

Drive solutions for the metal industry

Complete drive solutions from a single source



NORD DRIVESYSTEMS Group



Industrial gear units



Geared motors



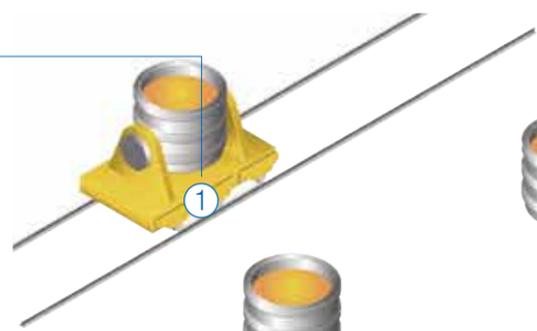
Frequency inverters and motor starters

- ▶ Headquarters and technology centre in Bargteheide near Hamburg.
- ▶ Innovative drive solutions for more than 100 branches of industry.
- ▶ 7 production locations with cutting edge technology produce gear units, motors and drive electronics for complete drive systems from a single source.
- ▶ NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries, providing local stocks, assembly centres, technical support and customer service.
- ▶ More than 4,100 employees throughout the world create customised solutions.



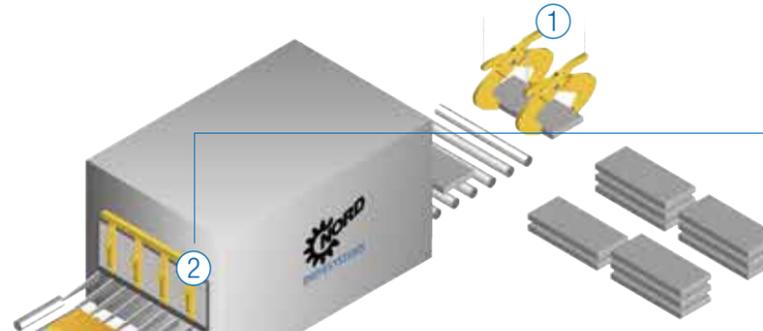
1 Logistics applications

Different logistic applications require a variable range of geared motors.



2 Furnaces

Drive systems for various furnaces such as pre-heating furnaces, heat treatment furnaces and walking beam furnaces.



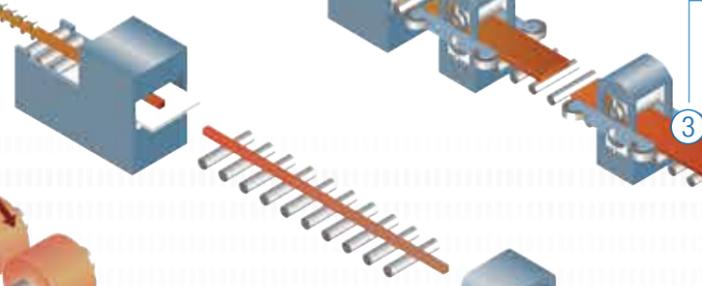
6 Continuous casting

The continuous casting process often involves extremely high temperatures and confined installation spaces.



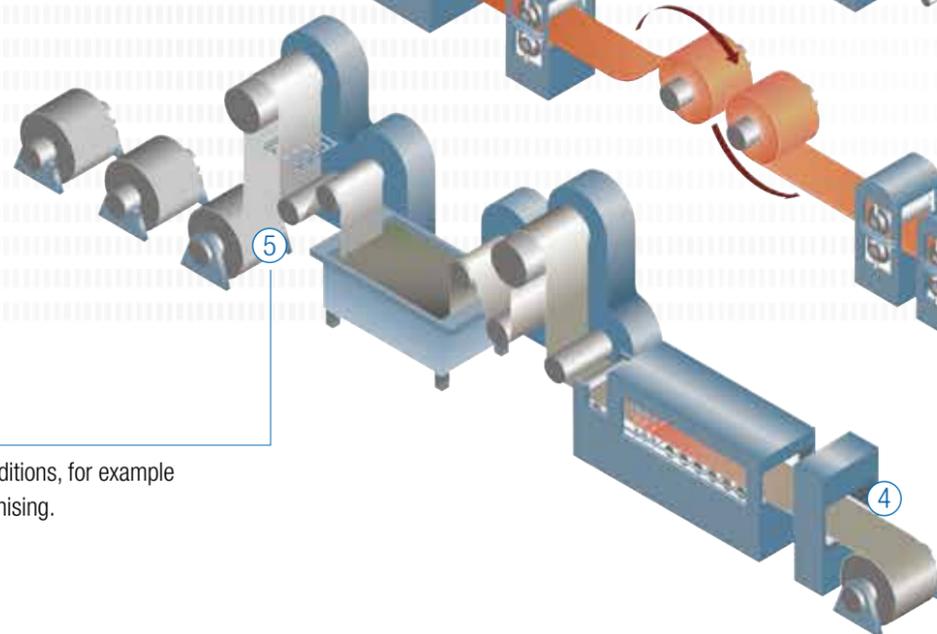
3 Hot rolling

Drives for hot rolling processes have to withstand the extreme ambient conditions and highly irregular operating modes.



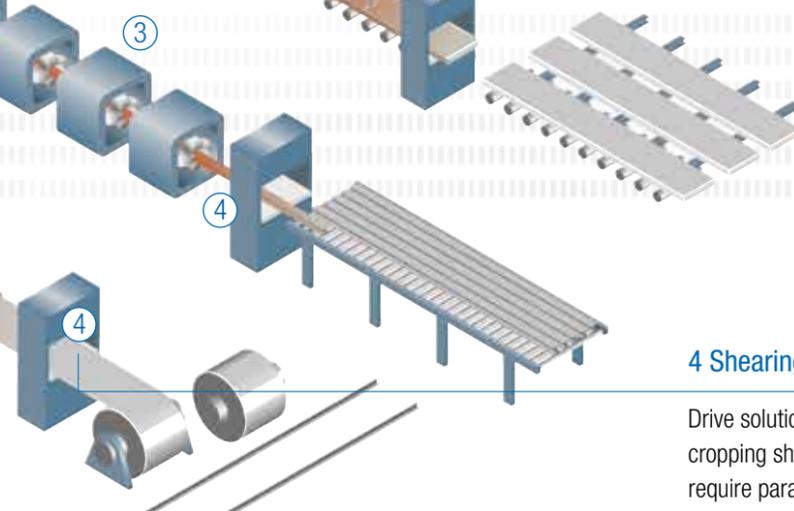
5 Processing lines

Drive solutions for aggressive conditions, for example for hardening, coating and galvanising.



4 Shearing lines

Drive solutions for shearing lines such as cropping shears and side shearing machines require parallel gears and unventilated motors.



NORD DRIVESYSTEMS is a German-based global supplier of complete, robust and reliable drive systems. NORD supplies customised solutions for the extreme conditions which are prevalent in the metal industry.

Typical fields of application:

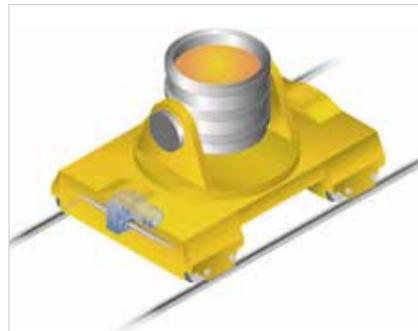
- ▶ Continuous casting
- ▶ Furnaces
- ▶ Hot rolling
- ▶ Accelerated cooling sections
- ▶ Handling
- ▶ Processing lines

NORD drive technology achieves long lifetimes, even under extremely harsh conditions. Regardless of extreme electrical and mechanical loads, the systems ensure full performance and reliable operation at all times.

- ▶ Switching operation 24/7
- ▶ High accelerations
- ▶ High peak loads
- ▶ Reversing mode
- ▶ High ambient temperatures
- ▶ High water pressures and scale

NORD DRIVESYSTEMS provides:

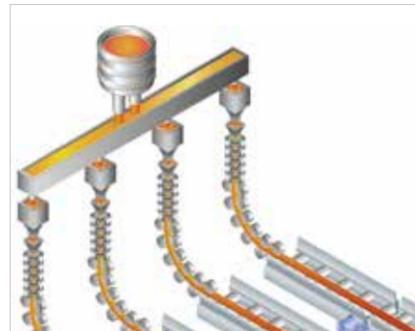
- ▶ Extensive knowledge of applications and technical support
- ▶ Complete drive solutions from a single source
- ▶ Strong global presence and service
- ▶ Thousands of installed drives in the metal industry
- ▶ Wide range of products with high quality standards
- ▶ Ultimate reliability and robustness
- ▶ Recognised product quality in accordance with international standards: ISO 9001, UL, CSA, GOST-R, CCC and ATEX



Logistics applications

Different logistic applications require a variable range of geared motors – from precise mechatronic drive systems up to high power industrial geared motors. NORD supplies tailor-made solutions for intralogistics applications of all kinds.

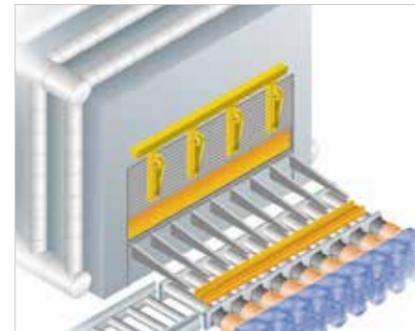
- ▶ Cranes
- ▶ Ladle handling
- ▶ Roller replacement carriages
- ▶ Warehouse systems



Continuous casting

The continuous casting process often involves extremely high temperatures and confined installation spaces.

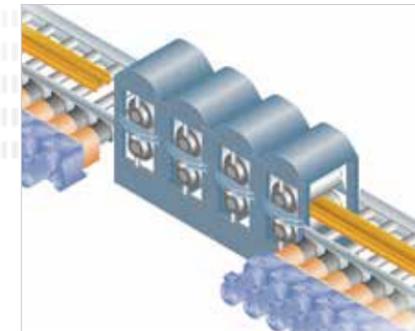
- ▶ Usually right-angled bevel gear units
- ▶ Insulation class ISO H recommended
- ▶ Unventilated IC410 motors or externally ventilated IC416 motors
- ▶ High temperature oil and Viton seals



Furnaces

NORD provides the optimum drive systems for various furnaces such as pre-heating furnaces, heat treatment furnaces and walking beam furnaces.

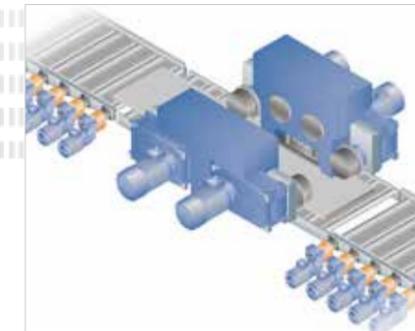
- ▶ IC410 ring-rib motors
- ▶ ISO H insulation
- ▶ High ambient temperatures
- ▶ Individually controlled rollers
- ▶ Optimum synchronisation of multiple rollers



Hot rolling

Drives for hot rolling processes have to withstand the extreme ambient conditions and highly irregular operating modes, heavy peak loads and very high temperatures.

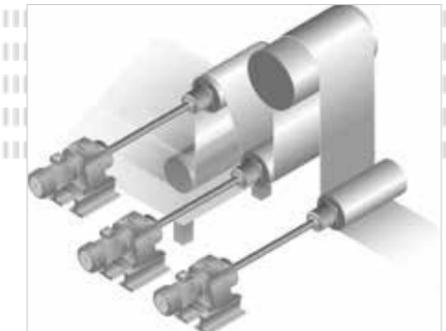
- ▶ IC410 ring-rib motors
- ▶ High blocking times
- ▶ ISO H insulation
- ▶ High accelerations
- ▶ Reversing mode



Shearing lines

Drive solutions for shearing lines such as cropping shears and side shearing machines mainly consist of a combination of parallel shaft gear units with large hollow shaft diameters and unventilated motors.

- ▶ Highest cycle rates
- ▶ Highest accelerations
- ▶ High peak loads



Processing lines

A large number of motors are used in process lines, for example for hardening, coating and galvanising, where they have to withstand the prevalent aggressive conditions.

- ▶ Drives with wide speed ranges
- ▶ Drives with heavy duty encoders and brakes
- ▶ Special coatings
- ▶ Optimum synchronisation of multiple rollers

Drive solutions for the metal industry

Reliable drive solutions – satisfied customers



Parallel shaft geared motors for rolling mills

NORD DRIVESYSTEMS supplies well-thoughtout, future-proof solutions for all processes in steel and aluminium plants throughout the world, which cater for current and future requirements.

NORD is now an international industry leader and supplies drive solutions to many well known metal producers such as:



Pressure rollers for hot rolling lines



Bevel geared motors for cooling bed chain feed tables



Logistics handling – ingot handling



Parallel shaft geared motors for shearing lines

Housing

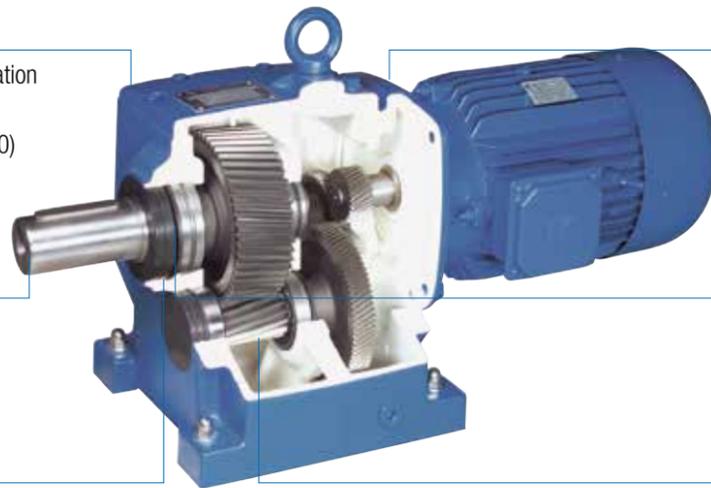
Robust housing material with vibration absorption EN-GJL-200 (GG200), optionally EN-GJS-400-15 (GGG40)

Shafts

Optional reinforced shaft material, e.g. 42CrMo4

Sealings

Optional seal solutions such as quadralip Viton shaft sealing rings, special labyrinth seals



Further options on request

Surfaces

Special painting

Bearings and shafts

Heavy-duty bearings and shafts

Lubrication

Synthetic lubricating oil

UNICASE helical in-line gear units (Catalogue G1000)



- ✓ Foot or flange mounted
- ✓ Long life, low-maintenance
- ✓ Optimum sealing
- ✓ UNICASE housing

Sizes: 11
Power: 0.12 – 160 kW
Torque: 10 – 26,000 Nm
Speed ratio: 1.35 – 14,340.31:1

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

UNICASE bevel gear units (Catalogue G1000)



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

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

MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ Parallel and angled gear units
- ✓ High precision axis alignment
- ✓ Long life, low-maintenance
- ✓ UNICASE housing

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

NORDAC FLEX SK200E frequency inverters (Catalogue E3000)



- ✓ Energy-saving functions
- ✓ Integrated POSICON positioning control
- ✓ Integrated PLC

Sizes: 4
Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 500 V
Power: 0.25 – 22 kW

NORDAC PRO SK500E frequency inverters (Catalogue E3000)



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

Sizes: 11
Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 480 V
Power: 0.25 – 160 kW

Unventilated motors (IC 410) – reliable under extreme conditions



- ✓ Fully encapsulated versions (up to IP66)
- ✓ Available as ring-rib or longitudinal rib versions
- ✓ Shock absorbing EN-GJL-200 (GG200) cast steel housing
- ✓ Reinforced, EN-GJS-400-15 (GGG40) cast steel A bearing plate
- ✓ Heavy-duty bearings and shafts
- ✓ Project-specific windings
- ✓ Hard torque characteristics with high starting torque
- ✓ Insulation systems for inverter feeds
- ✓ Insulation class ISO H

Ventilated NORD motors (IC 411 or IC 416) and other options are also available.

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