

Drive solutions for screw conveyors



Reliable under extreme conditions –
NORD driven screw conveyors in the
heat of Indonesia



Grains / Bulk Material

Cement / Bulk Material

Lumber / Bulk Material

Food / Beverage

Waste Water / Heavy-Duty

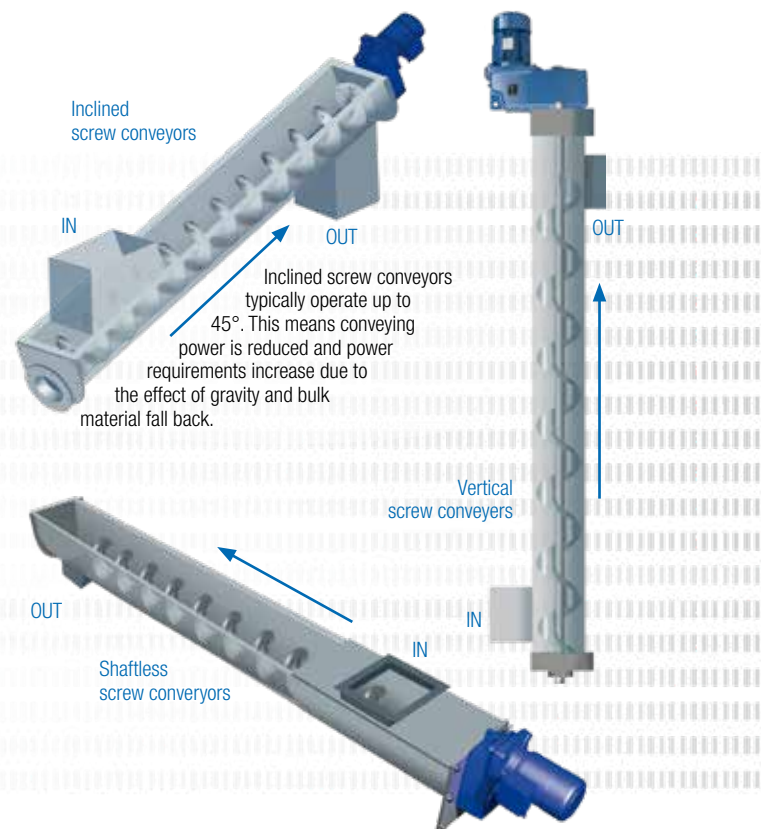
Cost effective and reliable

Screw conveyors are cost effective and reliable solutions for conveying and metering bulk materials even for high mass flow under extreme conditions.

The basic principle involves a rotating screw shaft supported between bearings through a U channel or closed cylinder to move bulk material in vertical, horizontal or inclined direction over a specific distance. The rotation can be realised by energy efficient direct mounted geared motor drives which have less friction losses compared to the traditional belt drive design.

The speed and ratio is constant and independent from external ambient conditions such as wet atmospheres etc., however speed control, safe torque control and smooth start, stop and reverse of the motor can be realised using NORD drive electronics.

During transport the material can also be precisely metered, mixed, dried from liquid, cooled down or heated by the specialist screw conveyor design.



Drive solutions for screw conveyors



Simplicity – NORD DRIVESYSTEMS eliminates the need for costly separate V-belt drives by providing efficient direct coupled motors.

Sealing options

- ▶ Viton lip seals
- ▶ Double shaft seals
- ▶ Taconite seals
- ▶ Labyrinth seals
- ▶ Grease impregnated felt seals (SCP)
- ▶ Dual gap seals (excludes particles) (SCP)
- ▶ Material evacuation ports for gearbox protection (SCP)
- ▶ Shaft material ditch – recess for dirt control (SCP)

Mounting

- ▶ Reduced bearing loads
- ▶ Solid or hollow shaft
- ▶ Direct coupled motor or ICE/NEMA cylinder
- ▶ Versatile flange – multiple bolt patterns
- ▶ CEMA 3-hole* tapered drive shafts (SCP) or customised shaft
 - ▶ Easy mounting
 - ▶ Easy removal

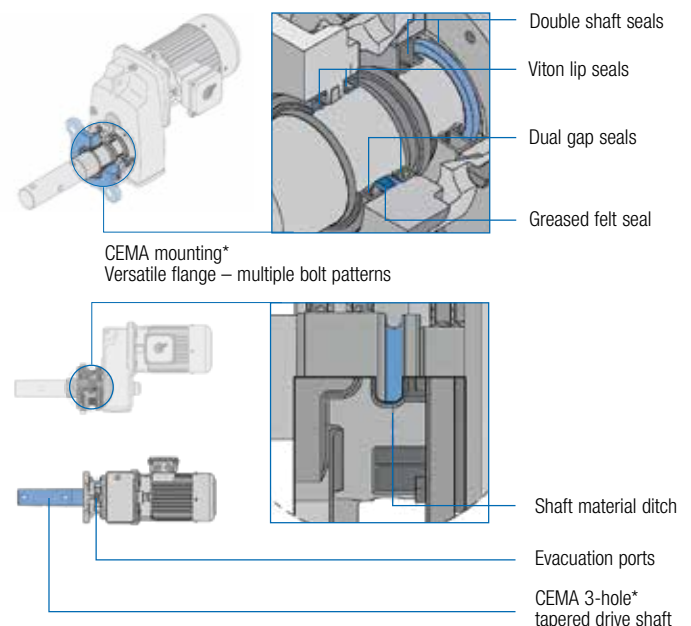
Flange

- ▶ CEMA mounting* (SCP) or B5, B14 flange
- ▶ High strength class coating
- ▶ Versatile flange – multiple bolt patterns

Advantages

- ▶ Easy mounting/easy removal
- ▶ Reduced bearing loads
- ▶ Reduced downtimes
- ▶ Reduced maintenance costs
- ▶ High efficiency and compact design

Features of the Screw Conveyor Package (SCP)



* Metric dimensions on request
CEMA = Conveyor Equipment Manufacturers Association



MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ Universal gear units
- ✓ Helical gear units 2- and 3-stage
Helical bevel gear units 3- and 4-stage
- ✓ Multiple mounting and cooling options
- ✓ Modified bearing options for high radial and axial load capacity
- ✓ Compact design
- ✓ All installation positions

Sizes: 11
Power: 1.5 – 6,000 kW
Torque: 15,000 – 282,000 Nm
Speed ratio: 5.54 – 30,000:1

UNICASE bevel gear units (Catalogue G1000)



- ✓ Foot, flange or face mounted
- ✓ Hollow or solid shaft
- ✓ Long life, low maintenance
- ✓ UNICASE housing

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

UNICASE parallel shaft gear units (Catalogue G1000)



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

Sizes: 15
Power: 0.12 – 200 kW
Torque: 110 – 100,000 Nm
Speed ratio: 4.03 – 15,685.03:1

Motors: Standard motors with recommendable options such as:



IP66 Protected against water and dust

RD/RDD Rain Drip Canopy /
Double Fan Drip Cover

PTC / KTY / Resistance thermometer
PT100

IE2 motors for inverter driven motors

IE2 motors for direct online driven motors



Hazardous area ATEX

All gear units are also available as:
Dust explosion protected drive solution
Gas explosion protected drive solution

Available options and solutions:

- ▶ Direct mounting, elastic coupling or belt at input shaft to transfer torque
- ▶ Backstop to avoid return of material in case of power failure
- ▶ Special seals to protect the gear box, e.g. in case difficult ambient conditions
- ▶ Hollow shaft, solid shaft – depending on screw conveyor connection
- ▶ Fixing element for hollow shaft mounting
- ▶ Shrink disc for hollow shaft mounting
- ▶ Cover (IP66) to provide additional protection
- ▶ Screw conveyor package (SCP) for CEMA standard in North America
- ▶ Stainless steel shafts for corrosion protection
- ▶ NORD nsd tupH and food grade oil for food and beverage applications
- ▶ ATEX for explosive atmospheres
- ▶ NORD soft starter for smooth start, stop and reverse operation
- ▶ NORD frequency inverter for speed and torque control and process control

Energy efficient

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

- ▶ High efficiency helical and bevel gear units achieve optimum power transmission performance.
- ▶ NORD motors comply with international energy efficiency classes up to IE4.



- ▶ NORD frequency inverters have energy saving functions to effectively reduce energy consumption.

Complete drive solutions from a single source



NORD DRIVESYSTEMS Group

- ▶ Family business from Bargteheide near Hamburg with more than 4,100 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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