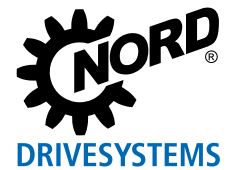
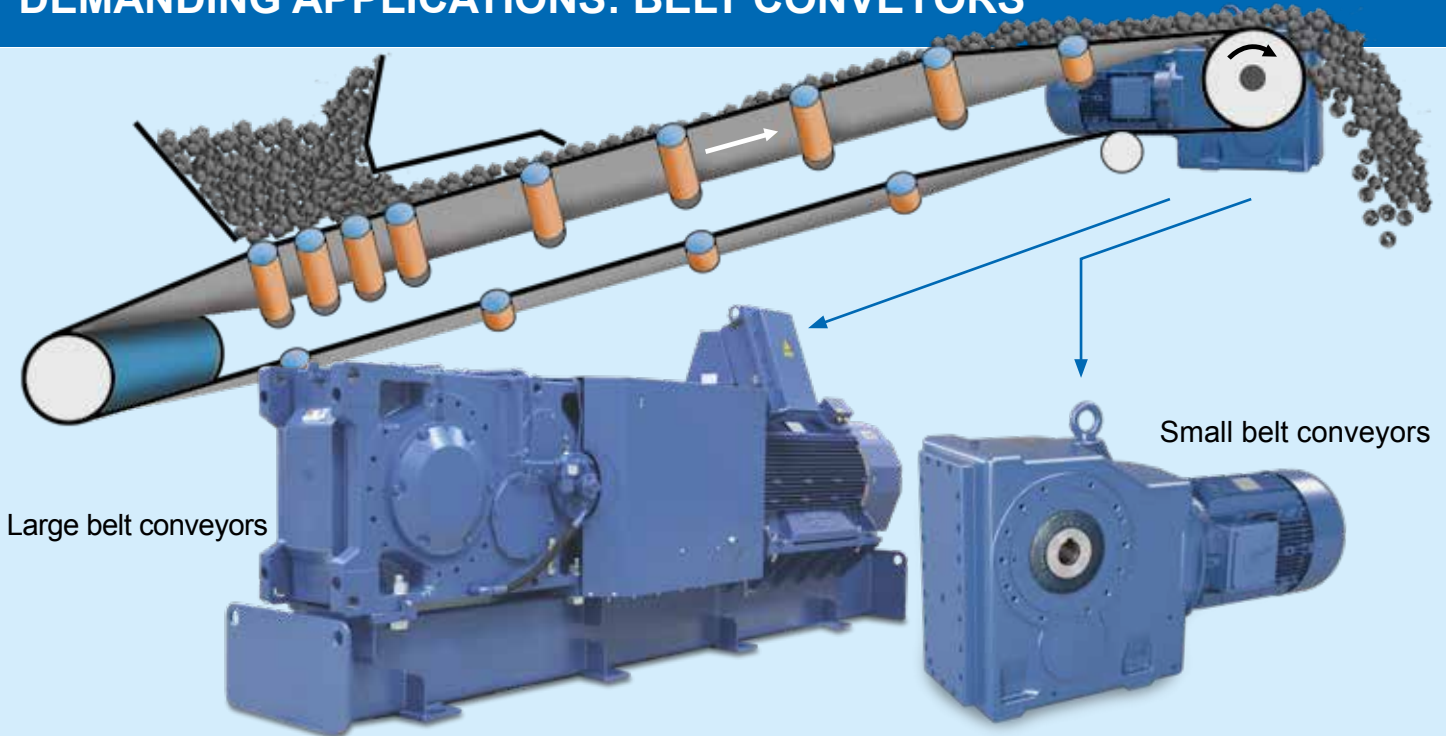


DRIVE SOLUTIONS FOR BELT CONVEYORS IN THE BULK MATERIALS INDUSTRY



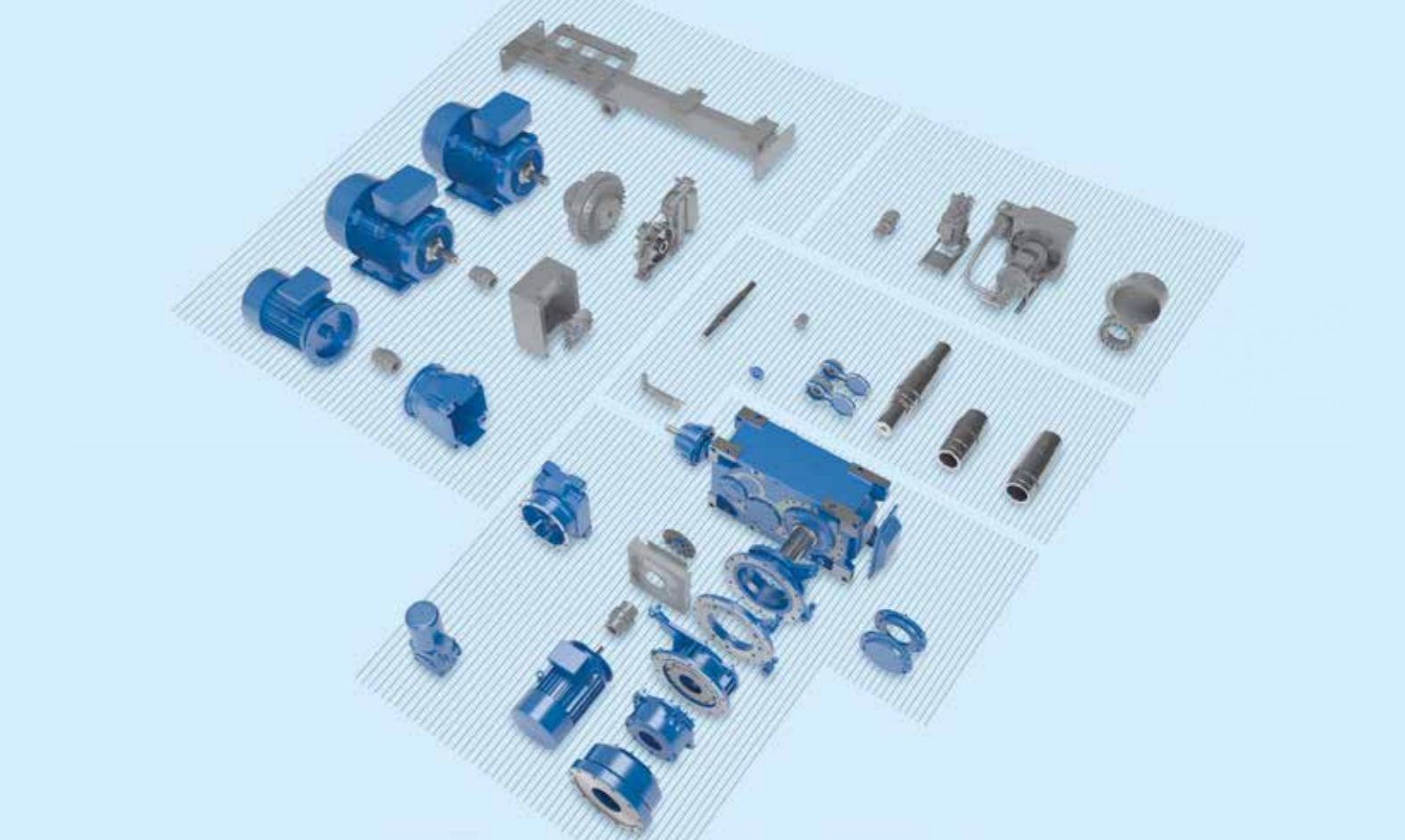
Reliable under extreme conditions:
NORD DRIVESYSTEMS supplies suitable
and robust drives for large and small belt
conveyor systems.

DEMANDING APPLICATIONS: BELT CONVEYORS



Belt conveyors are used for the transportation of bulk materials in continuous operation. They consist of an endless conveyor belt which runs on support rollers. The belt is used both as the means of transport and the provider of movement. They enable economical transportation of large quantities over long distances. Conveyor lengths range from a few metres to several kilometres. The belts can run horizontally, or rise or

fall. Combinations are also possible. The entire drive system is designed on the basis of the quantity and properties of the material to be transported and the ambient and operating conditions. This ensures that the drive system is optimally matched to the application. For example it is necessary to reduce the strain on the belt during starting.



DRIVE SOLUTIONS FOR LARGE BELT CONVEYORS

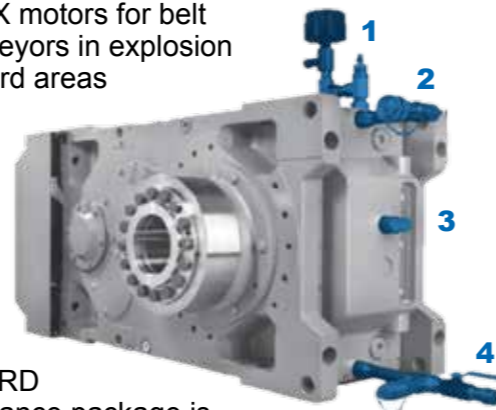
MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ All bearing points and sealing-surfaces are machined in a single operation
- ✓ Foot-, flange- or hollow shaft mounted
- ✓ Long life, low maintenance
- ✓ Parallel axis and right-angled gear units
- ✓ UNICASE housing
- ✓ Helical and bevel gear units

Sizes	11
Power	1.5 – 4,000 kW
Torque	15 – 250 kNm
Speed ratio	5.60:1 – 30,000:1

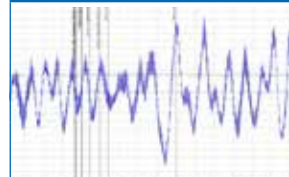
- MAXXDRIVE® industrial gear units (hollow or solid shaft)
- Foot-mounted motor (IEC B3)
- Hydraulic coupling
- Back stop
- Brake
- All components are mounted on a motor rocker or frame
- High efficiency IE3 motor
- ATEX motors for belt conveyors in explosion hazard areas



The NORD maintenance package is a combination of protective measures which ensures that your investment will continue to function for a long time to come.

- 1 Drying agent filter
- 2 Quick fit filter trolley connection
- 3 Oil inspection glass
- 4 Quick fit filter trolley connection & oil drain cock

NORD Monitoring Systems



- ✓ Temperature
- ✓ Oil level
- ✓ Status monitoring
- ✓ Pressure
- ✓ Vents
- ✓ Wireless

RECOMMENDED OPTIONS FOR LARGE BELT CONVEYORS

MAXXDRIVE® industrial gear units are based on the NORD modular system and provide many individual options such as:



1 Axial fans

The high performance axial fan is mounted directly on the drive shaft and provides a high cooling power and a thermal reserve.

2 Base frame / motor rocker

All mechanical and electrical components are mounted on a motor rocker or a motor frame, which simplifies the installation of the drive train.

3 Fluid coupling

The fluid coupling enables the conveyor belt to start gently and therefore prevents excessive tensile forces on the belt and high toques in the gear unit. In addition, it reduces the starting current.

4 Back stop

The back stop prevents run-back with inclined conveyor belts. All back stops are externally mounted and can be replaced without having to dismantle the gear unit. The back stops are also lubricated with the gear oil.

5 Brake

The brake can be used as a holding brake or an operating brake. Drum and disc brakes are available.

6 Taconite seal

The Taconite seal prevents damage to the shaft sealing rings in abrasive or dusty environments. It consists of a labyrinth seal which can be re-lubricated to keep abrasive dust away from the seal.



DRIVE TRAINS FOR LARGE BELT CONVEYORS

Hollow shaft with shrink disc and motor rocker



Solid shaft with flange coupling and motor rocker



Solid shaft with output coupling and motor frame



Advantages

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Simple installation of the entire drive, as no alignment of the motor rocker is required | <ul style="list-style-type: none"> Simple installation of the entire drive, as no alignment of the motor rocker is required Simple disassembly even after long periods of operation by loosening the screw connections of the flange coupling | <ul style="list-style-type: none"> Simple disassembly even after long periods of operation Damping of peak loads or vibrations by the elastic coupling No reaction forces on the output bearings and output shafts |
|--|---|---|

Disadvantages

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> Difficult to disassemble after long periods of use No damping of peak loads or vibrations | <ul style="list-style-type: none"> Higher external reaction forces on output bearings and output shafts No damping of peak loads or vibrations | <ul style="list-style-type: none"> Alignment of the frame necessary during installation |
|--|--|--|

DRIVE SOLUTIONS FOR THE BULK MATERIALS INDUSTRY

DER ANTRIEB

Reliable. Versatile. Global.



THE GEAR UNIT

- Strong bearings
- Quiet running

THE MOTOR

- High efficiency
- Global standards

THE DRIVE ELECTRONIC

- Compact design
- Easy implementation



NORD EXPLOSION PROTECTED DRIVE SOLUTIONS

Drive systems for explosion hazardous areas Zones 1, 2, 21, or 22

NORD DRIVESYSTEMS supplies customised explosion protected motors and geared motors. Systems based on top quality components are designed according to application in compliance with specific customer requests.

- 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)

VERSIONS AND OPTIONS FOR SMALL BELT CONVEYORS

UNICASE bevel gear units (Catalogue G1000)



- ✓ Push-on, foot or flange mounted versions
- ✓ Hollow or solid shaft
- ✓ UNICASE cast-iron housing

Sizes	11
Power	0.12 – 200 kW
Torque	180 – 50,000 Nm
Ratio	8.04:1 – 13,432.68:1

Gear unit options recommended by NORD DRIVESYSTEMS

Symbol	Meaning
A	Hollow shaft
AZ	Hollow shaft, B14 flange
AZD	Hollow shaft, B14 flange B14, with torque arm
AZK	Hollow shaft, B14 flange, with torque console
B	Fixing elements for hollow shaft
G	Rubber buffer for torque arm
H	Cover as a touch guard
S	Hollow shaft with shrink disc

Motor options for small belt conveyors

RLS	Back stop
IP66	Protection against water and dust
PTC/KTY/PT100	Thermistors
High-efficiency motors	
ATEX	Motors for explosion hazard areas

FREQUENCY INVERTER CONTROLLED BELT CONVEYORS

Advantages

- Easy commissioning
- Variable speed
- Adjustable torque ramp
- Safety functions
- High efficiency
- Load-dependent speed control reduces wear
- Parameterisation according to process requirements

SK 200E NORDAC FLEX frequency inverters (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 inverters (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
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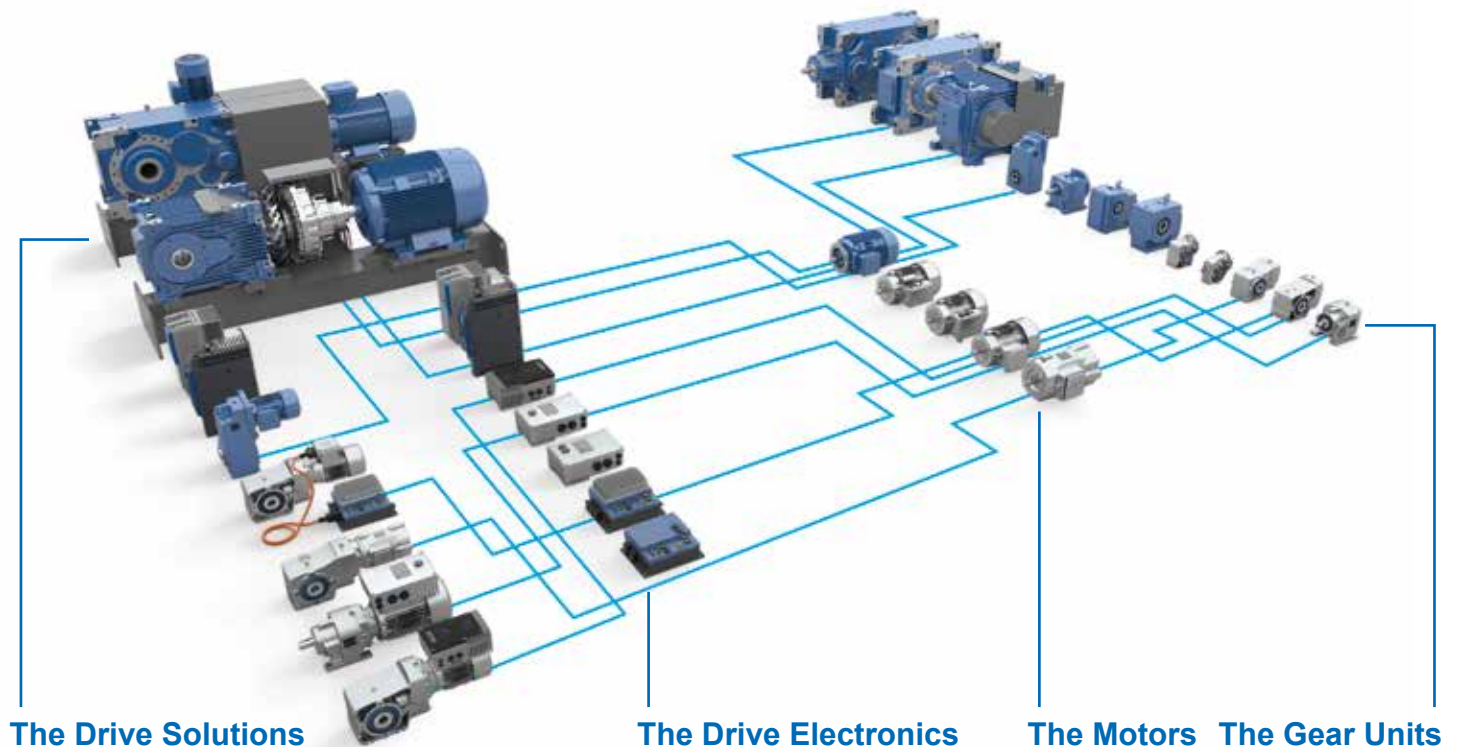
DRIVE SOLUTIONS FOR BELT CONVEYORS IN THE BULK MATERIALS INDUSTRY



Throughout the world, thousands of reliable NORD drives are in operation in industries in which materials are transported by belt conveyors, e.g.:

- Cereals
- Coal
- Cement and minerals
- Fertilizer
- Aggregates

COMPLETE DRIVESYSTEMS FROM A SINGLE SOURCE



NORD DRIVESYSTEMS Group

- Family business from Bargteheide near Hamburg with 4,000 employees
- Drive solutions for more than 100 branches of industry
- 7 production locations worldwide
- Present in 98 countries on 5 continents
- More information: www.nord.com

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