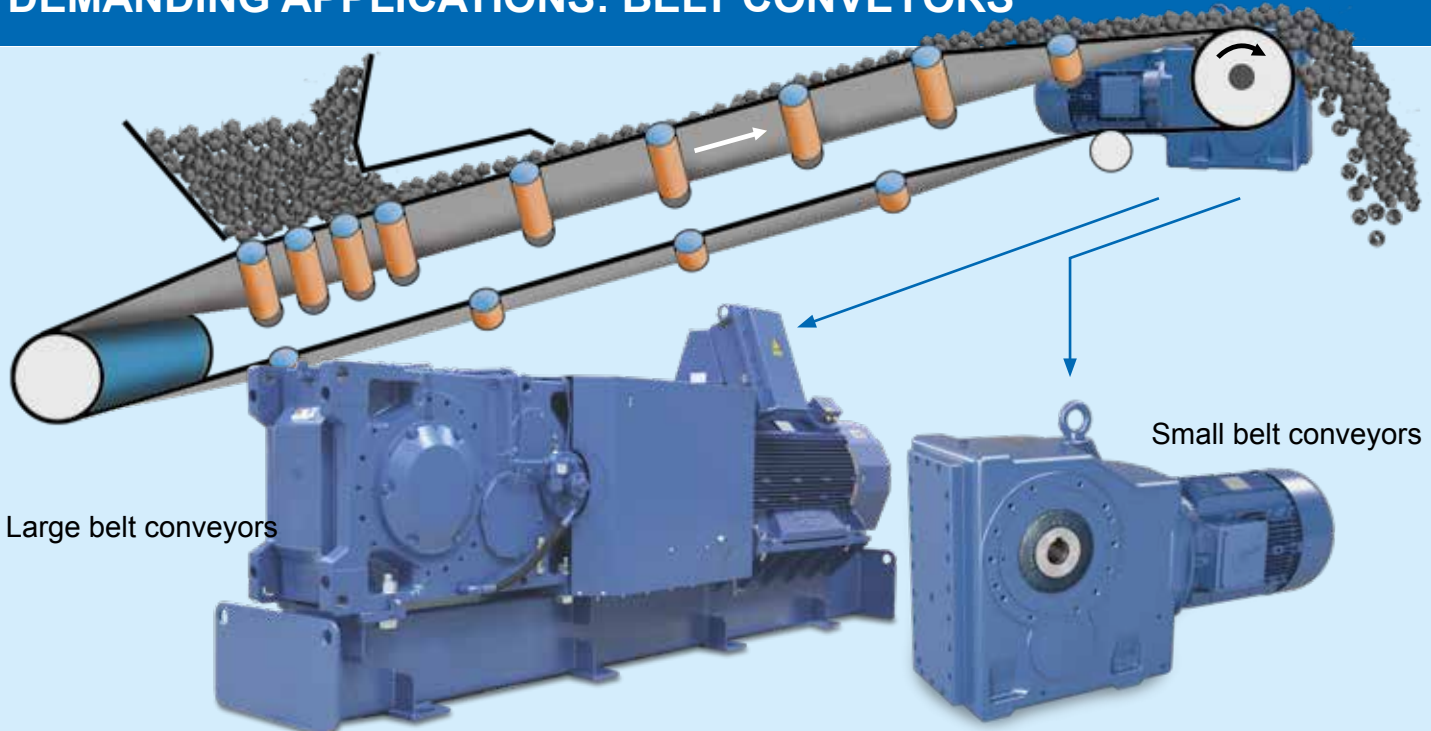


DRIVE SOLUTIONS FOR BELT CONVEYORS IN THE BULK MATERIALS INDUSTRY



Reliable under extreme conditions:
NORD 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

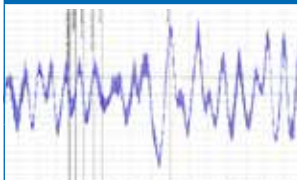
MAXXDRIVE™ industrial gear units (Catalogue G1050)



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

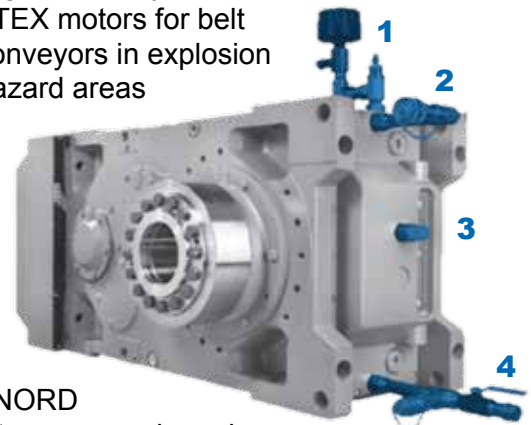
Sizes	11
Power	2.2 – 4,000 kW
Torque	15 – 250 kNm
Speed ratio	5.54:1 – 30,000:1

NORD Monitoring Systems



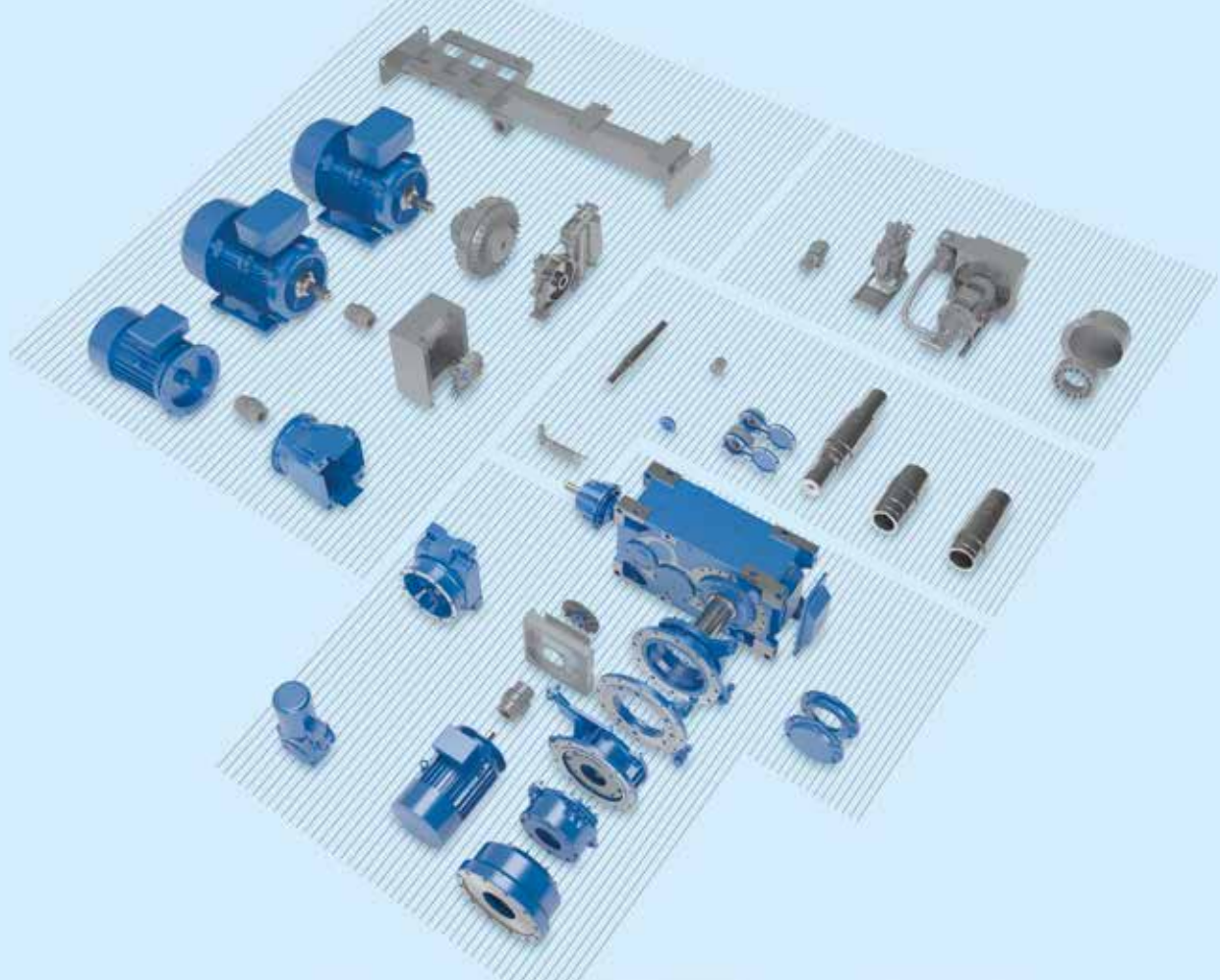
- ✓ Temperature
- ✓ Oil level
- ✓ Status monitoring
- ✓ Pressure
- ✓ Vents
- ✓ Wireless

- 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

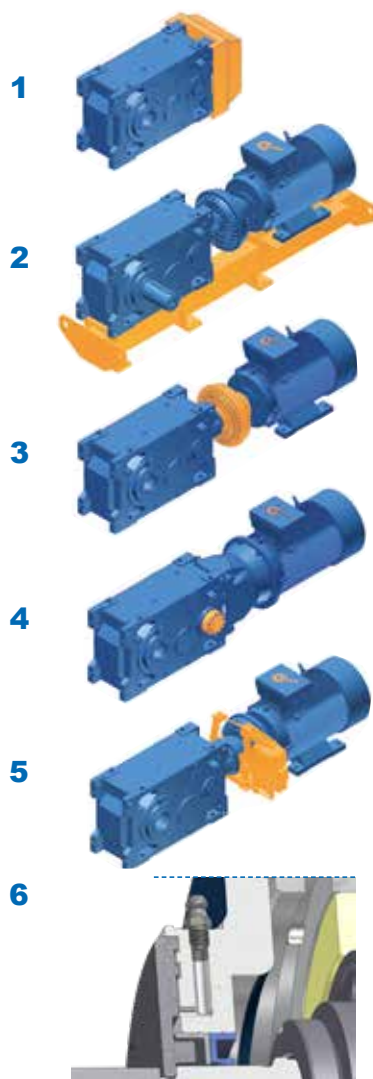


The NORD maintenance package is a combination of protective measures which ensures that your investment will continue to function for a long time to come.

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



RECOMMENDED OPTIONS FOR LARGE BELT CONVEYORS



NORD 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.



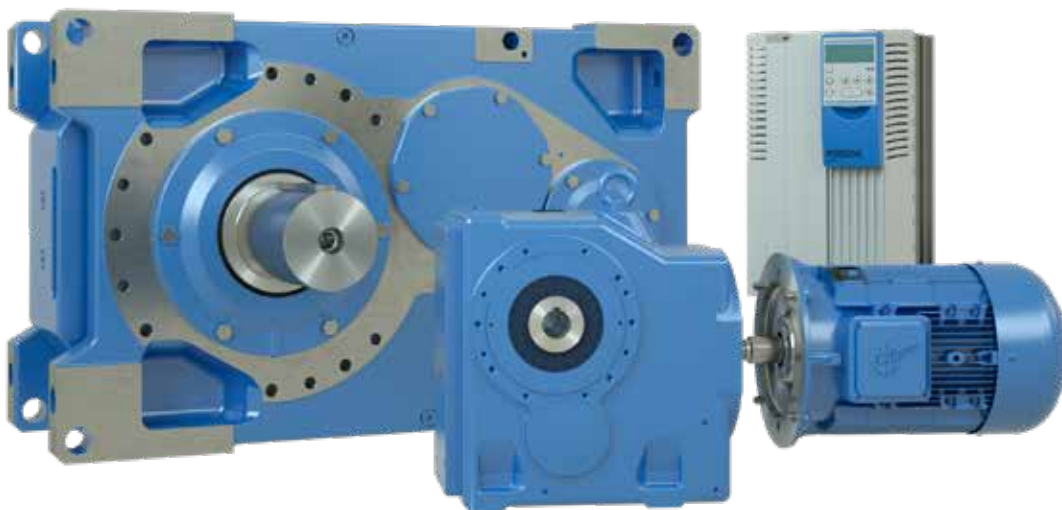
DRIVE TRAINS FOR LARGE BELT CONVEYORS

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



DER ANTRIEB

■ Reliable ■ Versatile ■ Global



The Gear Units

- Generously dimensioned bearings
- High power density
- High level of corrosion protection

The Motor

- High efficiency
- International standards
- All operating conditions

The Drive Electronics

- Compact design
- Simple commissioning
- Scalable functions



VERSIONS AND OPTIONS FOR SMALL BELT CONVEYORS

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
Speed ratio	8.04:1 – 13,432.68:1

Gear unit options recommended by NORD

Symbol	Meaning
A	Hollow shaft
AZ	Hollow shaft, B14 flange
AZD	Hollow shaft, flange B14, with torque arm
AZK	Hollow shaft, flange B14, 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



NORD EXPLOSION PROTECTED DRIVE SOLUTIONS

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

NORD 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)

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

NORDAC FLEX frequency inverter SK 200E (Catalogue F3020)



- ✓ Energy-saving function
- ✓ Integrated "Posicon" positioning control
- ✓ Integrated PLC

Voltage	1~ 115 V
	1~ 230 V
	3~ 230 V
	3~ 400 V

Power	0.25 – 22 kW
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NORDAC PRO frequency inverter SK 500E (Catalogue F3050)



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

Voltage	1~ 115 V
	1~ 230 V
	3~ 230 V
	3~ 400 V

Power	0.25 – 160 kW
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DRIVE SOLUTIONS FOR BELT CONVEYORS IN THE BULK MATERIALS INDUSTRY

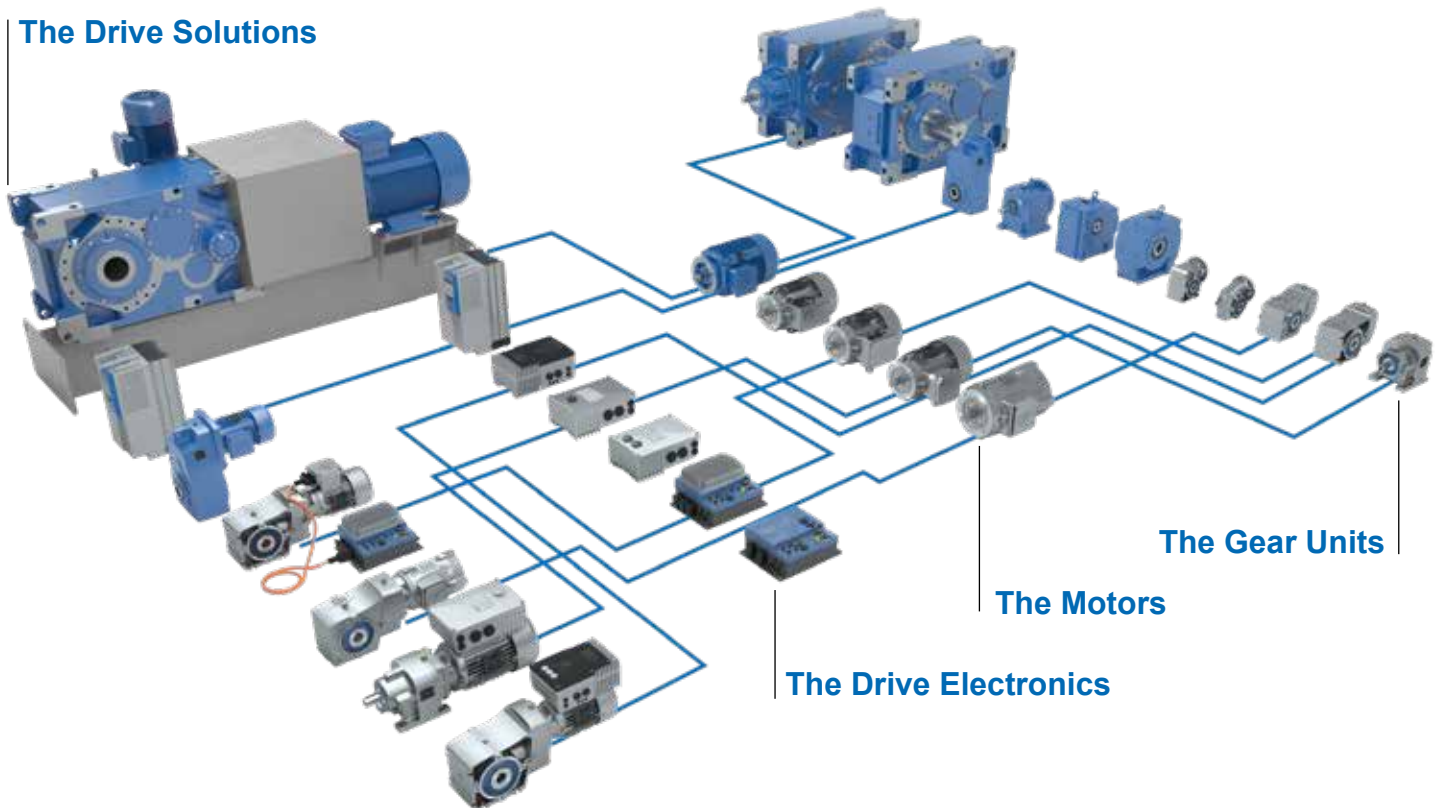


Throughout the world, thousands of reliable NORD drives are in operation in industries in which materials are transported by belt conveyors, e.g.:

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

COMPLETE DRIVE SYSTEMS FROM A SINGLE SOURCE

The Drive Solutions



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