

Intelligent Drivesystems, Worldwide Services



NORD DRIVESYSTEMS

The company

Intelligent drive solutions since 1965



Best prospects

As a family business we think of the long term and internationally: A wide range of products, highest quality standards, the latest technologies in mechanics and electronics, great depth of production and a global presence are our strategies for success!

In 1965 we started business as a supplier of geared motors. In those days we produced gearbox housings, shafts and flanges, and purchased all other components. With the inauguration of our own gear production in 1977 we took the first step towards increasing our depth of production and ensuring a high standard of quality. Since setting up our own electronics production in the middle of the 1980s we have become a complete drive solution supplier. The establishment of our own motor factory in Italy in the 1990s con-

siderably improved our flexibility. We have always invested in the very latest technology for each new division and have increased our know-how in order to offer our customers the very highest quality at all times. Parallel to this, we have orientated our activities to the international market and founded our first foreign subsidiaries more than 30 years ago in the USA, Sweden and France. Today, we are always close to our customers on all five continents, with our own assembly and service facilities.

NORD DRIVESYSTEMS is one of the world's leading complete suppliers of mechanical and electronic drive technology. We will continue to sustainably pursue and extend our successful strategies in the future. For this, our company policies of consistent customer orientation and closeness to customers are always at the centre of our activities.



Jutta Humbert,
Managing director



Ullrich Küchenmeister,
Managing director



**1965**

G. A. Küchenmeister and G. Schlicht founded Getriebebau NORD in Bargteheide with innovative ideas.

1977

The setup of our own gear production in Glinde, near Hamburg, guarantees 100% NORD quality and great flexibility.

1979

Founding of the first subsidiaries for assembly abroad, starting with the USA, France and Sweden.

1981

Development of the revolutionary unicast housing principle

1984

Start of our own electronics production in the Aurich factory.

1990

Establishment of our own GLOBAL NORDnet for efficient coordination between the headquarters in Bargteheide and our subsidiaries throughout the world.

1991

The NORD production facility for gear units and shafts comes onstream in Gadebusch.

1996

Setup of our own motor production in the highly efficient factory in Italy.

2000

Development of decentralised drive electronics as a compact unit consisting of the gear unit, motor and frequency inverter.

2002

Introduction of the modular UNIVERSAL worm gear system as an especially efficient modular system for almost unlimited driver versions.

2009

Introduction of the NORD industrial gear unit series with unicast construction up to 200,000 Nm.

2011

NORD DRIVESYSTEMS is celebrating the inauguration of the fourth construction stage of the production facility in Gadebusch and the 25th anniversary of NORD GEAR Ltd in Brampton, Canada. In China, NORD is celebrating the opening of a second factory in Tianjin, about 100 km south-east of Beijing, while on the fifth continent, the NORD Australian subsidiary is opening in Darwin.

2012

At present, NORD DRIVESYSTEMS has **35 subsidiaries throughout the world**. The NORD sales and service network is supplemented by sales and service partners in more than 60 countries. With a highly motivated team of employees and a complete range of technologically excellent and high quality drive technology products, the company is ideally equipped to face the challenges of the future.



Local production

We set the very highest standards for the production of our drive components. Because of this, we have set up a network of production factories for motors, gear units and drive electronics.

Advice on projects, high availability of the required drive technology, short delivery times and rapid local service make NORD a flexible and dependable partner throughout the world. The NORD headquarters

with our technology and logistics centre and administration is located in Bargteheide, near Hamburg. In addition, there are further production facilities in Germany, Italy, Poland, the USA and China. Because we are

close to the port of Hamburg and Hamburg airport, our assembled drive units and individual components can be rapidly shipped to anywhere in the world.



NORD headquarters in Bargteheide near Hamburg, Germany - research, development and logistics centre





Glinde, near Hamburg

Gear production



Aurich in Lower Saxony

Frequency inverter production



Gadebusch in Mecklenburg-Vorpommern

Housing and shaft production



San Giovanni Persiceto

Italy Motor production



Nowa Sol, Polen

Gear cutting technology production



Waunakee, Wisconsin, USA

Housing and shaft production



Suzhou near Shanghai, China

Motor production



Global presence

Thanks to our assembly and service facilities in 35 of the most important industrial nations throughout the world, NORD drive solutions can be assembled to order and commissioned locally.

In more than 30 other countries, agencies ensure that there is always close contact between NORD DRIVESYSTEMS and its customers.

Europe



Hillegom near Amsterdam
Netherlands



Vieux Thann
France



St. Petersburg, Russia



Charlotte, North Carolina, USA



Arnegg, Switzerland



Tampere, Finland



Tuzla near Istanbul, Turkey



Corona, California, USA



Aabenraa, Denmark



Abingdon, UK



Bratislava, Slovakia



Brampton near Toronto, Canada



Sabadell, Spain



Prague, Czech Republic



Ola Aveiro, Portugal



Guarulhos São Paulo, Brazil



Upplands Väsby near Stockholm
Sweden



Linz, Austria



Drøbak near Oslo, Norway

North and South America



DRIVESYSTEMS



If you wish to convince yourself about our products, we would be please to welcome you at one of the more than 50 major industrial fairs where we exhibit every year throughout the world. Of course, you can also visit us at our headquarters in Bargteheide near Hamburg.



Visit our interactive online exhibition stand under www.expo-nord.de

Asia / Australia



**Tianjin
China**



**SiHeung
Korea**



**Desa Pakulan near Jakarta
Indonesia**



Pune, India



Singapore, Singapore



Melbourne, Australia



Precision Production

As early as the 1980s, NORD developed the most important innovation in gear unit construction to the present day. The unicast concept. All bearing holes and sealing surfaces are machined in a single stage on the latest CNC centres.

The benefits for our customers include extreme reliability and exceptional sealing, safe handling of even the largest output torques, high axial and radial load bearing, quiet running and low maintenance and especially long operating life. NORD produces helical, parallel shaft, bevel gear

and worm gear units and is the only manufacturer in the world that produces large scale industrial gear units up to 242 kNm as unicast versions. Our own gear production facility and motor production guarantees that our customers always obtain the high quality and reliable deliveries typical for

NORD. Supplemented by its own electronics production facilities, NORD offers its customers complete, sophisticated system solutions with the very highest levels of economy and efficiency.



Shaft production

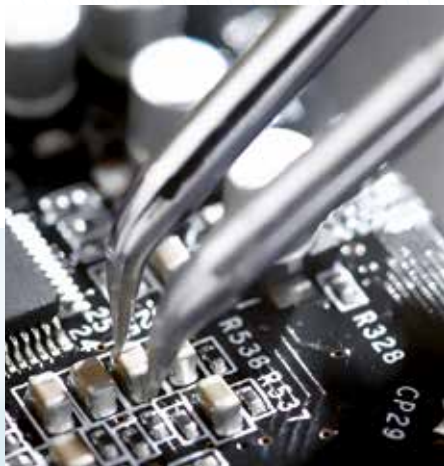


Gear production



Housing production





Electronics production

2-stage NORDBLOC.1 bevel gear unit with SK 200E decentralised frequency inverter and IE2 motor.



Motor production



Excellent quality

NORD drive components comply with the standards DIN ISO 9001, DIN 3990, NIEMANN and AGMA. Many certifications demonstrate that we consistently apply our quality management system.

On the subject of "explosion hazard areas" we were even one step ahead of legislation; consistently setting up our entire production according to current ATEX standards at an early date. In our technology centre in Bargteheide near

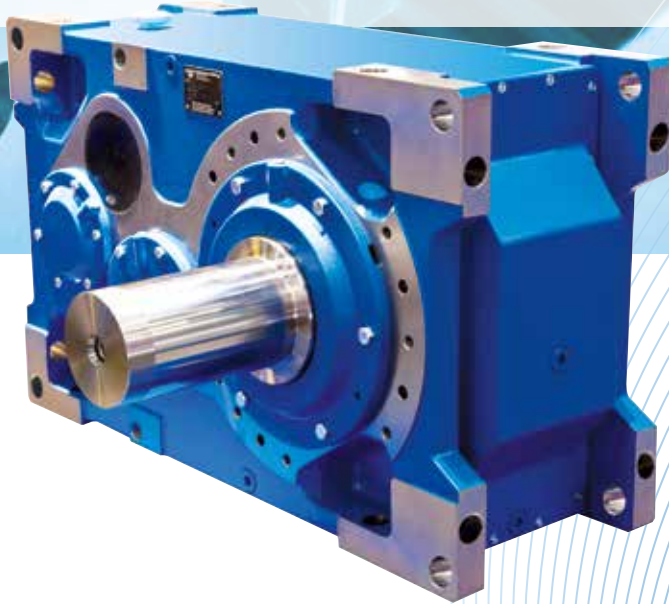
Hamburg, our engineers develop optimum drive solutions. For example, the unicas housing, which was developed by NORD in 1981, is now a true milestone for housing production throughout the world. Consistent quality controls, including

a modern sound measuring chamber, guarantee that our customers receive excellent quality products down to the very last detail. The final assembly impressively shows the precise interaction of all of the components which we produce.



We employ consistent quality controls according to national and international standards in every phase of the development and production of our products.





Consistent philosophy

With NORD DRIVESYSTEMS, the whole is always more than the sum of its parts because users do not just need drive components, but rather complete solutions and functioning systems.

Because of this, our product development pursues a consistent system philosophy, which is reflected in the perfectly matched modules of our wide range of products. In turn, we are able to individually tailor the particular drive solution to our customers' requirements.

The perfectly matched individual components form the basis for a wide range of versions, great flexibility with short planning and installation times. Our customers also benefit from cost effective drive solutions and our ability to deliver them quickly.

NORDBLOC.1 - Geared motors



Centralised and decentralised drive electronics



NORD IE2/IE3 motors





The SMART SOLUTIONS from NORD are based on the principle of a function pyramid: Motors, control units and gears are just as much components as our extensive range of system modules such as planning, project management, installation and service.

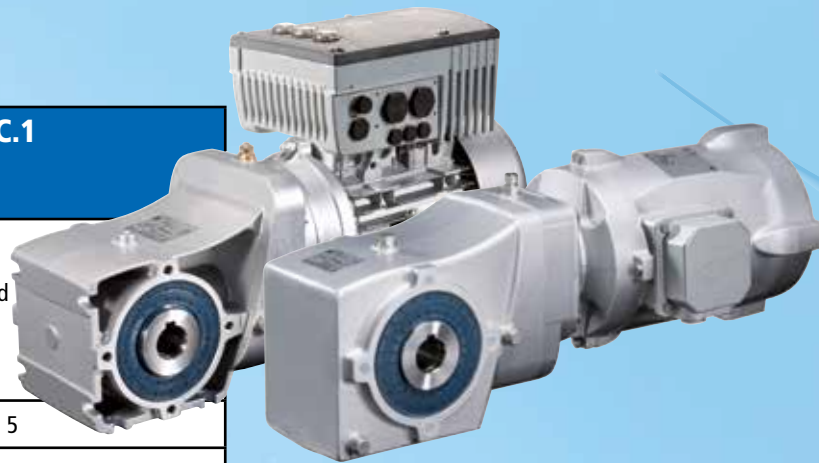


Everything from a single source

The perfectly matched individual components form the basis for a wide range of versions, greater flexibility with short planning and installation times.

The modular structure of our product building blocks guarantees maximum variability and flexibility for the configuration of a wide range of individual drive solutions from a single source. High efficiency gear units combined with energy-efficient motors and decentralised

or centralised frequency inverters provide a wide range of system solutions with great efficiency and economy. If required, we can provide our customers with completely functional, pre-programmed industrial solutions, including all documentation, as a complete logistics package.



2-stage NORDBLOC.1 bevel gear unit (Catalogue G1014)

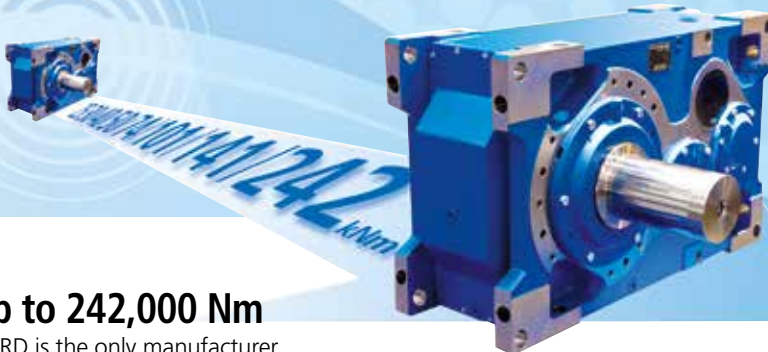
- ✓ Up to 97% efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE housing

Sizes	5
kW	0.12 - 9.2
Nm	90 - 660
i	3.58:1 - 70:1

Industrial gear units (Catalogue G1050)

- ✓ All bearing points and sealing surfaces are machined in one operation
- ✓ No separating joints in the housing, no sealing surfaces subject to torque
- ✓ High-precision axis alignment, quiet running
- ✓ Long life, low maintenance service
- ✓ Short, compact design
- ✓ Gear ratios from 5.54 to 400:1 with the same foot dimensions
- ✓ Parallel axis and right-angled gear units

Sizes	8
kW	2.2 – 1,000
kNm	25/30/40/50/74/101/141/242
i	5.54:1 – 1,600.00:1



Up to 242,000 Nm

NORD is the only manufacturer that produces modular industrial gear units with an output torque of 242,000 Nm in a one-piece unicast housing.



Helical gear units

(Catalogue G1000)

- ✓ Foot or flange mounted
- ✓ UNICASE housing



Sizes	11
kW	0.12 – 160
Nm	23 – 23,160
i	1.24:1 – 14,340.31:1

Parallel shaft gear units

(Catalogue G1000)

- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ UNICASE housing

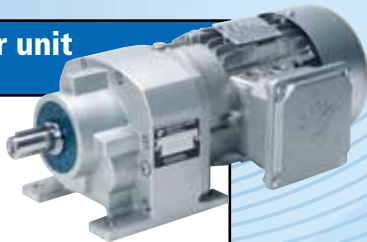


Sizes	15
kW	0.12 – 200
Nm	65 – 90,000
i	4.03:1 – 6,616.79:1

NORDBLOC. 1 gear unit

(Catalogue G1012)

- ✓ Foot or flange mounted
- ✓ Die-cast aluminium housing (5 sizes)
- ✓ UNICASE housing
- ✓ Dimensions compliant with industrial standards

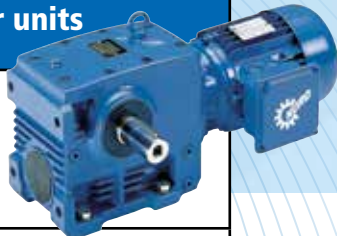


Sizes	8
kW	0.12 – 37
Nm	55 – 3,300
i	2.10:1 – 456.77:1

Helical worm gear units

(Catalogue G1000)

- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE housing



Sizes	6
kW	0.12 – 15
Nm	46 – 3,090
i	4.40:1 – 7,095.12:1

2-stage bevel gear units

(Catalogue G1000)

- ✓ Up to 97% efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ Alternative to worm gear motors
- ✓ UNICASE housing

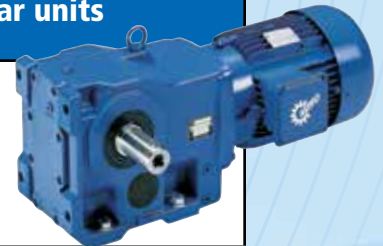


Sizes	5
kW	0.12 – 9.2
Nm	45 – 650
i	3.85:1 – 72.31:1

3-stage bevel gear units

(Catalogue G1000)

- ✓ Up to 95 % efficiency
- ✓ Shaft, foot or flange mounted
- ✓ Hollow or solid shaft
- ✓ UNICASE housing

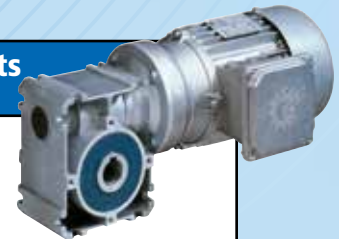


Sizes	11
kW	0.12 – 200
Nm	180 – 50,000
i	8.04:1 – 13,432.68:1

SI worm gear units

(Catalogue G1035)

- ✓ Modular
- ✓ Universal mounting
- ✓ Lifetime lubrication
- ✓ IEC versions



Sizes	5
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 3,000.00:1

SMI worm gear unit

(Catalogue G1035)

- ✓ Smooth surfaces
- ✓ Lifetime lubrication
- ✓ IEC versions



Sizes	5
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 3,000.0:1





Motors and components for decentralised drive control (Catalogue M7000/M7010)

Single and 3-phase electric motors up to 200 kW Smooth Surface Motor in sizes 80, 90 and 100. Further range of starters and components for decentralised drive control.



nsd^{tupH}

Sealed Surface Conversion System

The alternative to stainless steel

NORD DRIVESYSTEMS now has an answer for the requirements of drive technology for extreme environment conditions in the variety of products with which you are familiar for standard geared motors – however, with the resistance of stainless steel and an outstanding price/performance ratio. nsd^{tupH} Sealed Surface Conversion System. The aluminium surface is coated with a special process to make it extremely durable. Together with a special sealing process, this layer is up to 7 times harder than the basic aluminium material and up to 1000 times harder than paints and lacquers - and so has very low-wear characteristics. It therefore provides unique protection against corrosion, as it is not a paint layer which can detach or flake off.

nsd^{tupH} for food applications

- Complies with FDA Title 21 CFR 175.300
- Extensive tests have been performed with a wide range of detergents

Advantages of nsd^{tupH}

- Corrosion-resistant and prevents contact corrosion
- Easy to clean surfaces
- Resistant to acids and alkalis (entire pH range)
- No penetration of corrosion, even if damaged
- No flaking
- Cost effective alternative to stainless steel
- Lighter than stainless steel

nsd^{tupH} for extreme operating and ambient conditions

- High ambient humidity
- Offshore and coastal areas
- Food and beverage industry

- Car wash equipment
- Dairy
- Pharmaceutical industry
- Water and sewage plants

Tests performed on surface-treated aluminium housing components:

- ASTM D714 Blistering
- ASTM D610-08 Corrosion
- ASTM D1654-08 Scratches
- ASTM B117-09 Salt spray test
- ASTM D3170 Gravimeter test
- DIN EN ISO 9227 Salt mist spray test
- DIN EN ISO 2409 Cross cut test

Products available with nsd^{tupH}

- SMI worm gear units
- 2-stage bevel gear units series (SK 92x71.1 / SK 93x72.1)
- NORDBLOC.1 helical gear units (up to size 6)
- NORD smooth surface motors

Products treated with nsd^{tupH} are ideal for extreme ambient conditions and hygiene requirements.



DRIVESYSTEMS

SK 200E

(Catalogue F3020)

- ✓ "Safe stop" as per EN 954-1
- ✓ Commissioning via integrated DIP switches and potentiometer possible
- ✓ Energy-saving function
- ✓ Ethernet-based BUS systems
- ✓ Performance grading according to application
- ✓ Decentralised modules combined as a system
- ✓ Integrated "Posicon" positioning control
- ✓ On board AS interface versions

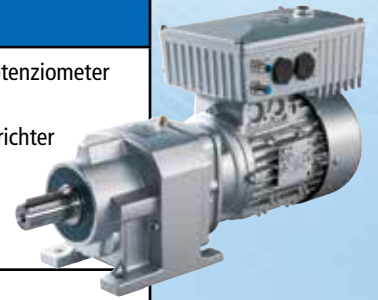


Sizes	4
U[V]	1~100 ... 120 ± 10% 1~200 ... 240 ± 10% 3~200 ... 240 ± 10% 3~380 ... 500 -20% / +10 %
P[kW]	0.25 – 22

SK 135E

(Catalogue F3015)

- ✓ Konfiguration über DIP-Schalter und Potenziometer möglich
- ✓ Integrierter elektronischer Bremsgleichrichter
- ✓ Durchgängige Parameterstruktur
- ✓ 2 digitale Ein- und Ausgänge
- ✓ Reversierstarter mit Sanftlauffunktion

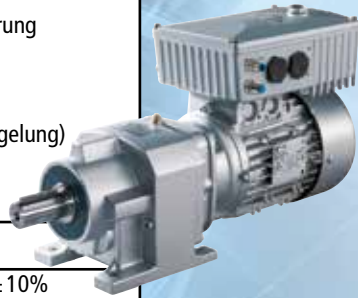


Sizes	2
U[V]	3~200 ... 500 -20%± 10%
P[kW]	0,25 – 7,5

SK 180E

(Catalogue F3018)

- ✓ "Stand alone"-Betrieb (integriertes 24 V-Netzteil)
- ✓ Konfiguration über Softwareparametrierung
- ✓ 4 Parametersätze, online anwählbar
- ✓ Ethernetbasierende BUS-Systeme
- ✓ Sensorlose Stromvektorregelung (ISD-Regelung)
- ✓ Energiesparfunktion "Automatische Magnetisierungsanpassung"



Sizes	1
U[V]	1~110 ... 120 ± 10% 1/3~200 ... 240 ± 10% 3~380 ... 480 -20% / +10 %
P[kW]	0,25 – 1,1 (bis 2,2 kW ab 2014)

SK 500E

(Catalogue F3050)

- ✓ Compact design
- ✓ Energy-saving function
- ✓ Performance grading according to application (e.g. "Posicon" positioning control)
- ✓ Plug-in modules for control and 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



Comprehensive competence

Throughout the long history of our company, our applications specialists have acquired a great deal of expertise in planning and application competence, which is reflected in each of our drive solutions.

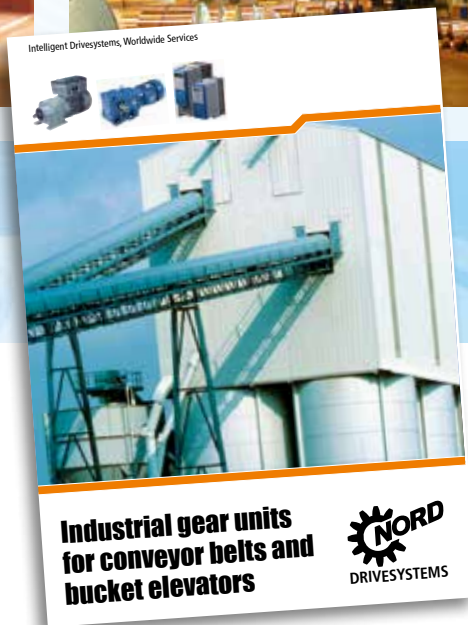
Whether in crane technology, transport and conveyor technology, theatre technology, the food and beverage industry, renewable energies, the chemical industry, airport technology, the motor industry, or any other industry: NORD drive solutions are

used and highly regarded throughout the world because of their great reliability and economy. Whether for motors for dairy use or with double brakes for the high safety requirements of theatre technology, as versions with centralised or decentralised

control units and of course as ATEX-compliant explosion-protected versions, NORD DRIVESYSTEMS offers the optimal drive solution for every field of application.



NORD drive solutions in conveyor technology, crane systems and in the food industry



Ready-to-use configured and pre-programmed solutions, including documentation, as logistics packages.





Intelligent Drivesystems, Worldwide Services





Drive Solutions for material handling



Intelligent Drivesystems, Worldwide Services

Drive solutions for stage technology



Intelligent Drivesystems, Worldwide Services




Drive solutions for the food industry



Intelligent Drivesystems, Worldwide Services





Drive Solutions for Airports



Intelligent Drivesystems, Worldwide Services




Drive solutions for the cement industry



Intelligent Drivesystems, Worldwide Services




Drivesystems for the Steel Industry



Our NORD microsites provide application-orientated information.

<http://stage.nord.com>

<http://food.nord.com>



<http://airport.nord.com>

<http://cement.nord.com>

<http://steel.nord.com>



A Healthy Outlook

As a pioneer of energy-optimised drive solutions we have always devoted a great deal of energy to help our customers to save energy and protect the environment.

Simply the fact that about two-thirds of industrial electricity consumption is due to drive technology makes high efficiency products essential. We have been aware of our responsibility to the environment and our customers for many years, and sustainability

has been an important part of our company policy since the 1990s. Because of this, we have consistently orientated both our range of products and our production facilities to finding and implementing potential energy savings. NORD drive solutions are not only

valued for their great energy efficiency. NORD provides complete application solutions to manufacturers across the renewable energy sector including solar, wind and biogas where our customers rely on our drive technologies and our know-how.



NORD energy saving flyer from 1997. More than twelve years ago, NORD decided on energy saving drive units - not just for economic, but also for ecological reasons - because using less energy also means less environmental pollution. You can find more information under <http://energy.nord.com> and <http://www.nord.com/IE2>.



The combination of high-efficiency NORD gear units with NORD IE2/IE3 energy-efficient motors, and central or decentralised frequency inverters with energy saving functions results in an exceptional potential for saving energy.



- IE1 STANDARD
- IE2
- IE3
- IE4



Efficient communication

To ensure that we always understand you, we communicate with our customers in 20 different languages. Whenever you need us, you can quickly contact our customer service advisors and engineers.

The NORD business philosophy is dedicated to supporting customers throughout the world with qualified information, full service and rapid delivery at all times. To do this, we have set up our own global medium: the GLOBAL NORDnet. This enables us to quickly control and track all ordering and service processes throughout the world. With my-

NORD, our customers and business partners have access to a convenient information and ordering medium. Via the internet portal www.nord.com they have 24/7 access to our electronic catalogue, they are able to select their drive units, download detailed information complete with 3-D models of the selected products, view offers, and even track

the status of their order online. In addition, our product catalogues, manuals and brochures are available as printed versions or for download in most major languages.



With the convenience of myNORD online tools, you always have access to your project data and very much more: the Newsletter archive, the OrderManager, the LocatorTool and the new NORD product configurator DriveExpert.

Online configuration and drawing production 24/7

Always available by phone throughout the world





You can easily find the full address of your local contact with our LocatorTool under locator.nord.com



Dedicated employees

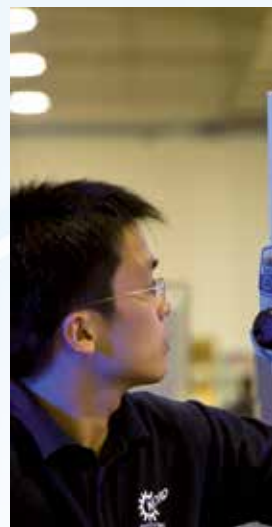


Every day, our employees dedicate themselves to making our company as dynamic and efficient as possible. Their motivation and qualification are an important factor in our success throughout the world.

Any company is only as good as the people who work there. First-class working conditions are the prerequisite for the development and production of first-class products. This is the reason why we provide modern workplaces, extensive industrial

safety precautions and individual possibilities for training and further education to each of our employees. No matter whether in research and development, in our production plants, our assembly and service facilities, in the field of commerce or in logistics and

warehousing, each individual employee guarantees that our customers obtain the highest quality products and perfect planning and implementation on all five continents..



Whether in our headquarters in Bargteheide near Hamburg, in our new assembly factory in Derimout, Australia, in Suzhou, China, on-site with our customers or at one of the many exhibitions throughout the world - our employees ensure the very highest levels of customer satisfaction thanks to their dedication and expertise.





Satisfied users

Drive solutions from NORD DRIVESYSTEMS are used throughout the world. The industries in which they are used ranges from waste water treatment to the cement industry.

The demands on modern and efficient drive solutions are as widely varied as the productive, processing and/or transportation industries in which they are used. As well as standardised drive solutions for a wide

range of different applications, individually configured solutions are also required. NORD drive solutions are used wherever anything needs to be moved, and because all movement needs a driving force which is as effici-

ent and as safe as possible, users throughout the world depend on NORD for a single and reliable source for mechanical, electrical and electronic drive technologies.



NORD drive units used in a bottling plant in a South German brewery.



NORD drive units in the NorStone AS gravel plant in Norway.



NORD drive units in a biogas plant.



NORD drive units in a steelworks.





NORD theatre technology with double brakes at the Bielefeld Music Theatre.



NORD drives in the high rack storage area in Bargteheide.



NORD electromechanic parallel hoist drives in Abu Dhabi.



NORD drive technology in a palletizer in Nederland.



NORD drives in use at Dong Energy, a Danish energy supplier.



NORD drive units in an industrial bakery.



NORD drives in a sewage treatment plant in Tunis.



At the Rodenäs Solar Park, NORD drive units move the solar panels to track the sun.





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