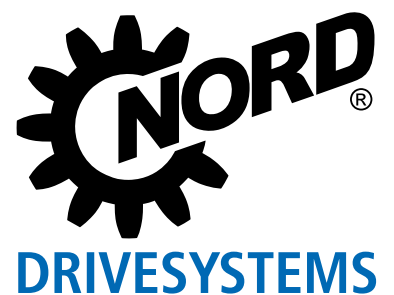


Intelligent Drivesystems, Worldwide Services

Only valid in Germany!



NORD DRIVESYSTEMS
LIFECYCLE SERVICES



NORD DRIVESYSTEMS Group

Headquarters and technology centre in Bargteheide near Hamburg



Innovative drive solutions for more than 100 branches of industry

Mechanical products

Gear units



Electrical products

Motors



Electronic products

Frequency inverters and motor starters



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.

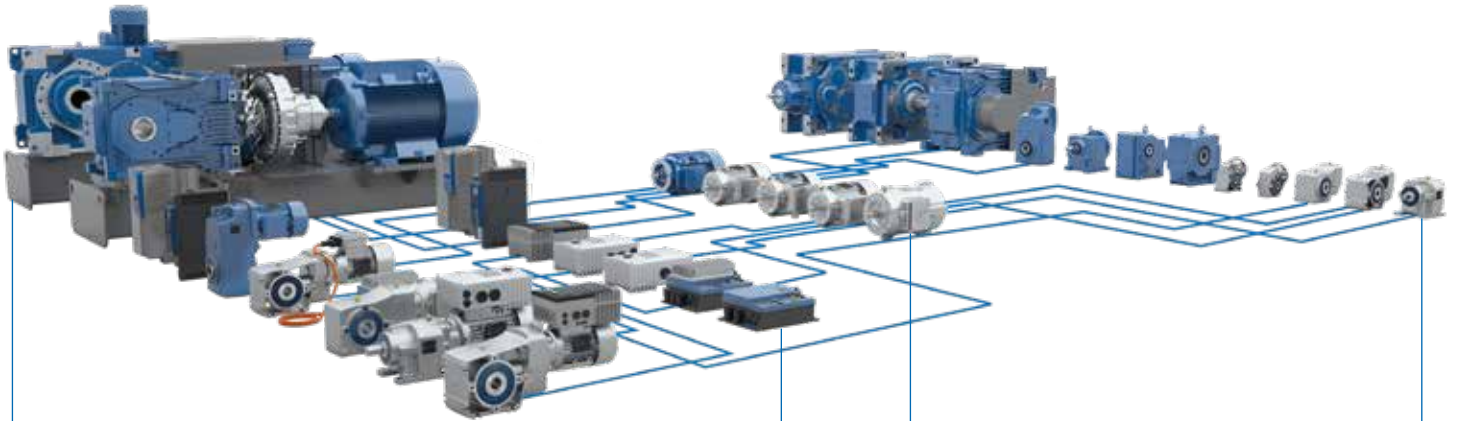
More than 4,000 employees throughout the world create customised solutions.



MODULAR SERVICE CONCEPT

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COMPLETE DRIVE SOLUTIONS FROM A SINGLE SOURCE



The Drive Solutions

The Drive Electronics

The Motors

The Gear Units

An optimum and individual drive solution can be created using the modular NORD system consisting of the gear unit, motor and drive electronics. Each of the variants combines the highest product quality, short planning and assembly times, high delivery availability, and a good price/performance ratio.



Reliable gear units with one-piece UNICASE housing can cater for any load.



Powerful motors up to IE4 keep the drive systems moving in any operating situation.



Intelligent drive electronics provide exactly the control facilities you need.



Extensive communication options enable access to the drive units from all levels. This provides a wide range of setting options.

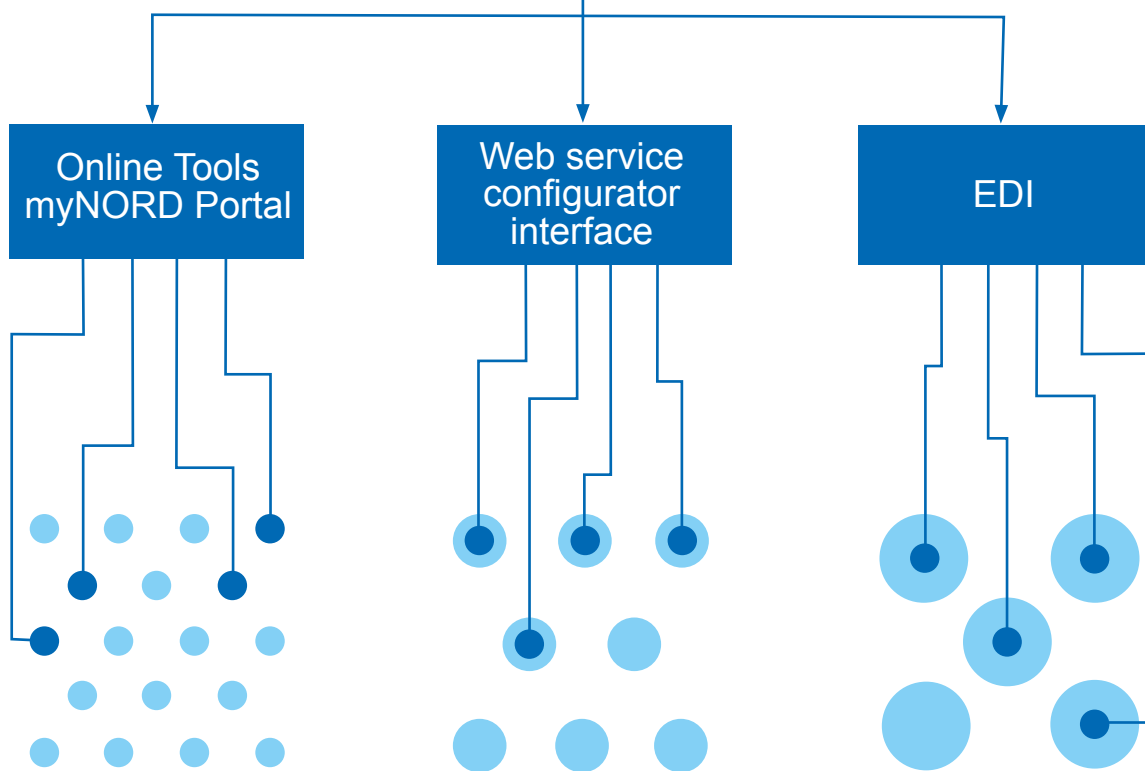


Switches and buttons are located directly on the drive units and enable direct starting, stopping or mode changes.



All interfaces designed for ease of operation. The drives can be easily configured and installed.

Conventional communication paths



Possibilities of digital networking with customers

We offer our customers optimal networking possibilities. The advantages that can be obtained with networked systems vary, depending on the size of the enterprise and the kind of drive solutions required. For our customers, we offer online tools (myNORD Portal) and configurator/Electronic Data Interchange (EDI) interfaces.

CUSTOMER PORTAL

SIMPLE, ALWAYS, FAST



my.nord.com

Simple, fast, always available – our optimised customer portal provides fast and practical support for your daily work. The NORD online tools have been developed to make your work as easy as possible – from planning and design to order tracking. With this, we both can simplify our business processes.

SIMPLE

- Intuitive configuration
- One page, all data

ALWAYS

- Available without interruption
- All standard products

FAST

- Direct offers
- Live order status



Configurator for closely matched drives



Create offers with cost prices



Generate CAD data, 3D models, dimension sheets, outline drawings



Track order status



myNORD / ONLINE TOOLS

CAD CONFIGURATOR / DOCUMENT CENTRE

Simple, convenient and fast – configure your drive solutions online. Conveniently create dimension sheets, drawings and CAD models for your drive solutions. Selection of options is especially easy thanks to the plausibility check. The CAD data which you have created can then be simply downloaded for further use or directly integrated into your CAD program.



In the Document Centre, you can view the documents which are available to you. To do so, simply enter your order number.



<https://www.nord.com/cms/en/global/docs.jsp>

ORDER TRACKING



Whenever and wherever you wish – the NORD online tools for the ordering process enable you to create quotations, and view your order status at any time.

This means greater efficiency, complete transparency, and a rapid overview. At the same time, we guarantee a high level of data security because of your personal access information.

- Overview of current orders and order history
- Order documentation can be accessed directly

The screenshot displays the 'AUFTRAGSSTATUS' (Order Status) page in the myNORD system. It features a search bar at the top with the text 'Bitte hier Bestellung oder Auftragsnummer eingeben'. Below the search bar is a table listing orders with the following columns: Bestellnummer, Auftrags-Nr./Destinations, Status, and Favorit. The status 'Ausgegeben' is highlighted in green for several orders.

Bestellnummer	Auftrags-Nr./Destinations	Status	Favorit
71600489	201719968 2 Pos.	Ausgegeben	
71600377	201718817 8 Pos.	Ausgegeben	
71600567	201712949 3 Pos.	Ausgegeben	
21600785	201709356 1 Pos.	Ausgegeben	
71600270	201709024 3 Pos.	Ausgegeben	
71600249	201707005 1 Pos.	Ausgegeben	
71600224	201706485 1 Pos.	Ausgegeben	
71600204	201706023 1 Pos.	Ausgegeben	

Orders in view – Order tracking tool

CUSTOMER-SPECIFIC DOCUMENTATION

Data documented optimally according to your wishes

We offer several options for downloading standard documentation (manuals, catalogues, spare parts lists, etc. in up to 22 languages) as well as the services of our Document Centre, where you can download standard documentation after specifying the order number. We also offer customer-specific documentation.



Customer-specific documentation can comprise the following:

- Adaptation and/or creation of technical 2D and 3D drawings
- Translation into languages we do not yet offer

How do we create customer-specific documentation?

- We create customer-specific documentation when requested by our customers.
- We will be pleased to make a specific proposal for your documentation. Please contact our sales team.

For our customers, this means:

- ✓ You can retrieve and download standard documentation in up to 22 languages at any time.
- ✓ For standard documentation, you can specify the order number in order to download product-related documentation in several languages.
- ✓ On request, NORD DRIVESYSTEMS will also create customer-specific documentation perfectly tailored to the product which our customer has purchased. In this context, the customer defines the contents the documentation is to include.



<https://www.nord.com/cms/en/global/docs.jsp>

APPLICATION ORIENTED PRODUCT DEVELOPMENT

ECONOMICAL, SAFE, EFFICIENT



New machines/systems, or modernising existing machines

If desired, our NORD project team advises and supports your engineering. It is also possible that one of our NORD engineers actively takes part in the selection process of products at your premises.

■ Pros and cons

We design our drives not only with respect to technical and energy efficiency standards – we also design them so that the number of versions is as small as possible.

■ Hardware and software

Every drive optimally meets demands – or is adapted accordingly. We also program inverters and develop software so that everything runs smoothly on your PLC. If possible, we also take care of your existing system architecture so that you can continue using it.

■ Checking and testing

We keep our promises. We operate mechanical and electronic test beds to document performance characteristics for acoustics, thermal, efficiency, durability, and much more. We conduct Factory Acceptance Tests (FAT) at your premises.

■ Approval

We certify products and services in line with all required standards and guidelines. If desired, we will gladly name references in your sector.

■ With all documents

We document all services in detail. We create necessary drawings or adapt existing ones.

■ Logically packed

We pack our deliveries to you in a plant-specific way. What you need first you will unpack first. Step by step, piece by piece. Where possible, we protect resources and budgets by using collective shipments.

For our customers, this means:

- ✓ Legal security: Using our products ensures you always comply with the latest standards and guidelines.
- ✓ With our know-how, you can avoid later reworking as early as when designing and manufacturing your machine.
- ✓ This will save you considerable costs and makes it easy to comply with your design and manufacturing schedule.
- ✓ High level of quality for the design and implementation phase
- ✓ Structured project management with specialists from the product manufacturer
- ✓ Assistance in reducing the CO₂ footprint

■ **Easily ordered, logically delivered**

We adapt to your logistics concepts – not vice versa. Apart from call-off agreements and classic online and offline schemes, you can simplify your logistics via Electronic Data Interchange (EDI) and automatically trigger your order, for example with barcode or RFID (Radio Frequency Identification). Agreed package prices ensure cost certainty and transparency.

■ **Worldwide**

With our subsidiaries and sales partners in 98 countries on 5 continents, we take care of your projects internationally. The NORD Group is networked worldwide. This means: additional global stock transparency and simple deadline tracking.

Technology	Logistics
Support of your project development tailored to your needs	Order and delivery processes tailored to your needs
Individual, expert consulting	Transparent cost structure and deadlines
Maximum security during implementation	High efficiency
Maximum efficiency	Possibility of automation

For our customers, this means:

- ✓ Optimum order processes
- ✓ Transparent deadline tracking
- ✓ Reduced logistics efforts
- ✓ One central warehouse and additional regional warehouses
- ✓ Creation of dedicated customer stock

MODULAR SERVICE CONCEPT AT A GLANCE



With its modular service concept NORD DRIVESYSTEMS provides solutions for maintaining the availability and value of your drive technology. It provides various services in the form of compact modules, which range from assistance in commissioning, specific maintenance packages, and on-site analysis to estimate repair costs. In addition, there are modernisation or optimisation measures. Last-not-least, operators can qualify their employees with various training sessions.

Presently available NORD service modules:

Advantages for our customers:



- Installation and commissioning module

- ✓ Reduced commissioning efforts



- Periodic maintenance and status monitoring module

- ✓ Calculable costs
- ✓ Scheduled downtimes



- Repair, maintenance or replacement module

- ✓ Preservation of machine and system values



- Spare parts logistics module

- ✓ Rapid restoration of plant availability



- Product instruction and training module

- ✓ Optimised plant management



- Individual contracts module

- ✓ Tailored service module combination



- 24/7 emergency service module

- ✓ Rapid help 24/7



- Modernisation and extension module

- ✓ Reduced investment costs
- ✓ Optimised energy efficiency

SERVICE MODULE

INSTALLATION AND COMMISSIONING



Support during commissioning of NORD drive solutions and components

We offer telephone support for individual products and NORD drive solutions, connection to automation via communication modules, and remote support. Our NORD services for commissioning are:

- Support for installation and commissioning
- Optimisation and adjustment of NORD products
- Commissioning reports
- Laser alignment
- Condition monitoring/vibration measurement
- Oil analysis by an independent institute
- Thermography
- Endoscopy

For our customers, this means:

- ✓ Reduced commissioning effort
- ✓ Enhanced machine and plant security
- ✓ Personal consulting and support
- ✓ We are reliable, fast and efficient, and for this reason more cost-effective than a customer service employee with less routine.

SERVICE MODULE

PERIODIC MAINTENANCE AND STATUS MONITORING



NORD drive electronics let you define maintenance intervals that reflect the load of the drives.



It is a short-sighted maintenance strategy not to bother until a fault occurs. Because as a rule, the costs for error correction by far exceed the potential saving of maintenance costs. Regular inspection, maintenance, and repair mean: calculable costs, high system availability, plannable standstill times.

Periodic maintenance

At regular intervals, NORD DRIVESYSTEMS checks the systems for operational reliability and performs agreed maintenance work. In addition to the activities specified in the Inspection Agreement, the Maintenance Agreement also covers topping up or exchanging lubricants in accordance with the operating instructions. An assessment of the worn parts and their replacement after inspection and on-site situation analysis is also performed.

For our customers, this means:

- ✓ Enhanced machine and plant availability
- ✓ Optimised operating costs
- ✓ Preservation of machine and system values
- ✓ Access to manufacturer knowledge for efficient inspection, maintenance, and repair
- ✓ Analysis and evaluation of maintenance results in standard reports with experts' recommendations
- ✓ Future-oriented forecasts of the availability of your systems, with the aim of minimising service age-related downtimes
- ✓ Basis for risk assessments and investment decisions

ENDOSCOPIC STATUS MONITORING



Endoscopic gear unit inspection enables fast and cost-effective status analysis of the gear teeth (including wear check), the roller bearings and other components within the gear unit.

- Preventative maintenance concept through early detection of damage
- Quick and cost-effective status monitoring, as the gear unit does not need to be disassembled (the inspection is made through the cover cap holes in the housing)
- By regular recording of the state of wear or damage of the gear unit, the life of the drive unit can be extended by means of suitable measures.

For our customers, this means:

- ✓ Reduction of down times due to wear
- ✓ Improved system reliability and availability by prevention of potential faults
- ✓ Analysis and evaluation of maintenance results in standard reports with experts' recommendations
- ✓ Future-oriented forecasts of the availability of your systems, with the aim of minimising service age-related downtimes
- ✓ Basis for risk assessments and investment decisions

SERVICE MODULE

REPAIR, MAINTENANCE OR REPLACEMENT



Repair or replacement of our products

You can rely on us if a repair is necessary.
All over the world and at any time.

- Diagnosis of causes for NORD product faults in case of system malfunctions
- Expert repair or replacement of defective drives
- Error analysis by way of remote support
- Short repair times up to instant repair
 - By our decentralised service partners
 - By our worldwide service workshops
- Exclusive use of genuine parts
- Latest spare parts at all times without capital commitment
- Selecting and searching for spare parts is unnecessary
- Product optimisation by way of software updates

For our customers, this means:

- ✓ Access to manufacturer knowledge for efficient diagnosis
- ✓ We are reliable, fast and efficient, and for this reason more cost-effective than a customer service employee with less routine.

SERVICE MODULE

SPARE PARTS LOGISTICS



Spare parts service

Spare parts in stock are delivered within 24 hours at the latest. The delivery period depends on the delivery distance.

An optional delivery by a courier service is possible.

One-Day Delivery (applies to Germany and is subject to extra costs)

If things are needed really fast: Orders received before 11:00 AM will be dispatched the same day by express services.

Spare parts stocking

The availability of spare parts not in stock or of replacement drives is ensured by way of agreed spare parts kits.

For our customers, this means:

- ✓ Fast, optimised supply of spare parts
- ✓ Reduced warehousing costs
- ✓ Professional spare parts management
- ✓ Individual production possible
- ✓ One central warehouse, several regional warehouses
- ✓ 24/7 delivery via courier service or standard shipping possible
- ✓ Latest spare parts at all times without capital commitment
- ✓ Kits customised by the manufacturer

SERVICEMODUL

PRODUCT INSTRUCTION AND TRAINING



Our training offers

All of our training is customer and solution-oriented. The training sessions are practice-related and provide practical exercises.

- Product training
- Design training – planning
- Application training
- Partner training (distributors and service partners)
- ATEX training
- Optimum application of NORD drive electronics – energy consulting

For our customers, this means:

- ✓ Training and advanced training of employees on new technologies and regulations
- ✓ Motivation of employees through additional qualification
- ✓ Your employees can learn at any time and at their own pace.
- ✓ Training topics can be chosen as needed.
- ✓ You can invoke the training program again if you have a question or a problem to solve.
- ✓ After having passed a final test, your employees receive a certificate.

SERVICE MODULE

INDIVIDUAL CONTRACTS



So you can be sure everything is going well

A service contract is specially tailored to meet your requirements and wishes. Possible service contract could be configured as follows:

- Periodic inspection – NORD DRIVESYSTEMS checks systems for operational reliability once a year.
- Periodic maintenance – At regular intervals, NORD DRIVESYSTEMS checks the systems for functionality and performs the agreed maintenance work.
- Part or full service agreement – On-site calls on request by the customer. The annual flat rate includes all costs for transportation, working time and accommodation allowance, and required measuring instruments.

For our customers, this means:

- ✓ Enhanced planning security and plant availability
- ✓ Reduced cost risk
- ✓ You always comply with the latest standards and directives
- ✓ The technician contacts you on his own to arrange for a visit when checks are due.
- ✓ If a Service Contract has been concluded, the machine/system is known to us prior to the deployment.
- ✓ Maintenance strategy based on manufacturer-specific know-how
- ✓ Exclusive use of genuine parts
- ✓ State-of-the-art remote monitoring
- ✓ Less breakdowns
- ✓ Optimum cost-effectiveness with regard to spare part and maintenance requirements

SERVICE MODULE

24/7 EMERGENCY SERVICE



24/7 emergency service

We are available at all times, 24 hours a day, 365 days a year.
We also offer you direct access to our experts, your individual contact persons.

In a case of emergency, you can reach us by calling the central emergency service number: **+49 180 521 50 60 (Germany)**

- All year round 24/7 availability for all customers, even without service contract
- Telephone assistance for all product lines provided by our service technicians
- Delivery of spare parts in stock and replacement drives via courier service

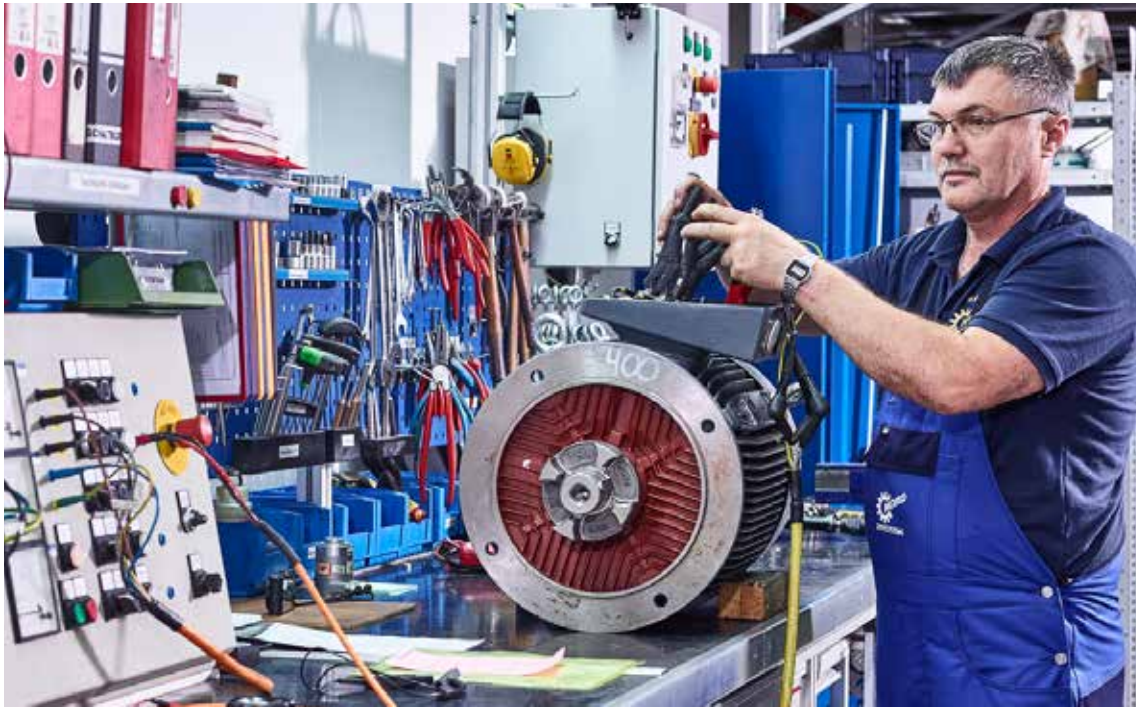
In connection with a service contract, we offer on-site services for the times outside our business hours. In this way, we make sure required spare parts or replacement drives are available as spare parts kits.

For our customers, this means:

- ✓ Good cost control
- ✓ Reduced maintenance costs
- ✓ Optimised human resources

SERVICE MODULE

MODERNISATION AND EXTENSION



Increased efficiency

Modernising our products lets existing machines and systems participate in the technological development.

- Energy efficient motors
- Replacement for mechanical variable speed gear units
- Assistance and support for conversion from legacy and competitor products
- Use of the Total Cost of Ownership (TCO) concept

For our customers, this means:

- ✓ Economically feasible alternative to a new system
- ✓ Fast conversion to cutting-edge technology
- ✓ Technically up-to-date machines and systems compliant with standards

Advantages over a new system:

- Lower investment costs without approval procedure
- Ensure the availability in case of brief interruptions and during the implementation period
- Stepwise modernisation paired with an extension of functions
- Lower maintenance costs by risk minimisation
- Predictive planning of modernisation concepts for changing production conditions



Modernisation of systems with new, application-specific product solutions

GLOBAL SERVICE ORGANISATION



Our global service network ensures worldwide service. This includes simple organisation and handling of repairs, spare parts deliveries and on-site deployments in the customers' country. Your local contact persons also look after your international service requirements.

The Service Department at Bargtheide is responsible for the coordination of worldwide customer service deployment.

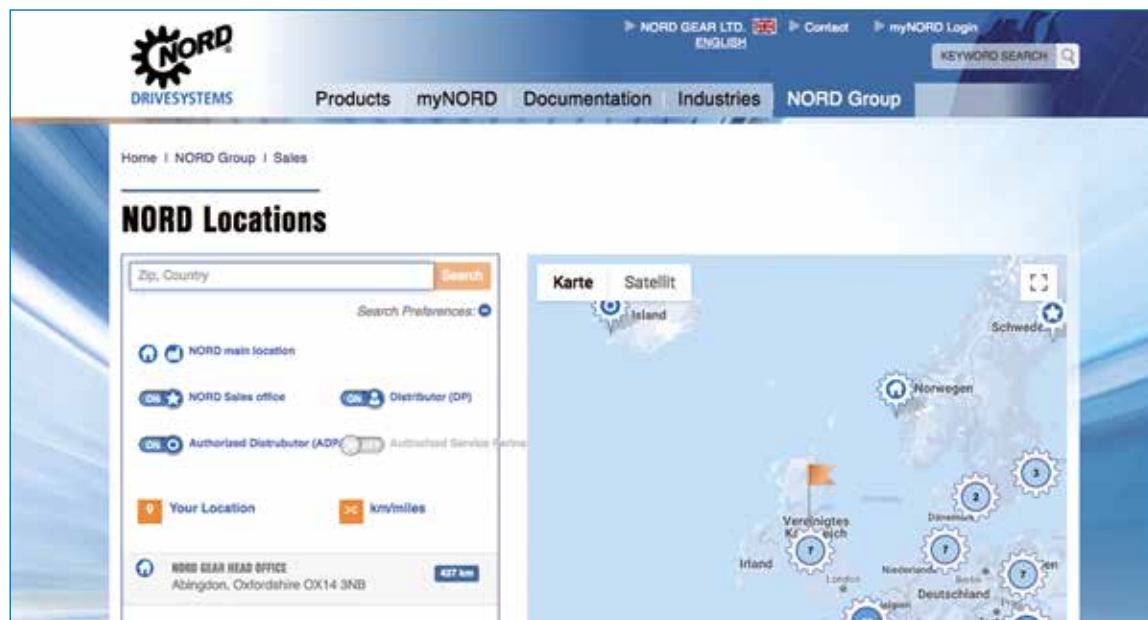
Necessary information such as

- Responsible service employees
 - Contact data
 - Expertise of mechanical and electronic products
 - Local invoicing rates
- are permanently available

Appointed responsible service employees all over the world handle international service orders exclusively.

For our customers, this means:

- ✓ Cost-effective replacement through worldwide availability
- ✓ Fast delivery because customs formalities are not necessary
- ✓ No language and cultural barriers
- ✓ Central control through global networking



www.nord.com/locator



Visit us on YouTube and watch our movie about the NORD service modules.

<https://youtu.be/RlbKLuYkxR4?list=PL1Y3reqs8xqM7f2aDwNRAcXCwx0Q1PJuc>

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Innovative drive solutions
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Mechanical products
Parallel shaft, helical, bevel and worm gear units

Electrical products
IE2/IE3/IE4 motors

Electronic products
Cabinet and decentralised frequency inverters
and motor starters

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Headquarters:

Getriebebau NORD GmbH & Co. KG
Getriebebau-Nord-Str. 1, 22941 Bargteheide, Germany
T +49 4532 289 0, F +49 4532 289 2253
info@nord.com

Member of the NORD DRIVESYSTEMS Group

