



**INTELLIGENT DRIVESYSTEMS**  
AS INDIVIDUAL AS YOUR NEEDS



18008

**NORD GEAR**  
DRIVESYSTEMS

# NORD DRIVESYSTEMS



## Spanning the Globe to Serve You

Since 1965, NORD Gear has grown to global proportions on the strength of product performance, superior customer service, and intelligent solutions to a never-ending variety of industrial challenges.

All mechanical and electrical components of a drive are available from NORD Gear. Our products cover the full range of drive equipment: helical in-line, helical shaft-mount, helical bevel, helical worm gearboxes, motors and AC drives from 1/6 hp to 250 hp, with torques from 90 lb-in to 900,000 lb-in.

But NORD Gear does far more than manufacture the world's finest drive components. We provide our customers with optimum drive configurations for their specific purposes, providing each and every one of them with truly complete and efficient systems at a price/quality ratio unmatched in today's fast-changing markets.

NORD Gear makes its wide range of products easily available through a global network that provides all customers with prompt delivery and expert support services to consistently exceed customer expectations. We are firmly committed to being totally responsive to the ideas and specifications of every customer, anywhere in the world.

# Local Support from a Global Network



With factories in 30 countries, and representation in 80 countries, NORD products and parts are available in every industrialized nation in the world.

## Increased North American Presence

NORD covers North America with over 30 district offices and over 500 distributor branches. NORD operates a manufacturing and assembly facility in Waunakee, WI, Charlotte, NC, Corona, CA, Brampton, ON, and Monterrey, Mexico, resulting in an ever-increasing capacity in the United States and Canada and giving our customers the shortest lead times in the industry.



*Brampton, Ontario facility*



*Waunakee (Madison), WI facility*

## Many Locations, One Team

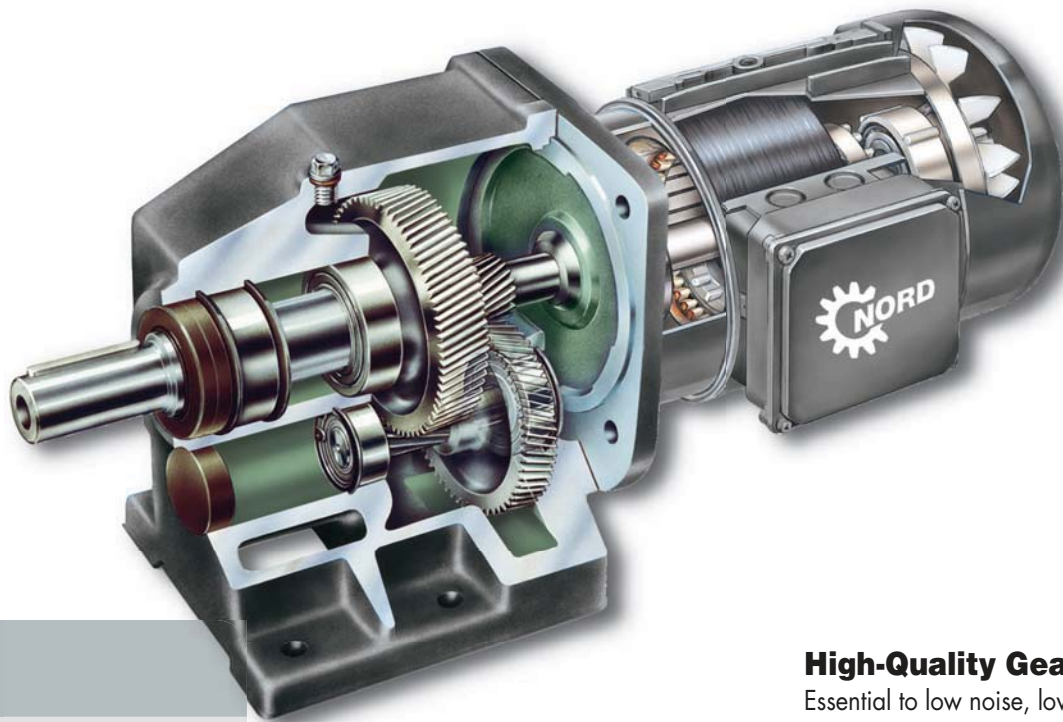
Cooperation is the key to seamless delivery, service, and support. At NORD there is an intensive exchange of information between our engineers, international customers, assembly, and customer service groups. It is this cooperation and sharing of information that makes NORD your reliable worldwide partner.



*Bartgeheide (Hamburg), Germany facility*



# STANDARD FEATURES



## UNICASE™

NORD heavy-duty, one-piece housings are precisely machined to exacting standards. Internal reinforcements further increase strength and rigidity. All bearings and seal seats are contained within the casting, eliminating splits or bolt-on carriers that can weaken the housing and allow oil leakage. Bores and mounting faces are machined in one step, producing extremely precise tolerances — thus ensuring accurate positioning of gear teeth, bearings and seals, and longer life for all components.

### Benefits

- Leak-free design
- Quiet operation
- High output torque capabilities
- Extended lubrication life
- Longer gear and bearing life
- Superior dependability/low maintenance/longer life



## High-Strength Gear Cases

NORD gear housings are made for maximum torque delivery.

### Benefits

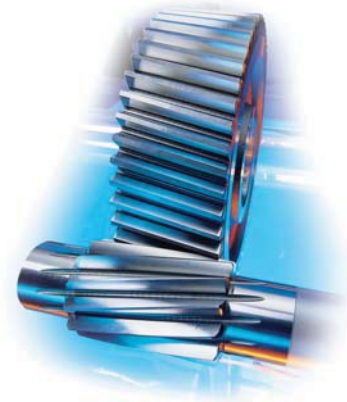
- Thick housing wall cross-sections
- Torsionally stiff
- Holds shaft centers
- Interior housing walls sealed – for long service life

## High-Quality Gearing

Essential to low noise, low maintenance, and high durability!

### Benefits

- Designed and manufactured up to AGMA CLASS 13
- Case-hardened steel
- Exceptional hardness: 58 Rc minimum
- High-speed gears are ground; low-speed gears skive hobbled
- 275% momentary overload capacity



# Better Ideas For Better Results.

## Stainless Steel Paint

The standard NORD protective finish — not really a paint, but a resin with 316 stainless steel.

### Benefits

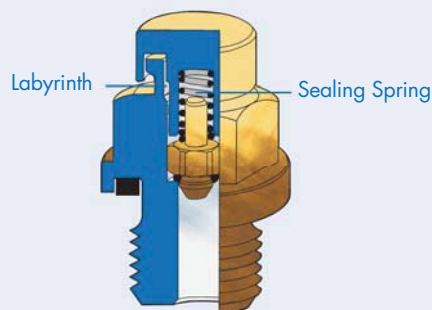
- 40% greater impact resistance
- Tough industrial primer
- Resistant to most solutions and cleaning solvents
- USDA compliant for food processing (incidental contact)

## AUTOVENT™

Prevents bearing damage by impeding entry of foreign material (water, dust, corrosives, etc.) through breather plugs. Ball and spring check valve opens at 2 psi during operation and closes tightly when gearbox cools, producing a slightly negative pressure that keeps the valve seal tight. Keeps water out of oil to maintain viscosity and prevent contamination, foaming and oxidation. A brass canopy protects valve elements — perfect for humid conditions, washdown applications, and dusty environments.

### Benefits

- Cleaner gearbox oil
- Extended lubrication life
- Longer-lasting seals, gears, and bearings



## Energy Efficiency

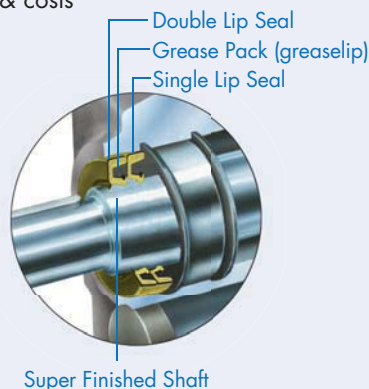
Lowering your operating costs is one of our greatest goals! NORD research and development focuses on energy efficiency, with gearboxes, motors, and frequency inverters designed for lower energy consumption. Our fully diverse line of in-line or right angle units and motors has been developed to suit your needs.

## QUADRILIP™ Sealing

The QUADRILIP™ system has four components for sealing lubricant inside, and contaminants outside, the speed reducer. The system includes a double lip seal, single lip seal and grease pack barrier (grease lip). Furthermore, the shaft seal area is super-finished.

### Benefits

- Superior protection against leaks
- Long seal life
- Improved protection against contaminants
- Improved speed reducer life
- Reduced maintenance requirements & costs



## Factory Oil-Filled

Oil fill before shipping prevents damage from dry start-ups.

### Benefits

- No need for filling onsite
- Ensures proper oil grade and fill level

## High-Performance Motors and Brakemotors

NORD motors are designed to run cool for longer service life. Low rotor inertia and high starting torque allow peak performance in the most difficult applications for inverter and vector duty per NEMA MG 1-1998 Section 31.4.4.2 voltage spikes. Our motors are internationally accepted, conforming to North American NEMA MG 1 and international IEC electrical specifications. High performance options include brakes, encoders, and forced cooling fans.



## NEMA Input Compact-Coupled

This NORD design allows for durability and ease of use.

### Benefits

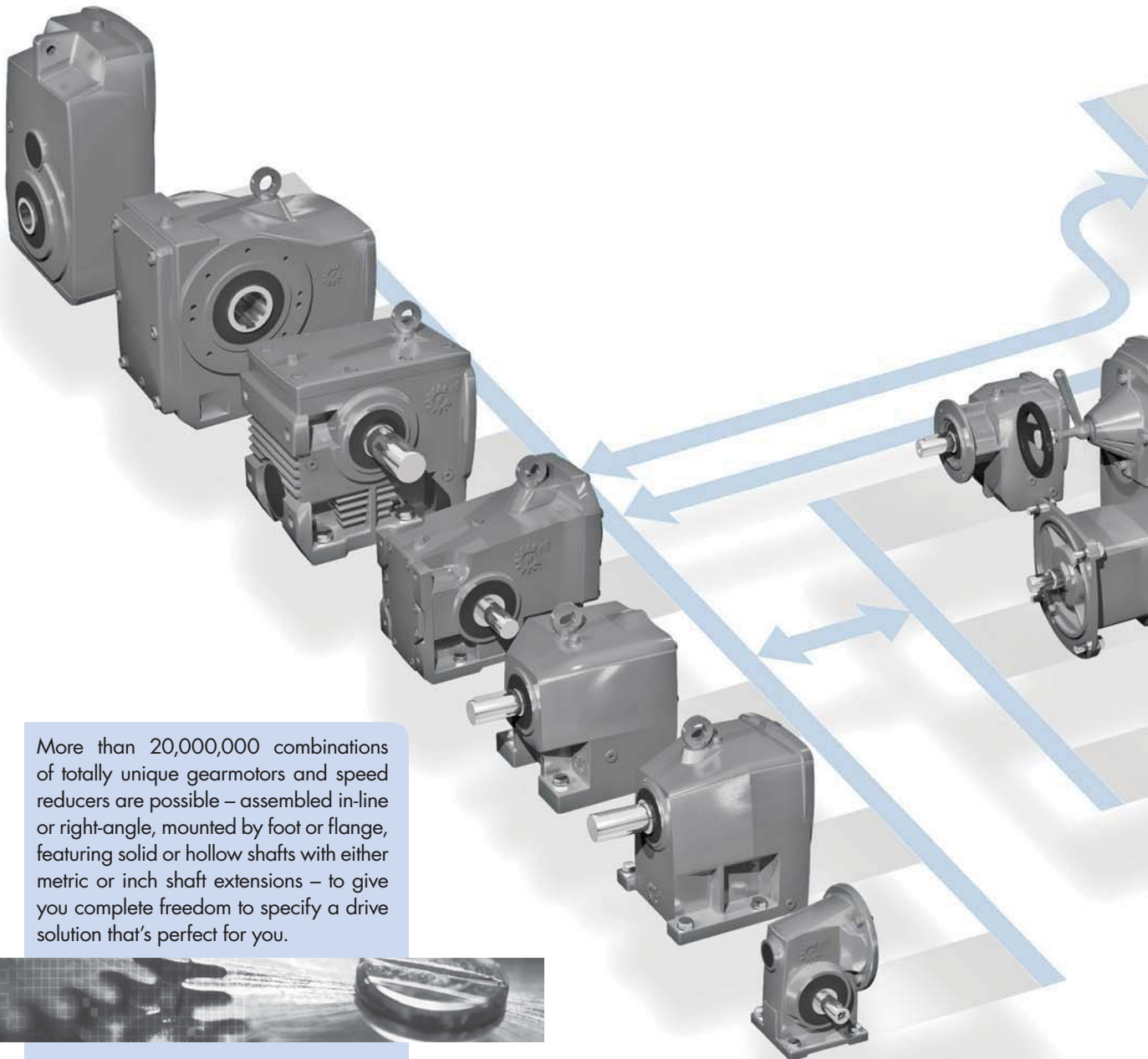
- Short compact length
- Simple mounting
- Simple removal — motor and gear unit will not corrode together



# Modular Design

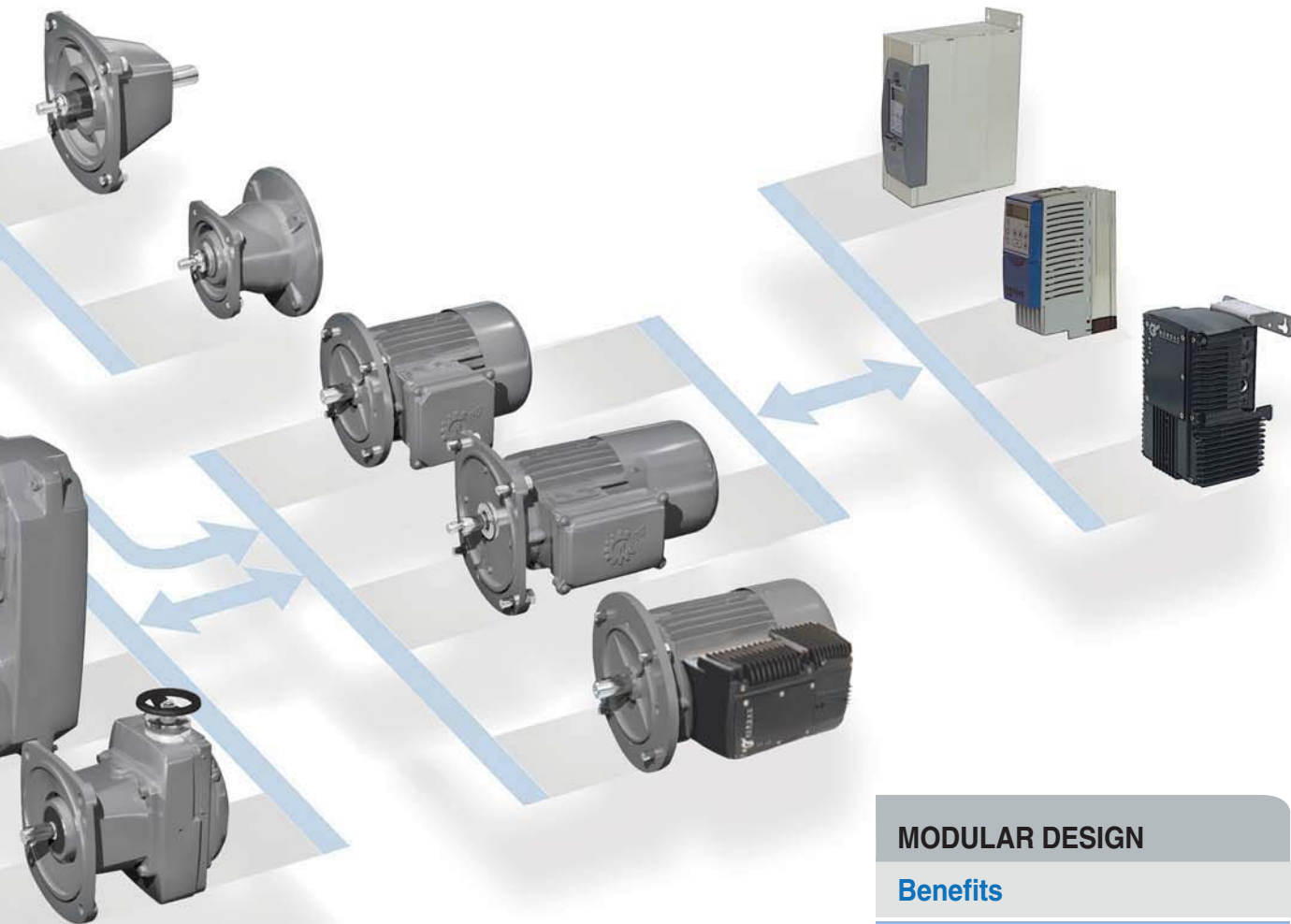


NORD's modular design philosophy provides you with a competitive edge by allowing you to configure drive systems to exactly fit your applications.



More than 20,000,000 combinations of totally unique gearmotors and speed reducers are possible – assembled in-line or right-angle, mounted by foot or flange, featuring solid or hollow shafts with either metric or inch shaft extensions – to give you complete freedom to specify a drive solution that's perfect for you.

# For Unlimited Versatility



## MODULAR DESIGN

### Benefits

- More output speeds
- More mounting arrangements/  
Greater flexibility
- Fewer gear stages/Lower cost
- Metric and inch products

NORD engineers stand ready to assist you with your custom applications. Most standard drives can be modified to your purposes, and custom designs can be developed for special applications.



# In-Line and Parallel Drives



## HELICAL IN-LINE

### Features

- Foot or Flange Mount
- 1/6 to 200 hp
- Torque up to 205,000 lb-in
- Output speeds from 0.1 to 960 rpm
- Gear ratios from 1.82:1 to over 300,000:1
- Up to 98.5% efficient
- Ideal for pumps and conveyors
- Eliminates belts and chains

# EFFICIENT



## NORDBLOC® HELICAL IN-LINE

### Features

- Foot or Flange Mount
- 1/6 to 50 hp
- Torque up to 26,550 lb-in
- Output speeds from 4.8 to 900 rpm
- Gear ratios from 1.88:1 to over 370:1
- Up to 97% efficient
- High torque in a small package
- Replaces most European designs



## SHAFT MOUNT CLINCHER™

### Features

- Shaft, Foot or Flange Mount
- Solid or hollow shaft
- 1/6 to 200 hp
- Torque up to 797,000 lb-in
- Output speeds from 0.1 to 410 rpm
- Gear ratios from 4.26:1 to over 300,000:1
- More than 50 ratios per case size
- Up to 97% efficient
- Excellent for conveyor and travel drives
- Heavy-duty bearings for vertical mixers
- Integral motor eliminates belts and motor platform

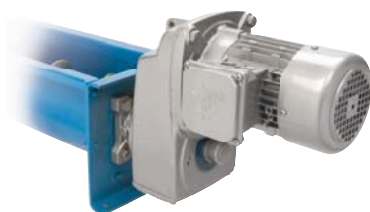
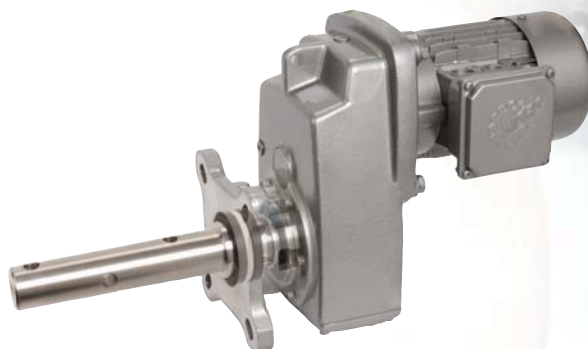
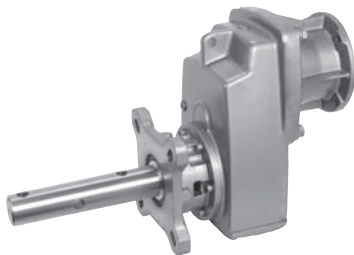


# TOUGH

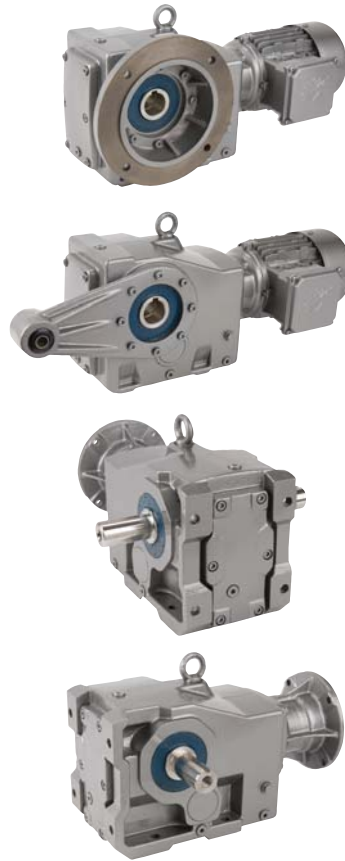
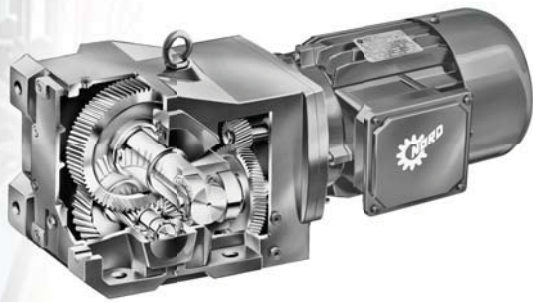
## CLINCHER™ SCP (SCREW CONVEYOR DRIVE)

### Features

- CEMA Mount
- 1/4 to 60 hp
- Torque up to 53,100 lb-in
- 3 to 330 rpm
- Up to 97% efficient
- Integral motor eliminates belts and guards
- Reduced maintenance
- Optimized sealing
- Versatile mounting
- Tapered 3-hole drive shaft
- Quick external removal



# Right-Angle Drives

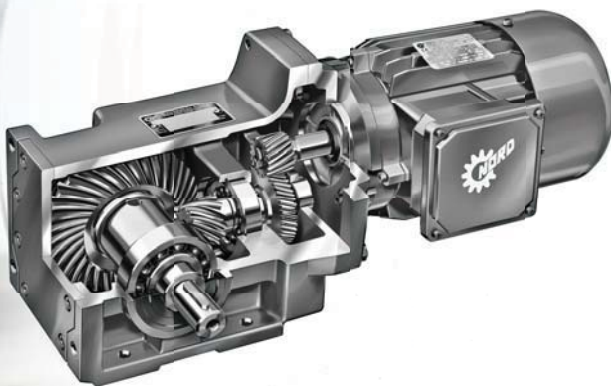


## RIGHT-ANGLE HELICAL-BEVEL

### Features

- Foot, Flange, or Shaft Mount
- Solid or hollow shaft
- 1/6 to 200 hp
- Torque up to 283,000 lb-in
- Output speeds from 0.1 to 218 rpm
- Gear ratios from 8.04:1 to over 300,000:1
- Up to 95% efficient
- Stackable for counter-rotating mixers
- Low backlash
- Long-life wear-free gearing
- Eliminates belts and chains

# DURABLE



## RIGHT-ANGLE HELICAL-BEVEL 2-STAGE

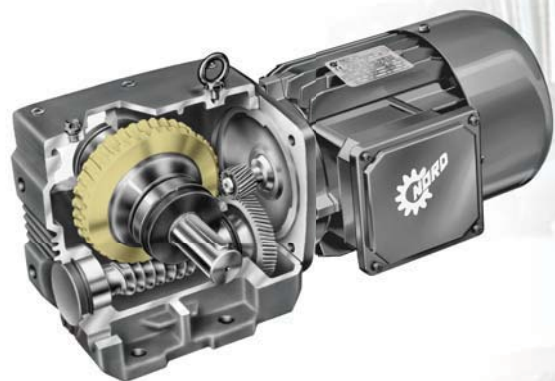
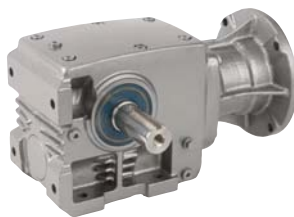
### Features

- Foot, Flange, or Shaft Mount
- Solid or hollow shaft
- 1/6 to 7.5 hp
- Torque up to 5,840 lb-in
- Output speeds from 24 to 360 rpm
- Gear ratios from 4.1:1 to 72:1
- Up to 97% efficient
- Small package size
- Replaces worm drives
- Long-life wear-free gears

## RIGHT-ANGLE HELICAL WORM

### Features

- Foot, Flange, or Shaft Mount
- Solid or hollow shaft
- 1/6 to 20 hp
- Torque up to 27,585 lb-in
- Output speeds from 0.1 to 398 rpm
- Gear ratios from 4.40:1 to over 300,000:1
- More ratio choices; eliminates belts and chains
- Long-life synthetic oil



## MINICASE® RIGHT- ANGLE WORM

### Features

- Foot, Flange, or Shaft Mount
- Solid or hollow shaft
- 1/6 to 2 hp
- Torque up to 2,390 lb-in
- Output speeds from 3 to 324 rpm
- Gear ratios from 5.40:1 to over 582:1
- Long-life synthetic oil
- Corrosion resistant
- Paint-free



# QUIET



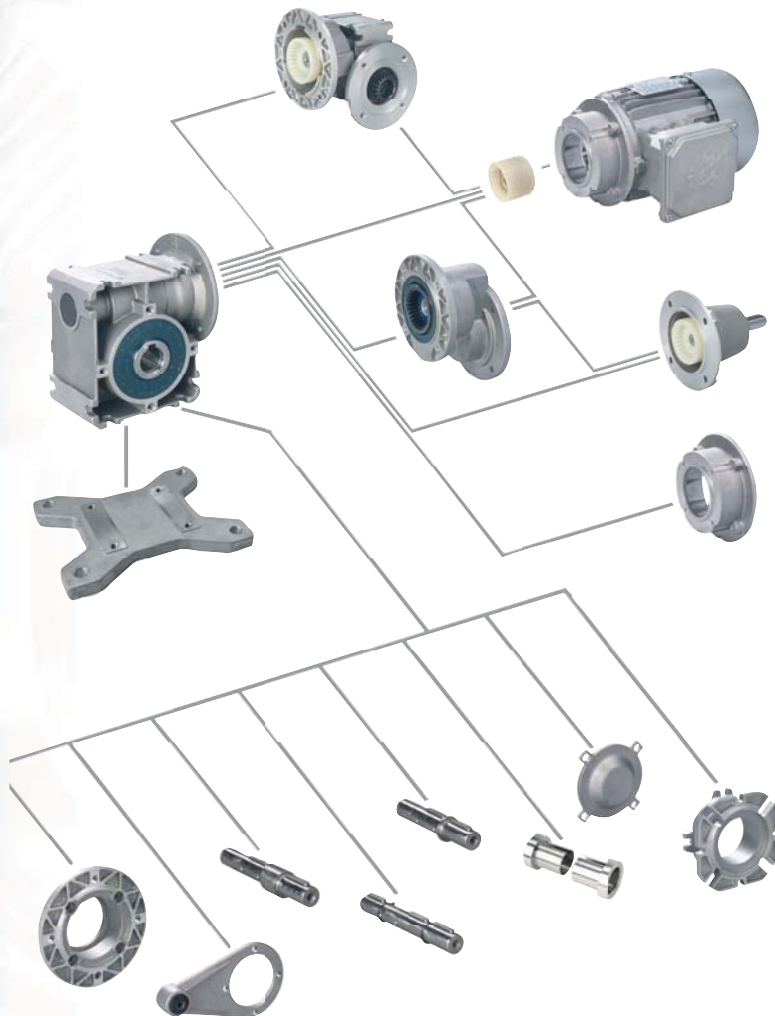
# Right-Angle Drives



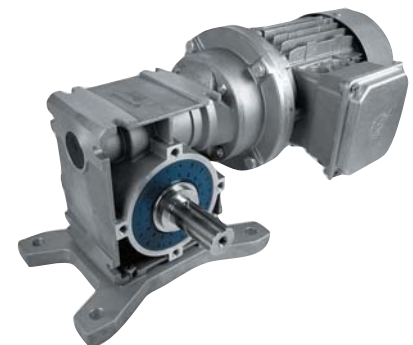
## FLEXBLOC®

### Features

- Foot, Flange, or Shaft Mount
- Hollow shaft or plug-in solid shaft
- 1/6 to 5 hp
- Torque up to 4,683 lb-in
- Gear ratios from 5, 7.5, 10,... 100,... 3000:1
- UNICASE™ design
- Modular construction
- High-capacity oversized bearings
- Sealed for life
- NEMA C-face with coupling



# VERSATILE



# Mechanical Variable Speed Drives

## NORDISC™ VARIABLE-SPEED FRICTION DRIVES

### Features

- Available with NORD integral gear unit
- NEMA C-face motor
- 1/4 to 7.5 hp
- 7:1 adjustable speed range
- Constant torque
- Speed-changing handwheel will not vibrate from set position
- Wear-free adjustment mechanism
- Great for bottling and food processing applications



## FLEXIBLE

## TITAN™ VARIABLE SPEED BELT DRIVES

### Features

- 1/4 to 150 hp
- 6:1 adjustable speed range
- U-flow or Z-flow configurations available
- Simple handwheel speed adjustment with locking mechanism
- Static conducting belt
- Split belt case for simple maintenance
- Dufondal groove-resistant pulleys



# Motors



## MOTORS

### Features

- 1/6 to 200 hp
- Integral brakes
- Inverter/Vector duty
- Standard or energy-efficient designs
- NEMA C-face 56C-215TC
- IEC foot and flange mount
- Long service life
- High start-stop capacity
- Low rotor inertia
- US/Canadian/International voltages and frequencies
- **UL**, **CCC**, and **CE** approved for worldwide operation

# COST-EFFECTIVE



## TRIO SK300E

### Features

- A speed reducer, integral motor and frequency inverter all fully assembled in one compact package
- SK300E Inverter Models
  - 200 – 240 VAC 3 Phase 50/60 Hz input 1/2 through 3 hp
  - 380 – 480 VAC 3 Phase 50/60 input 3/4 through 5 hp
  - Full range of built in pre-engineered options
- NORD Inverter/Vector duty motors with full range of options
- UNICASE™ speed reducers with full range of types, ratios and options

# Motor Controls

## SK500 / 520 / 530E FLUX VECTOR INVERTER DRIVES

### Features

- Compact, high performance
- 380-480V, 3-phase to 10 hp
- 200-420V, 3-phase to 5 hp
- 200-420V, 1-phase to 3 hp
- 110-120V, 1-phase to 1.5 hp

### SK500E

- ISD – Higher performance sensorless vector control

### SK520E

- Closed-loop flux vector control
- Incremental encoder input
- Added I/O
- CAN bus
- Added RS485 via terminals

### SK530E

- POSICON - Integrated position control



# PRECISE

## SK700E FLUX VECTOR INVERTER DRIVES

### Features

- Flexible, high performance
- 380-460V, 3-phase, to 200 hp
- Selectable control modes
  - V/f for multiple motors
  - Sensorless vector control
  - Flux vector control – (requires optional encoder feedback card)
  - Position control – (requires optional PosiCan card)
- Modular construction with plug-in options
  - Technology Units
  - Customer interface Units
  - Special Extension Units



# Dependable Service

**Customer satisfaction is our top priority.**



With close cooperation between our designers, planners, and engineers, we create the most efficient and cost effective solution for our individual customer. Our development and marketing engineers ensure our product works successfully in your application.



## Short, On-Time Delivery

As a NORD customer, you can rest assured that your order will be delivered on time. Because NORD has both decentralized assembly and manufacturing operations and a linked global network, we offer our customers:

- fast, reliable responses
- greater product versatility
- shorter lead times
- timely shipping
- rapid delivery

## Quality

Quality is assured at NORD assembly and manufacturing facilities, based on ISO 9000 standards — from careful inspection of incoming materials to closely monitored machining operations including gear cutting, turning, hardening and grinding as well as finishing and assembly.





# For Increased Satisfaction

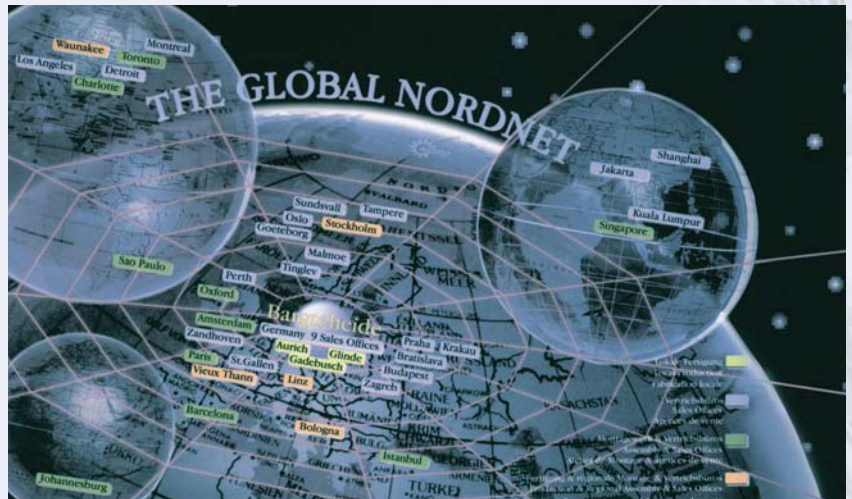
## NORD 911

Trouble? Just call 715-NORD-911 (in Canada, 905-796-3606). Emergency service is available 24 hours a day, 7 days a week. We'll answer your call, ship the parts, or build a unit and have it shipped directly to you to provide what you need, when you need it.



## Global Availability

From Shanghai to Charlotte, and all points between, NORD reaches customers around the world. Deliveries, service, and product support are close at hand, regardless of your location.



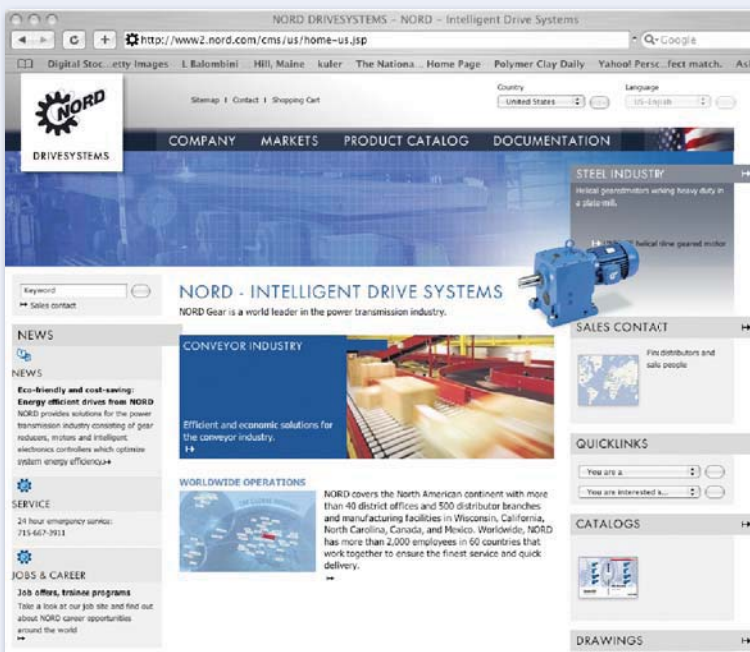
## Online Tools

NORD offers comprehensive, searchable product information online. The Internet makes it possible for our customers to reach us anytime, anywhere — 365 days a year, 24 hours a day.

- Online order tracking
- Parts list and maintenance schedules
- Online drive selection software
- DXF scale drawing

## Worldwide Standards

NORD products are designed and manufactured based on the latest North American and global standards.



# Manufacturing



Continuous investment in state-of-the-art manufacturing technology



*Single set-up housing machining*



*Gear quality inspection*

NORD continually invests in research, manufacturing and automation technology. This is to ensure the highest possible quality at affordable prices. NORD invests heavily in our North American facilities as well as our factories around the world. Recent examples include expanding our Waunakee factory and adding numerous new large gear unit assembly cells. In our Glinde, Germany gear factory we added a state-of-the-art Vacuum multi-chamber carburization system.



*Automated gear manufacturing*

# Flexible Solutions



*Distributed Control*

Baggage handling conveyor system with motor mounted Trio SK300E VFDs as part of a distributed control topology.



*Automotive Production*

Co-axial drive set. Mixer utilizing two bevel gear units configured as counter rotating drives. One reducer powers the mixer impeller. One reducer powers the scraper blades.



*Counter Rotating Mixer*

Overhead drives are often used in automotive assembly plants' power & free overhead conveyor systems. The drive system consists of a bevel drive with a heavy duty drop bearing system and a high performance inverter duty brakemotor.



[www.nord.com](http://www.nord.com)

**NORD Gear Corporation**

National Customer Service Toll-Free: 888.314.6673  
info.us@nord.com

**NORD Gear Limited**

Toll-Free in Canada: 800.668.4378  
info.ca@nord.com

**WEST**

Corona, CA (Los Angeles)  
Phone: 608.849.0190

**MIDWEST**

Waunakee, WI (Madison)  
Phone: 608.849.7300

**EAST**

Charlotte, NC  
Phone: 608.849.0140

**CANADA**

Brampton, ON (Toronto)  
Phone: 905.796.3606