

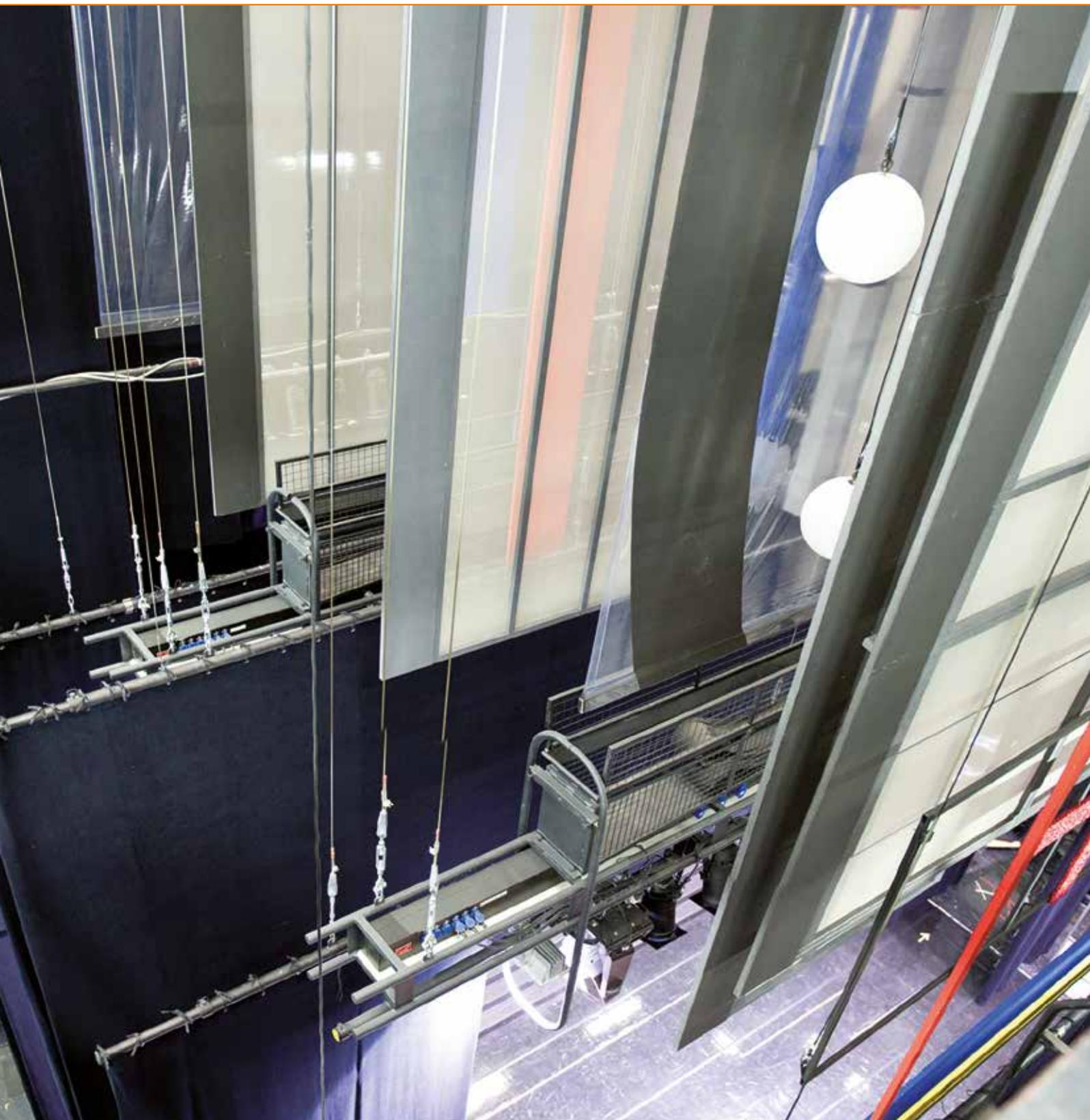
INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



**DRIVE SOLUTIONS FOR
STAGE TECHNOLOGY**



NORD DRIVE SOLUTIONS FOR STAGE TECHNOLOGY



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.



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.



NORD DRIVE SOLUTIONS FOR UNDISTURBED THEATRE ENJOYMENT

NORD DRIVESYSTEMS is one of the world's leading suppliers of drive solutions for stage technology.

NORD DRIVESYSTEMS provides:

- Extensive knowledge of applications and technical support
- Complete drive solutions from a single source
- Strong global presence and service
- Countless drive units installed in theatres and opera houses throughout the world.
- Comprehensive, versatile range of high quality products
- Great reliability, economy and service life

Stages in community halls, theatres and opera houses require safe, reliable and quiet drive technology. Curtains, podiums, rotating, lifting or sliding stages and stage structures must be brought into the correct position unnoticed by the audience and without endangering the actors and stage hands. For these applications the trend is towards electromechanical drive systems as these are more suitable than relatively complex, high-maintenance hydraulic drives, especially where space is restricted. As compact and cheap alternatives to hydraulic drives, they have proved themselves above all for raising and lowering loads on the stage.

Electromechanical drives from NORD DRIVESYSTEMS are easy to install, use and maintain. They also have exceptionally low noise levels. Thanks to highly responsive frequency inverters, the drive solutions can also be controlled very flexibly, either individually or in groups.

For the specific requirements of stage technology, NORD DRIVESYSTEMS offers:

- Geared motors with maximum torques of up to 260,000 Nm, which can be used in the above or below stage theatre machinery.
- All NORD geared motors comply with the stringent requirements of DIN 56950 and BGV C1. This ensures the highest possible working safety for people in the vicinity of the drive units.
- All motors are equipped with double brakes, as work goes on continuously under suspended loads such as parts of the stage set or lighting equipment.
- Gear units which are used for hoists are designed for double the intended load.



The stage technology of the Bielefeld Musiktheater in Germany now uses geared motors from NORD DRIVESYSTEMS.





EFFICIENT, RELIABLE AND TESTED IN DEMANDING ENVIRONMENTS



Efficient

NORD drive solutions are environmentally friendly and fulfil all current national and international energy saving standards.

- Lightweight aluminium construction
- NORD motors for all requirements, including IE3 and IE4
- Intelligent NORD frequency inverters with energy saving flux reduction for optimal motor operation under partial load

Reliable

From pinions to circuit boards, all NORD mechatronic components are produced in our own factories, which means unsurpassed reliability, long operating times, long service life and low total operating costs. Countless options cater for all requirements of stage technology.

- Temperature sensors to protect against overheating
- Protection class IP66 or IP69K
- Stainless steel shafts and accessories, metal fan blades, fanless designs
- Moisture protection: Rust protection (dust and rust), multi-coat painting

Tried-and-tested

Some of the places where you can find whisper-quiet technology from NORD DRIVESYSTEMS:

- in the Friedrichspalast, Berlin (Germany)
- in the Musiktheater Bielefeld (Germany)
- in the Státní Opera House Prague (Czech Republic)
- in the Alexandrinsky Theater and in the Marinsky II Opera House in St. Petersburg (Russia)
- in the Beijing National Theatre (China)
- in the Coex Art Centre in Seoul (Korea)
- in the Opal Theatre on board the cruise ship Oasis (Finland)

In the spectacular Peking National Theatre, the use of especially quiet stage technology equipped with NORD drives ensures that there is no disturbance to the audience's enjoyment.

DER ANTRIEB

■ Reliable ■ Versatile ■ Global



The Gear Unit

- Generously dimensioned bearings
- High power density
- High level of corrosion protection

The Motor

- High efficiency
- International standards
- All operating conditions

The Drive Electronics

- Compact design
- Simple commissioning
- Protection class up to IP69K

NORD DRIVE SOLUTIONS FOR STAGE TECHNOLOGY



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 worm gear units (Catalogue G1000)



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

Power	0.12 – 15 kW
Torque	94 – 3,058 Nm
Speed ratio	4.40:1 – 7,095.12:1

MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ Foot-, flange- or hollow shaft-mounted
- ✓ Long life, low maintenance
- ✓ Parallel and angled gear units
- ✓ Speed ratio range 5.54 to 400:1 with the same foot dimensions

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
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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
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Brake technology

- ✓ Electromagnetic spring-loaded brakes
- ✓ Working or holding brakes
- ✓ Double brakes
- ✓ IP66 brakes
- ✓ Rust protection
- ✓ Dust protection
- ✓ MIK air gap wear monitoring
- ✓ Noise-optimised brakes



Encoder and feedback systems

- ✓ TTL / HTL / sin-cos incremental encoders
- ✓ Absolute encoders single or multiturn, combined encoders
- ✓ Sensor bearings
- ✓ Inductive sensors



Option - Double shaft sealing rings + shaft material

- ✓ Optimum sealing
- ✓ Long life gaskets
- ✓ Clean gear oil
- ✓ Rust-proof shafts





NORD DRIVESYSTEMS offers intelligent and cost-effective drive solutions with graded equipment versions, which perfectly cater for the requirements of stage technology with regard to power range, supply voltage and size.

Headquarters:

Getriebebau NORD GmbH & Co. KG

Getriebebau-Nord-Str. 1, 22941 Bargteheide, Germany
T +49 4532 2890, F +49 4532 289 2253
info@nord.com

Member of the NORD DRIVESYSTEMS Group

