

INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



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**DRIVE SOLUTIONS FOR  
THE METALS INDUSTRY**

  
**DRIVESYSTEMS**

# NORD DRIVESYSTEMS GROUP SERVING THE METALS INDUSTRY



# NORD DRIVESYSTEMS GROUP

## Headquarters and Technology Center

→ close to Hamburg, Germany



## Innovative drive solutions

→ for more than 100 industries



Gear units



Gear component production

Motors



Motor production

Inverters and motor starters



Inverter production

## 7 state-of-the-art production plants

→ providing full-scale drive systems from a single source – geared motors, suitable electronics and software for required functionality



## 35 subsidiaries on 5 continents

→ providing local stock, assembly, production, technical support and customer service



## More than 3.000 employees around the world

→ providing application-specific solutions for our customers



[www.nord.com/locator](http://www.nord.com/locator)

# DRIVE SOLUTIONS FOR METAL PRODUCTION PROCESSES

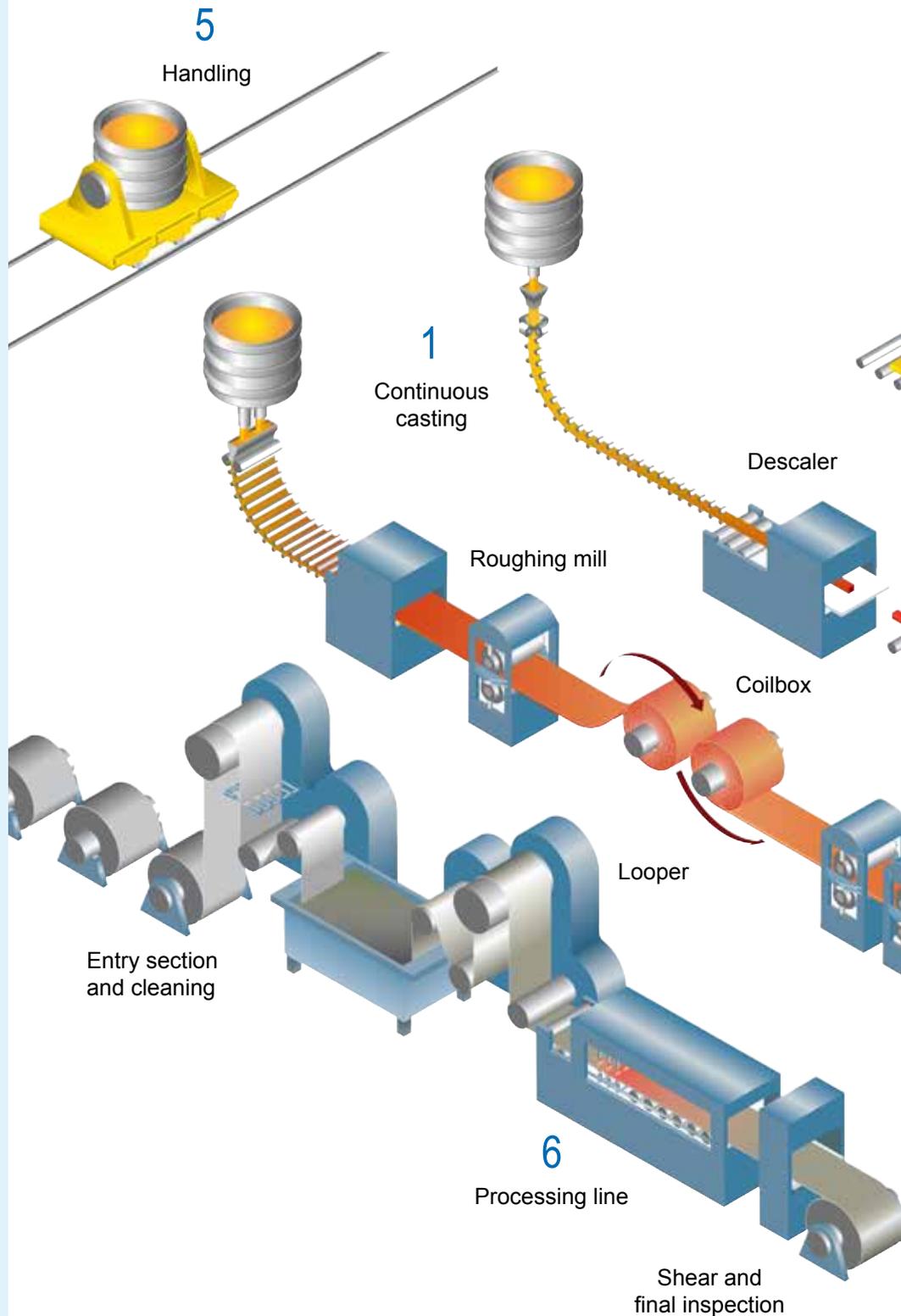
Based in Germany, NORD DRIVESYSTEMS is a systems provider of robust and reliable drive technology with a global reach. Extensive expertise for the metals industry enables NORD to supply tough, custom-manufactured drives suited to the extreme environments in this field.

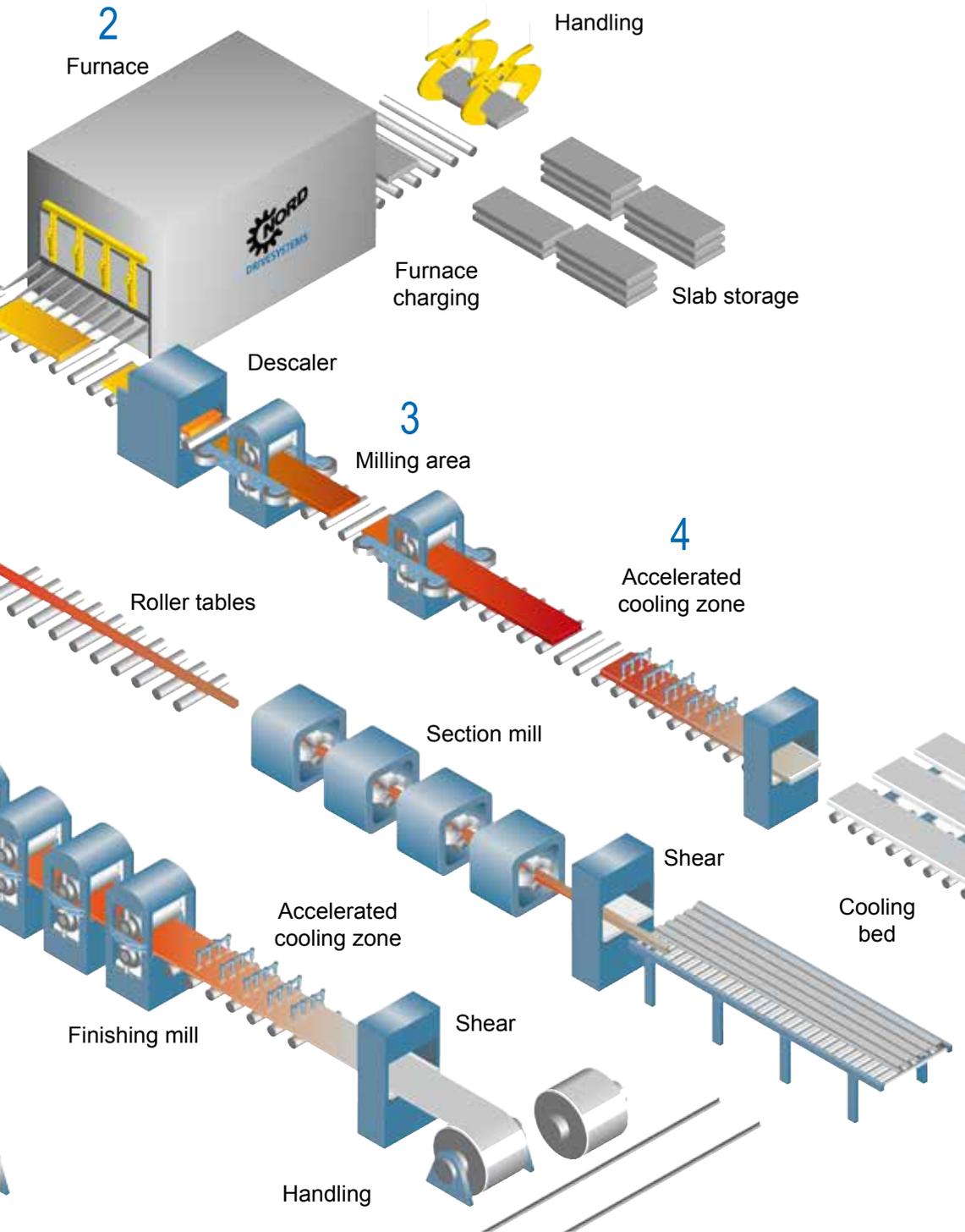
Solutions are available e.g. for:

- 1 Continuous casting
- 2 Furnaces
- 3 Hot rolling
- 4 Accelerated cooling zones
- 5 Handling
- 6 Processing lines

NORD provides highly durable solutions designed to withstand severe electrical and mechanical stress. Users can rely on uncompromised performance even in extremely demanding applications, e.g. featuring:

- 24/7 operation
- High acceleration rates
- Heavy shock loads
- Reversing operation
- High ambient temperatures
- High pressure water and tinder



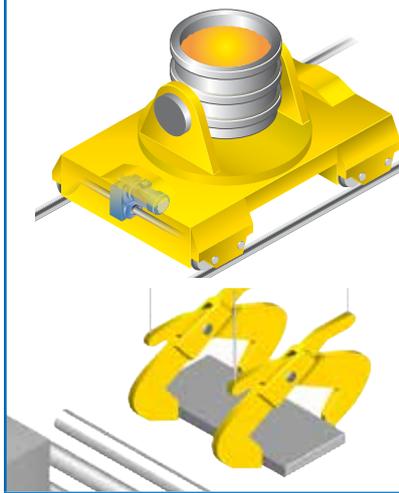


# GOOD REASONS FOR NORD DRIVE SOLUTIONS

**NORD DRIVESYSTEMS**  
provides:

- 1 Thousands of installed units in the metals industry
- 2 Strong application knowledge and technical support
- 3 Complete drive solutions from a single source
- 4 Strong worldwide presence and maintenance services
- 5 Large product portfolio with high quality standards
- 6 Excellent reliability and robustness
- 7 Certifications: ISO 9001, UL, CSA, GOST-R, CCC and ATEX

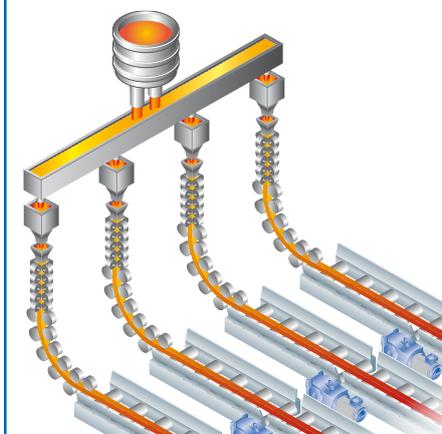
## LOGISTIC APPLICATIONS



Different logistics applications require a diverse range of geared motors – from precise mechatronic drive systems to heavy-duty industrial gear units. NORD offers suitable solutions for all kind of logistics applications.

- Cranes
- Ladle handing
- Roll change carriage
- Storage systems

## CONTINUOUS CASTING



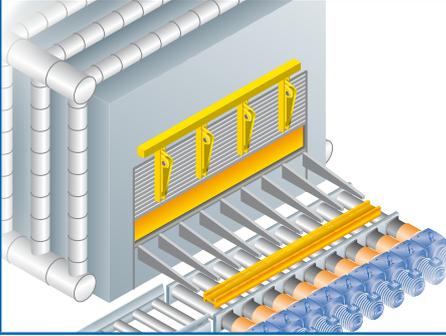
Continuous casting is characterised by extremely high temperatures and often limited installation space.

- Usually right-angled bevel gears
- Insulation class H recommended
- IC410 unventilated or IC416 forced cooling fan
- High temperature oil and Viton seals





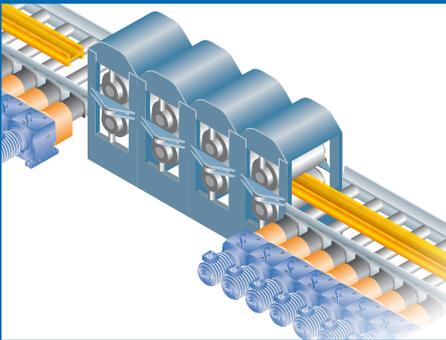
## FURNACES



NORD offers suitable drive systems for different furnaces such as reheating furnaces, heat treatment and walking beam furnaces.

- Circular fin motors in IC410 design
- ISO H insulation
- High ambient temperatures
- Individually controlled rollers
- Optimised synchronisation of several rollers

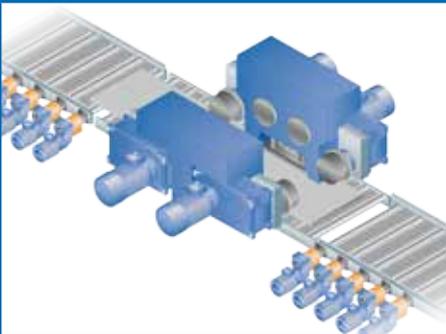
## HOT ROLLING



Drives for hot rolling processes must exceedingly challenging toughest ambient conditions, extreme irregular operation modes, heavy shock load rates and very high temperatures.

- Circular fin motors in IC410 design
- Stall time capability
- ISO H insulation
- High acceleration rates
- Reverse operation

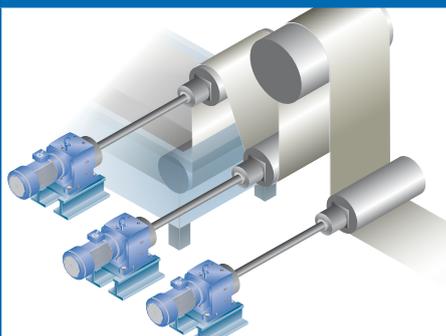
## SHEARING LINE



Drive solutions for shearing lines such as crop shears and side trimmers are mainly a combination of parallel shaft gears with large hollow shaft diameters and unventilated motors.

- Highest cycle rates
- Highest acceleration rates
- Heavy shock loads

## PROCESSING LINE



Many geared motors are used at rollers in aggressive environments like galvanising, annealing or coating lines.

- Drives with a wide speed range
- Drives with heavy-duty encoders and brakes
- Special coatings
- Optimised synchronisation of several rollers

# RELIABLE DRIVE SOLUTIONS SATISFIED CUSTOMERS

In metal plants all over the world, NORD DRIVESYSTEMS provides comprehensive drive solutions for every process. NORD systems are engineered to meet current requirements today – and stand up to future challenges as well.

NORD DRIVESYSTEMS is among the world leaders in this business and supplies drive solutions for many well known metal manufacturers around the world such as:



Parallel shaft geared motors for roller tables



Pinch rollers in the hot rolling line



Bevel geared motor for cooling bed - chain transfer table

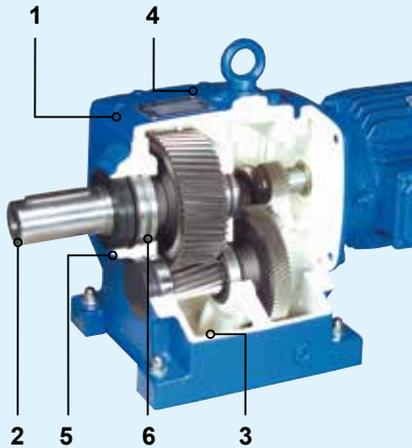


Logistics solutions - slab handling

Parallel shaft geared motors for shearing lines



# NORD DRIVE SOLUTIONS FOR THE METALS INDUSTRY



**For high loads in hot and harsh 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 lubricants
- 4** Special coatings
- 5** Optional sealing solutions e.g. Quadralip Viton shaft seals, special labyrinth
- 6** Heavy-duty bearings and shafts

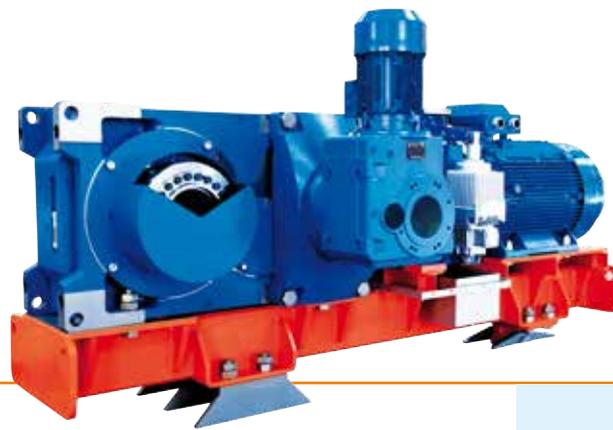
**Further options on request.**



Helical gear units (Catalog G1000)									
	<ul style="list-style-type: none"> <li>✓ Foot or flange mounting</li> <li>✓ Long life, low maintenance</li> <li>✓ High quality sealing</li> <li>✓ UNICASE housing</li> </ul>								
	<table border="1"> <tr> <td>Sizes</td> <td>11</td> </tr> <tr> <td>kW</td> <td>0.12 – 160</td> </tr> <tr> <td>Nm</td> <td>23 – 23,160</td> </tr> <tr> <td>i</td> <td>1.24:1 – 14,340.31:1</td> </tr> </table>	Sizes	11	kW	0.12 – 160	Nm	23 – 23,160	i	1.24:1 – 14,340.31:1
	Sizes	11							
	kW	0.12 – 160							
Nm	23 – 23,160								
i	1.24:1 – 14,340.31:1								

Parallel shaft gear unit (Catalog G1000)									
	<ul style="list-style-type: none"> <li>✓ Foot, flange or shaft mounting</li> <li>✓ Hollow or solid shaft</li> <li>✓ Short design</li> <li>✓ UNICASE housing</li> </ul>								
	<table border="1"> <tr> <td>Sizes</td> <td>15</td> </tr> <tr> <td>kW</td> <td>0.12 – 200</td> </tr> <tr> <td>Nm</td> <td>65 – 90,000</td> </tr> <tr> <td>i</td> <td>4.03:1 – 6,616.79:1</td> </tr> </table>	Sizes	15	kW	0.12 – 200	Nm	65 – 90,000	i	4.03:1 – 6,616.79:1
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	kW	0.12 – 200							
Nm	65 – 90,000								
i	4.03:1 – 6,616.79:1								

Frequency inverter SK 200E (Catalog F3020)							
	<ul style="list-style-type: none"> <li>✓ Energy-saving function</li> <li>✓ Ethernet-based bus systems</li> <li>✓ Integrated "Posicon" position control</li> <li>✓ Optional on-board AS interface integration</li> </ul>						
	<table border="1"> <tr> <td>Sizes</td> <td>4</td> </tr> <tr> <td>U[V]</td> <td>1~100 ... 120 ± 10% 1~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 500 -20% / +10%</td> </tr> <tr> <td>P[kW]</td> <td>0.25 – 22</td> </tr> </table>	Sizes	4	U[V]	1~100 ... 120 ± 10% 1~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 500 -20% / +10%	P[kW]	0.25 – 22
	Sizes	4					
	U[V]	1~100 ... 120 ± 10% 1~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 500 -20% / +10%					
P[kW]	0.25 – 22						



### Bevel gear unit (Catalog G1000)



- ✓ Up to 95 % efficiency
- ✓ Foot, flange or shaft mounting
- ✓ Hollow or solid shaft
- ✓ UNICASE housing

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

### Industrial gear units (Catalog G1050)



- ✓ Foot, flange or shaft mounting
- ✓ Long life, low maintenance
- ✓ Parallel axis and right-angled gear units
- ✓ UNICASE housing

Sizes	8
kW	2.2 – 1,000
Nm	25,000 – 242,000
i	5.54: 1 – 1,600.00 : 1

### Frequency inverter SK 500E (Catalog F3050)



- ✓ Energy-saving function
- ✓ "Posicon" positioning control
- ✓ Plug-in modules for communication (field bus)
- ✓ Ethernet-based bus systems

Sizes	10
U[V]	1~110 ... 120 ± 10% 1/3~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 480 -20% /+10%
P[kW]	0.25 – 90 kW



### Unventilated (IC 410) Motors – reliable under extreme conditions.

- Completely enclosed design (up to IP66)
- Available as circular fin or longitudinal fin designs
- Shock-absorbing cast iron housings EN-GJL-200 (GG200)
- Reinforced A end shield made from robust cast iron EN-GJS-400-15 (GGG40)
- Heavy-duty bearings and shafts
- Individual project-based winding adaption
- Hard torque characteristics with high breakdown torque value
- Insulation systems for inverter feedings
- Insulation class ISO H

### Ventilated (IC411 or IC416) NORD motors and other options are also available.



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