

Drive solutions for stage technology

Complete drive solutions from a single source

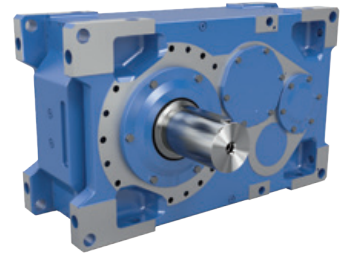


Complete drive solutions from a single source



NORD Delivers

NORD offers first-class customer service and support along with full-featured drive solutions that can tackle the toughest requirements. All components are carefully selected and precisely configured to meet your exact specifications. In the rare case that standard components won't meet your needs, our in-house engineering team will work with you to design custom components or a complete customized system.



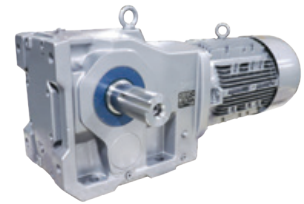
Reduce Lead Times and Decrease Inventory

- ▶ Fastest lead times in the industry with NO expedite fees
- ▶ Over 20,000,000 standard configurations to reduce or eliminate the need for custom components
- ▶ Modular drives, motors, and electronic controls minimize inventory of replacement units and parts



Global Product Designs, Standards, and Support

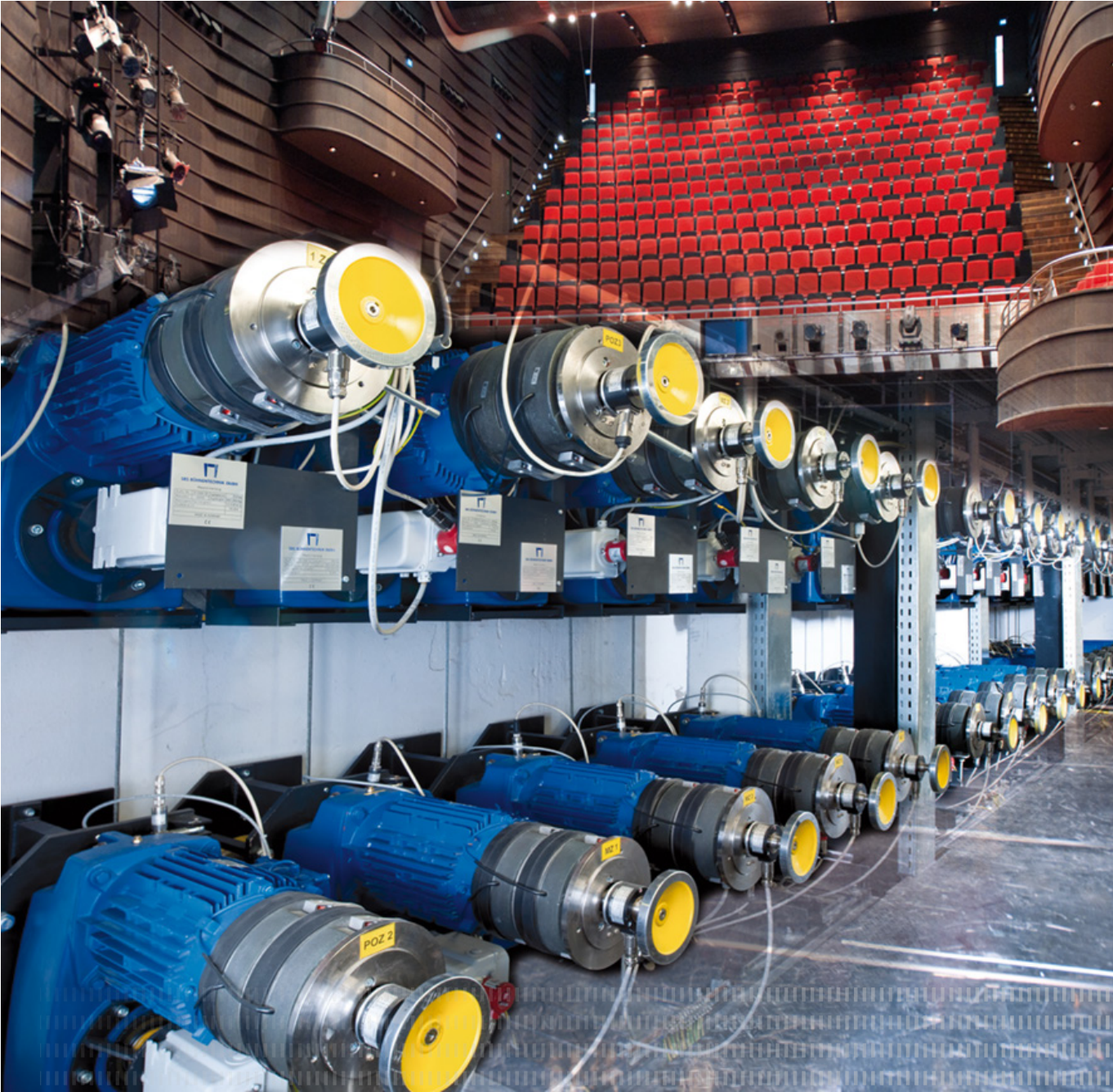
- ▶ Innovative, industry-standard products to support a wide range of applications
- ▶ Global sales and support network
- ▶ Dedicated mechanical and electrical application engineers ready to assist you
- ▶ Online resources available to you any time
- ▶ 24/7/365 emergency breakdown service



Increase Efficiency and Reduce Operation Costs

- ▶ myNORD online tools for fast selection, configuration, ordering, and tracking of your drive units
- ▶ Drive systems that are perfectly matched to your application for optimum performance and energy efficiency
- ▶ Program personalization, such as weekly shipment schedules and custom nameplates
- ▶ Partner with a company that is easy to do business with and wants to see you succeed!





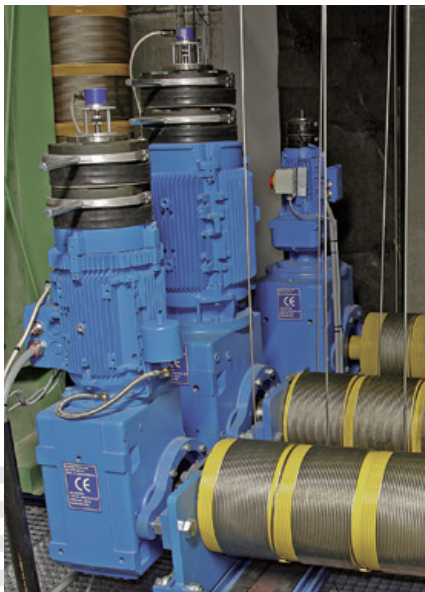
Drive solutions for stage technology

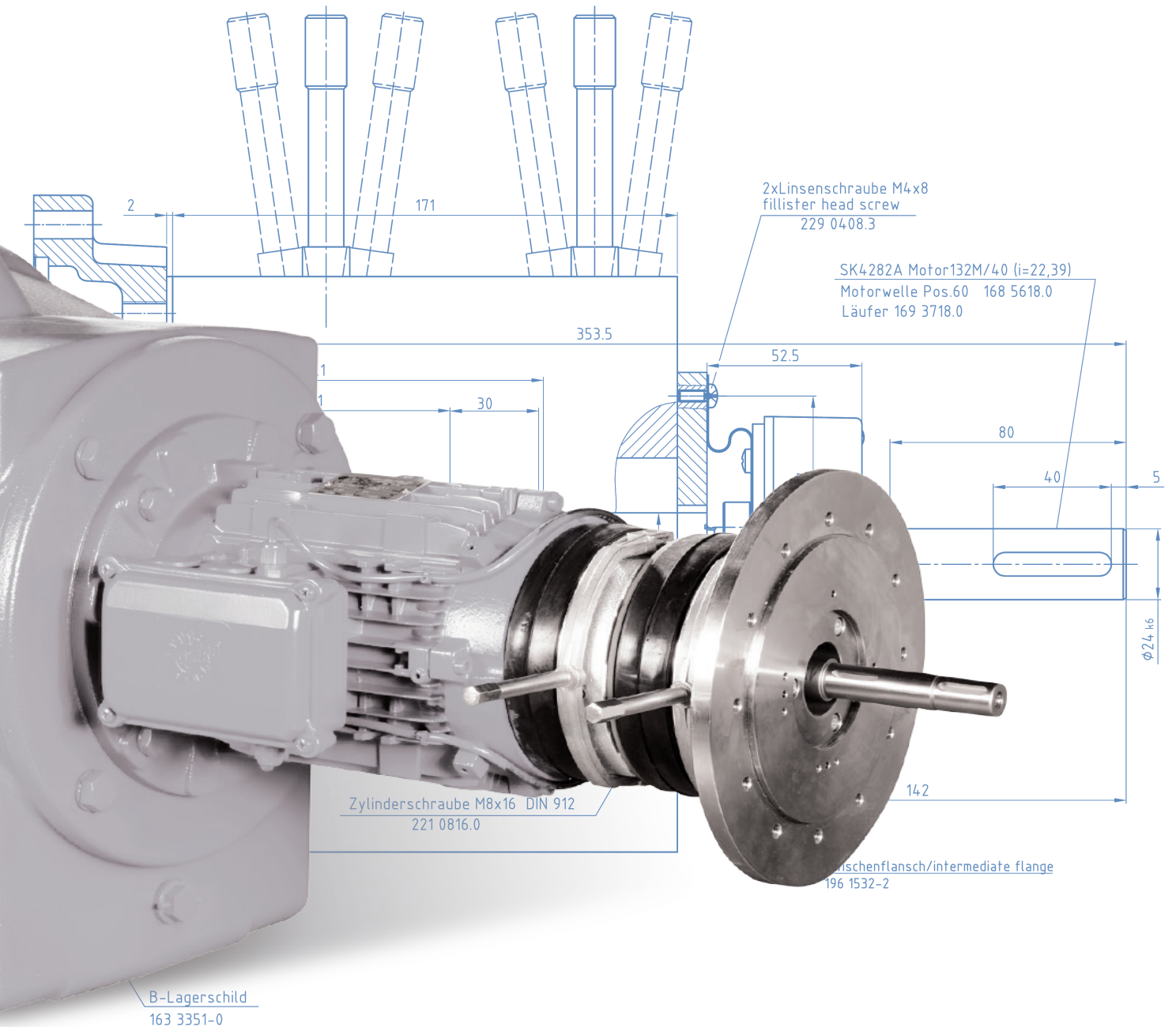
Highly-configurable solution

- ▶ 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 for service and support
- ▶ Countless drive units installed in theaters 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 provide undisturbed theater enjoyment

Stages in community halls, theaters, and opera houses require reliable, quiet drive technology that can operate safely around actors and stage hands. Additionally, curtains, podiums, and other stage structures that need to rotate, lift, or slide must be brought into the correct positions unnoticed by the audience.

For these applications, the trend is moving towards electromechanical drive systems as they are more suitable than relatively complex, high-maintenance hydraulic drives, especially where space is restricted. As compact, cost-effective alternatives to hydraulic drives, these units have proven performance for raising and lowering loads on stage.

Electromechanical drive solutions from NORD DRIVESYSTEMS are easy to install, use, and maintain. They also have exceptionally low noise levels. Thanks to highly responsive variable frequency drives, these drives can also be precisely controlled individually or in groups for ultimate flexibility.



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

- ▶ Geared motors with maximum torques of up to 2,495,900 lb-in, which can be used in above or below stage theater machinery.
- ▶ All NORD geared motors comply with the stringent requirements of DIN 56950 and BGV C1. This ensures the highest possible 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.



Drive solutions for stage technology

Efficient, reliable, and safe drive solutions from a single source



Efficient

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

- ▶ Rugged cast-iron or lightweight aluminium construction
- ▶ Electric motors for all requirements, including IE3 and IE4
- ▶ Intelligent variable frequency drives with energy-saving flux reduction for optimal operation under partial load and low speeds

Reliable

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

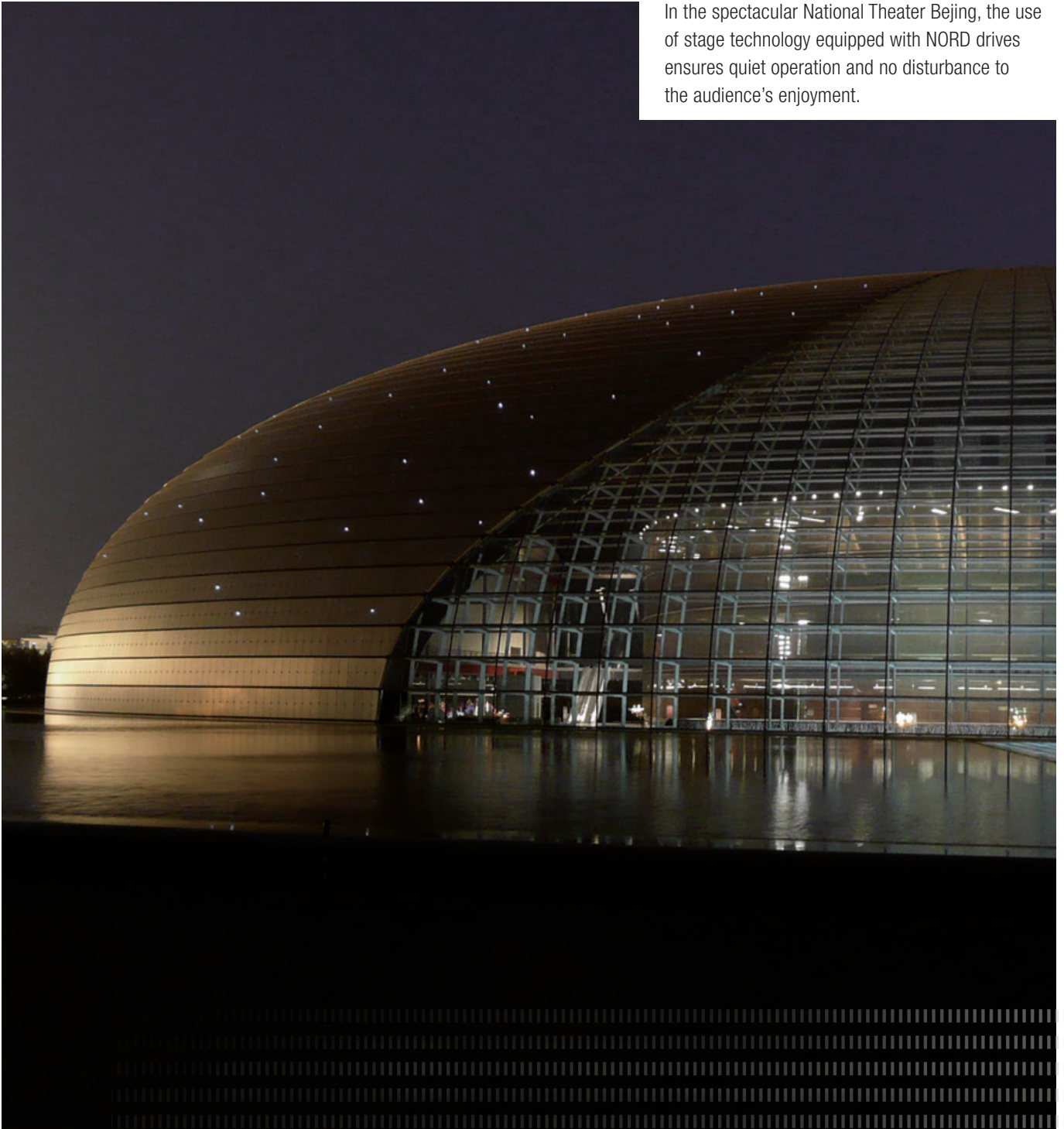
- ▶ Temperature sensors to protect against overheating
- ▶ Protection class IP66 or IP69K
- ▶ Stainless steel shafts and accessories, metal fan blades, fanless designs
- ▶ Moisture protection: Rust protection (dust and rust), multi-coat painting

Tried-and-tested

Some of the locations where NORD technology is in use:

- ▶ Friedrichspalast Berlin (Germany)
- ▶ Musiktheater Bielefeld (Germany)
- ▶ Státni 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 bord the cruise ship Oasis (Finland)

In the spectacular National Theater Beijing, the use of stage technology equipped with NORD drives ensures quiet operation and no disturbance to the audience's enjoyment.



Drive solutions for stage technology

UNICASE™ helical gear units (Catalog G1000)



- ✓ Foot or flange mounted
- ✓ Long life, low maintenance
- ✓ Closely stepped ratios
- ✓ Cast-iron UNICASE housing

Size: 11
Power: 0.16 – 200 HP
Torque: Up to 205,000 lb-in
Ratio: 2.76:1 – 14,340.31:1

CLINCHER™ parallel shaft gear units (Catalog G1000)



- ✓ Foot, flange, or shaft mounted
- ✓ Hollow or solid shaft
- ✓ Compact design
- ✓ Cast-iron or aluminum UNICASE housing

Sizes: 15
Power: 0.16 – 200 HP
Torque: Up to 680,000 lb-in
Ratio: 4.03:1 – 15,685.03:1

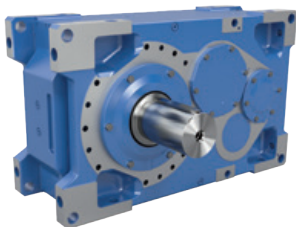
UNICASE™ bevel gear units (Catalog G1000)



- ✓ Foot, flange, or shaft mounted
- ✓ Hollow or solid shaft
- ✓ Cast-iron UNICASE housing
- ✓ Closely-stepped ratios

Sizes: 11
Power: 0.16 – 200 HP
Torque: Up to 442,500 lb-in
Ratio: 8.04:1 – 13,432.68:1

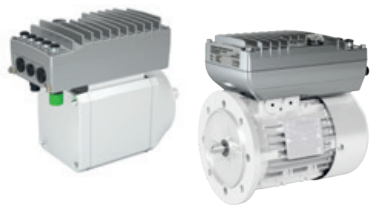
MAXXDRIVE® industrial gear units (Catalog G1050)



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

Sizes: 11
Power: 2.5 – 8,075 HP
Torque: 132,800 – 2,495,900 lb-in
Speed ratio: 5.60:1 – 30,000:1

NORDAC® ON/ON+ SK 300P variable frequency drives (Catalog E3000)



- ✓ Wall or motor mounted
- ✓ Ethernet communication
- ✓ Compact design
- ✓ Plug-and-Play solution

Sizes: 3
Voltage: 3~ 400V
Power: 0.25 – 1 HP

NORDAC® FLEX SK 200E variable frequency drives (Catalog E3000)



- ✓ Energy saving function
- ✓ 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: 0.33 – 30 HP

NORDAC® PRO SK 500E variable frequency drives (Catalog E3000)



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

Size: 11
Voltage: 1~ 110 – 120 V, 1~ 200 – 240 V, 3~ 200 – 240 V, 3~ 380 – 480 V
Power: 0.33 – 200 HP

Brake technology



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



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

Ordering is Easy With myNORD Online Tools!

- ▶ Obtain drawing files direct from quote configuration
- ▶ Effortlessly select & configure customized drive solutions
- ▶ Create quotes with account-specific net pricing
- ▶ Order-specific documentation
- ▶ 24/7/365 order tracking
- ▶ Select and order spare parts



Register now at myNORD.com!



US

NORD Gear Corporation
 Waunakee, WI
 800 NORD Drive
 Waunakee, WI 53597
 Tel. 888.314.6673
info.us@nord.com
www.nord.com

Corona, CA
 1180 Railroad St.
 Corona, CA 92882
 Tel. 888.314.6673
info.us@nord.com

Charlotte, NC
 300E Forsyth Hall Dr.
 Charlotte, NC 28273
 Tel. 888.314.6673
info.us@nord.com

CA

NORD Gear Limited
 Brampton, ON
 41 West Drive
 Brampton, ON L6T4A1
 Tel. 800.668.4378
info.ca@nord.com

MX

NORD DRIVE SYSTEMS SA DE CV
 Queretaro, Mexico
 Av. Industria Textil B.6
 Parque Industrial PYME, Huimilpan
 QRO - Mexico 76950
 Tel. 52 442 688 7110
info.mx@nord.com