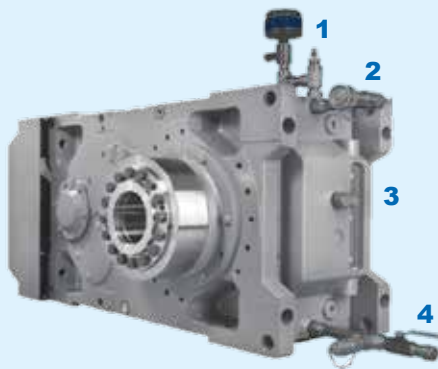


- System solutions customised to the requirements of the grain industry
- Simple commissioning
- Global NORD network
- Easy to service and operate
- Reduced Total Cost of Ownership (TCO)
- Modular design
- Energy savings
- Project support



# NORD DRIVE SOLUTIONS FOR THE GRAIN INDUSTRY

- MAXXDRIVE® industrial gear units (hollow or solid shaft)
- Foot mounted motor (IEC B3)
- Hydraulic coupling
- Back stop
- Brake
- All components are mounted on a motor rocker or frame.
- High efficiency IE3 motor
- ATEX motors for applications in explosion hazard areas



### Endurance Package

The maintenance 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 Quick fit filter trolley connection
- 3 Oil inspection glass
- 4 Quick fit filter trolley connection & oil drain cock



### 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
Ratio	1.35:1 – 14,340.31:1

### UNICASE parallel shaft gear units (Catalogue G1000)



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

Power	0.12 – 200 kW
Torque	110 – 100,000 Nm
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
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 – 250,000 Nm
Ratio	5.60:1 – 30,000:1

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

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

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

**UNIVERSAL SI worm gear units** (Catalogue G1035)

- ✓ Universal mounting
- ✓ Lifetime lubrication
- ✓ IEC version

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

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

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

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

**SK 500E NORDAC PRO 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 – 480 V
Power	0.25 – 160 kW

**Motors**

**IE3** IE3 motors from 0.12 kW (size 63)

**IE4** IE4 synchronous and asynchronous motors

**NORD explosion protected drive solutions**

NORD DRIVESYSTEMS supplies customised 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**

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

**Dust explosion protected gear units**

- According to Category 2D or 3D
- For Zone 21 or 22
- According to EN 13463
- Ignition protection type c (design safety)

NORD DRIVESYSTEMS is a globally active system provider of robust and reliable drive technology, including drives for the special environment of the grain industry.

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