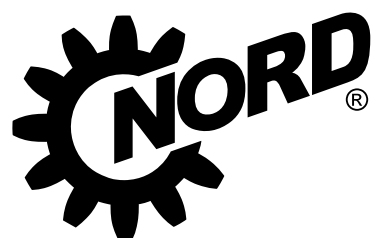


INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



EN

**DRIVE SOLUTIONS FOR
THE METAL INDUSTRY**



DRIVESYSTEMS

DRIVE SOLUTIONS FOR THE METAL 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, motor starters and field distributors

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 3,900 employees throughout the world create customised solutions.



DRIVE SOLUTIONS FOR METAL PRODUCTION PROCESSES

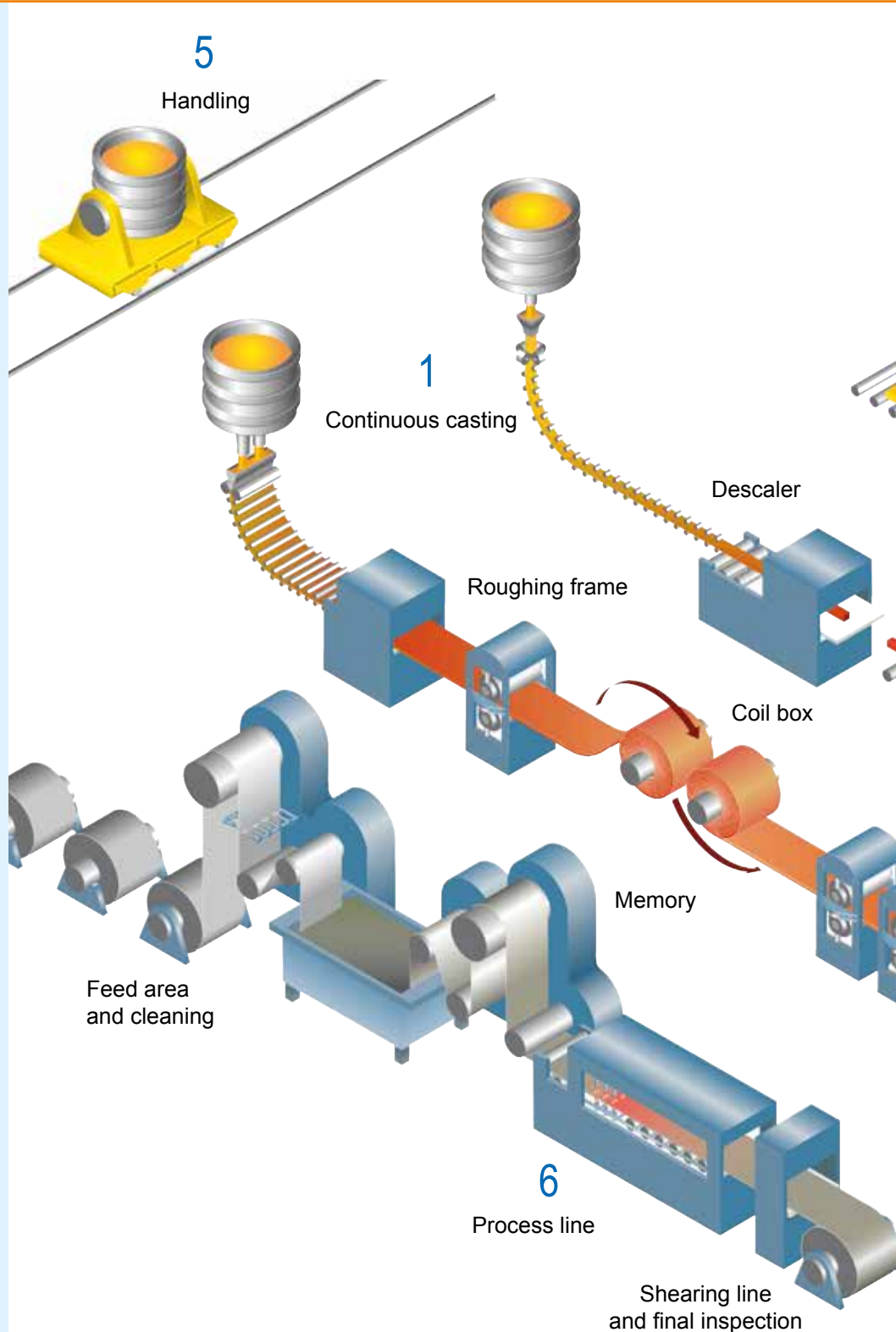
NORD DRIVESYSTEMS is a German-based global supplier of complete, robust and reliable drive systems. NORD DRIVESYSTEMS supplies customised solutions for the extreme conditions which are prevalent in the metal industry.

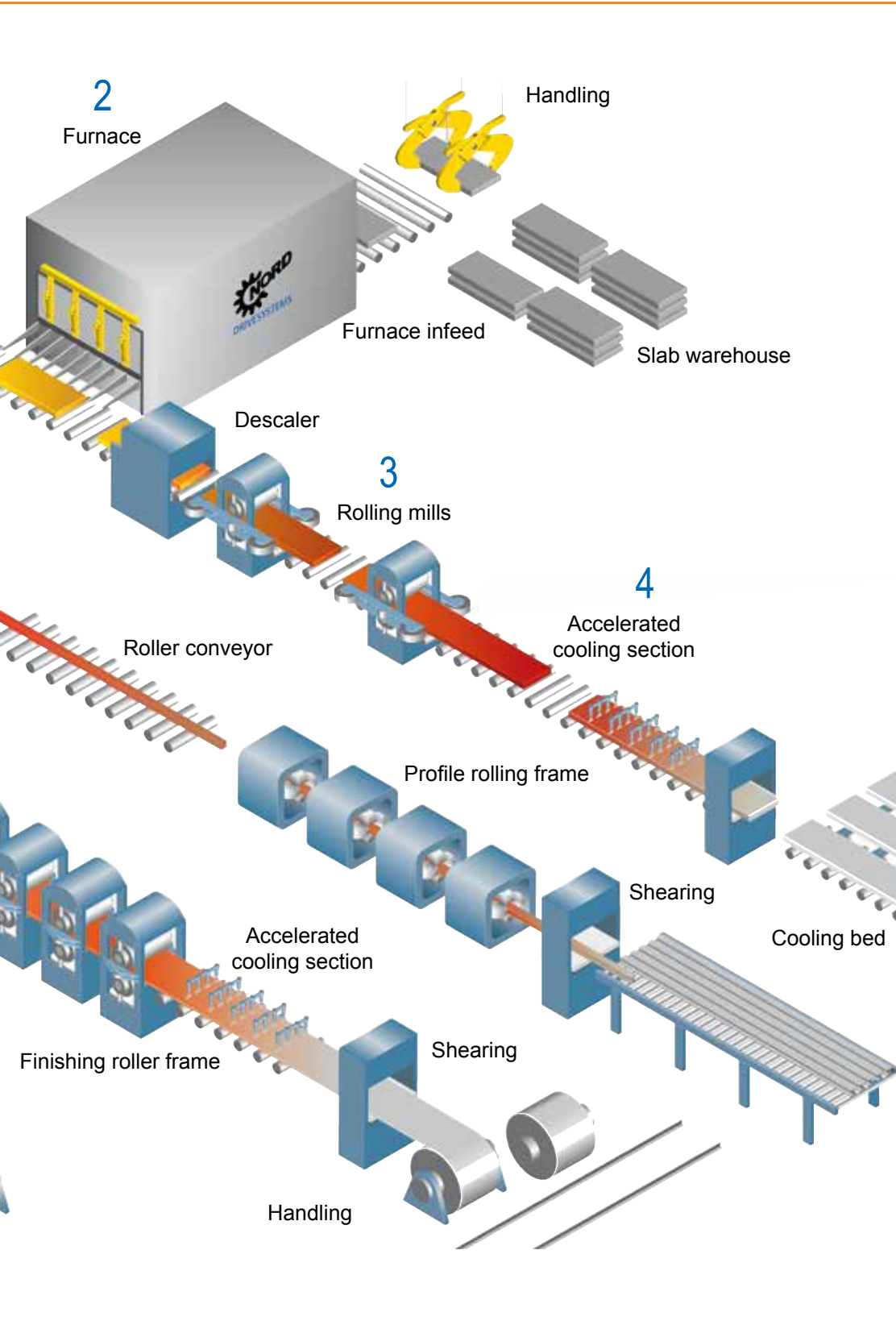
Typical fields of application:

- 1 Continuous casting
- 2 Furnaces
- 3 Hot rolling
- 4 Accelerated cooling sections
- 5 Handling
- 6 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



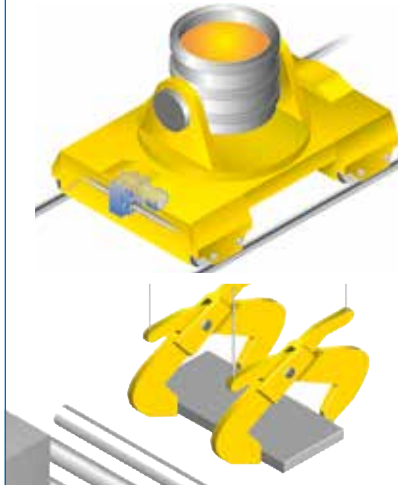


GOOD REASONS FOR NORD DRIVE SOLUTIONS

NORD DRIVESYSTEMS provides:

- 1 Thousands of installed drives in the metal industry
- 2 Extensive knowledge of applications and technical support
- 3 Complete drive solutions from a single source
- 4 Strong global presence and service
- 5 Wide range of products with high quality standards
- 6 Ultimate reliability and robustness
- 7 Approvals: ISO 9001, UL, CSA, GOST-R, CCC and ATEX

LOGISTICS APPLICATIONS

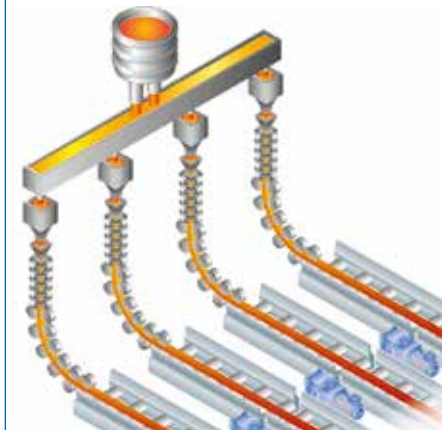


Different logistic applications require a variable range of geared motors – from precise mechatronic drive systems up to high power industrial geared motors.

NORD DRIVESYSTEMS supplies tailor-made solutions for intralogistics applications of all kinds.

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

CONTINUOUS CASTING



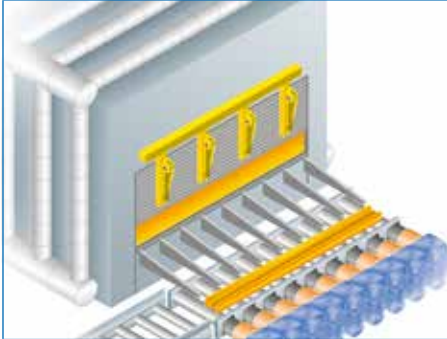
The continuous casting process often involves extremely high temperatures and confined installation spaces.

- 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





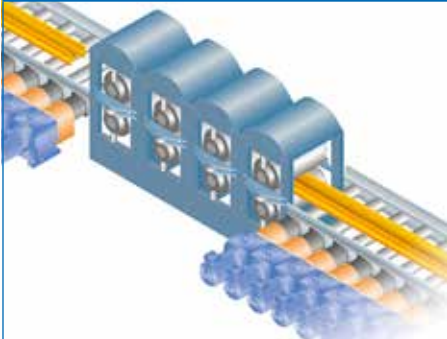
FURNACES



NORD DRIVESYSTEMS 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

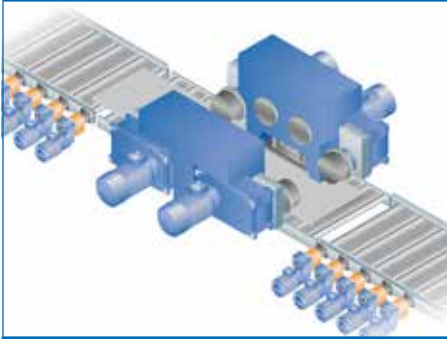
HOT ROLLING



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

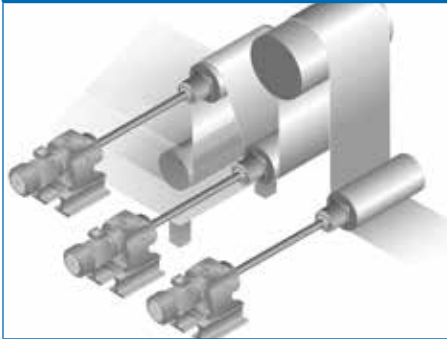
SHEARING LINES



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

PROCESS 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

RELIABLE DRIVE SOLUTIONS SATISFIED CUSTOMERS

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

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



Parallel shaft geared motors for rolling mills



Pressure rollers for hot rolling lines



Bevel geared motors for cooling bed chain feed tables

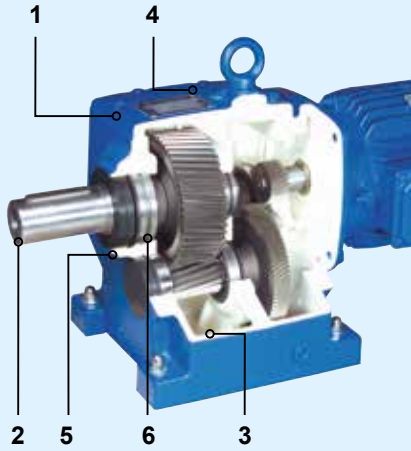


Logistics solutions – ingot handling

Parallel shaft geared motors for shearing lines



NORD DRIVE SOLUTIONS FOR THE METAL INDUSTRY





For heavy loads in hot and extreme environments:


- 1** Robust housing material with vibration absorption EN-GJL-200 (GG20), optionally EN-GJS-400-15 (GGG40)
- 2** Optional reinforced shaft material, e.g. 42CrMo4
- 3** Synthetic lubricating oil
- 4** Special painting
- 5** Optional seal solutions such as quadrilip Viton shaft sealing rings, special labyrinth seals
- 6** Heavy duty bearings and shafts

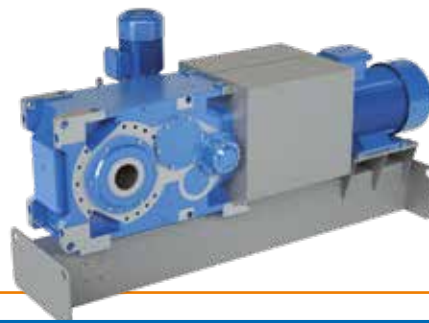
Further options on request.



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
Speed ratio	1.35:1 – 14,340.31:1

UNICASE parallel shaft gear units (Catalogue G1000)	
	✓ Foot-, flange- or hollow shaft-mounted
	✓ Hollow or solid shaft
	✓ Compact design
	✓ UNICASE housing
Power	0.12 – 200 kW
Torque	110 – 100,000 Nm
Speed ratio	4.03:1 – 6,616.79:1

UNICASE bevel gear units (Catalogue G1000)	
	✓ Foot-, flange- or hollow shaft-mounted
	✓ Hollow or solid shaft
	✓ UNICASE cast-iron housing
Power	0.12 – 200 kW
Torque	180 – 50,000 Nm
Speed 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 – 260,000 Nm
Speed ratio	5.60:1 – 30,000:1

NORDAC FLEX SK 200E frequency inverter (Flyer F3020)



- ✓ 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

NORDAC PRO SK 500E frequency inverter (Flyer F3050)



- ✓ Energy-saving function
- ✓ Integrated POSICON positioning control
- ✓ Plug-on communication module (field bus)

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.

Whether for continuous casting, furnaces, hot rolling, cooling lines, handling or process lines, NORD DRIVESYSTEMS provides robust and reliable drive systems for every application.



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