

Drive solutions for stage technology

Complete drive solutions from a single source





Industrial gear units



Geared motors



Frequency inverters and motor starters

- ▶ Headquarters and technology centre in Bargteheide near Hamburg.
- ▶ Innovative drive solutions for more than 100 branches of industry.
- ▶ 7 production locations with cutting edge technology produce gear units, motors and drive electronics for complete drive systems from a single source.
- ▶ NORD has 48 subsidiaries in 36 countries and further sales partners in more than 50 countries, providing local stocks, assembly centres, technical support and customer service.
- ▶ More than 4,100 employees throughout the world create customised solutions.



Headquarters in Bargteheide



Gear unit production



Inverter production



Motor production



Production and assembly



Motor assembly

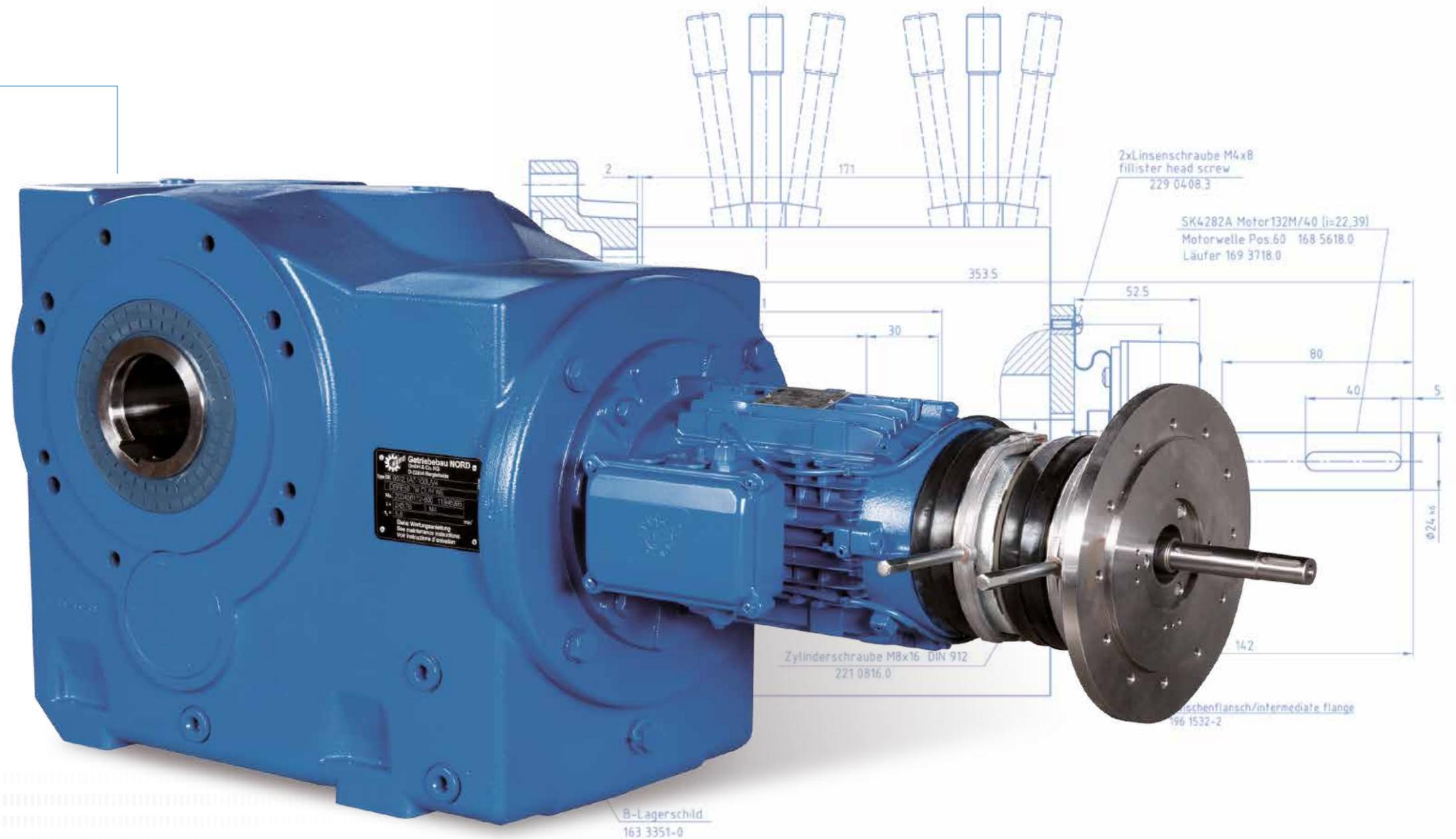


Customised solution

- ▶ Motor with double brake
- ▶ Manual release lever
- ▶ Encoder
- ▶ Second shaft end for manual operation



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



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

Drive solutions for stage technology

NORD drive solutions for undisturbed theatre enjoyment

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 282,000 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.



Efficient, reliable and tested drive solutions from a single source



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.

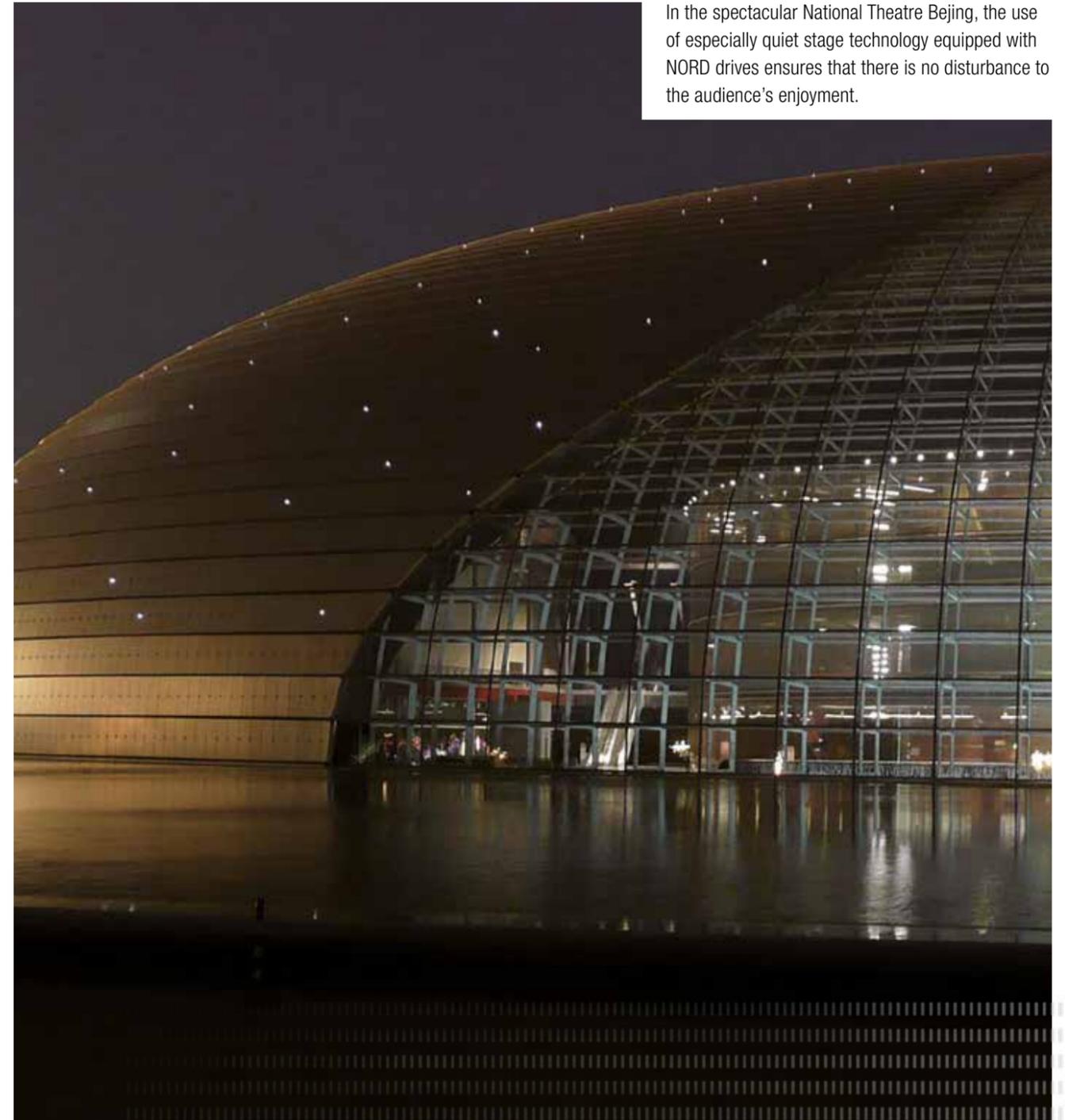
- ▶ Temperature sensors to protect against overheating
- ▶ Protection class IP66 or IP69K
- ▶ Stainless steel shafts and accessories, metal fan blades, fanless designs
- ▶ Moisture protection: Rust protection (dust and rust), multi-coat painting

Tried-and-tested

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

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

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



UNICASE helical in-line gear units (Catalogue G1000)



- ✓ Foot or flange mounted
- ✓ Long life, low-maintenance
- ✓ Optimum sealing
- ✓ UNICASE housing

Sizes: 11
 Power: 0.12 – 160 kW
 Torque: 10 – 26,000 Nm
 Speed ratio: 1.35 – 14,340.31:1

UNICASE parallel shaft gear units (Catalogue G1000)



- ✓ Foot, flange or face mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ UNICASE housing

Sizes: 15
 Power: 0.12 – 200 kW
 Torque: 110 – 100,000 Nm
 Speed ratio: 4.03 – 15,685.03:1

UNICASE worm gear units (Catalogue G1000)



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

Sizes: 6
 Power: 0.12 – 15 kW
 Torque: 93 – 3,058 Nm
 Speed ratio: 4.40 – 7,095.12:1

MAXXDRIVE® industrial gear units (Catalogue G1050)



- ✓ Parallel and angled gear units
- ✓ High precision axis alignment
- ✓ Long life, low-maintenance
- ✓ UNICASE housing

Sizes: 11
 Power: 1.5 – 6,000 kW
 Torque: 15,000 – 282,000 Nm
 Speed ratio: 5.54 – 30,000:1

NORDAC FLEX SK200E frequency inverters (Catalogue E3000)



- ✓ Energy-saving functions
- ✓ Integrated POSICON positioning control
- ✓ Integrated PLC

Sizes: 4
 Voltage: 1 ~ 110 – 120 V, 1 ~ 200 – 240 V, 3 ~ 200 – 240 V, 3 ~ 380 – 500 V
 Power: 0.25 – 22 kW

NORDAC PRO SK500E frequency inverters (Catalogue E3000)



- ✓ Stand-alone operation
- ✓ 4 parameter sets
- ✓ Sensorless current vector control (ISD control)
- ✓ Integrated PLC

Sizes: 11
 Voltage: 1 ~ 110 – 120 V, 1 ~ 200 – 240 V, 3 ~ 200 – 240 V, 3 ~ 380 – 480 V
 Power: 0.25 – 160 kW

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 and shaft material



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

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