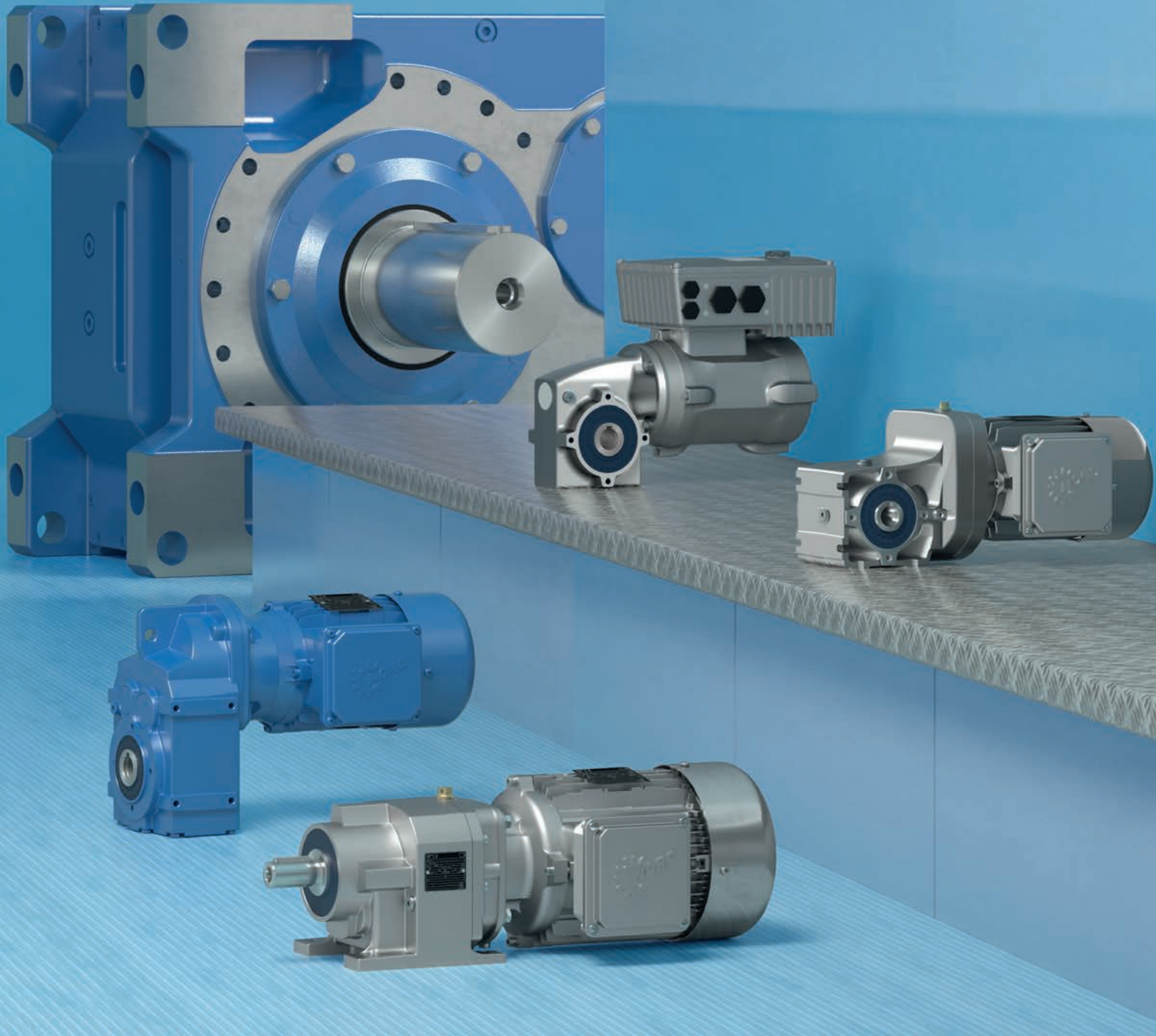


Intelligent Drivesystems, Worldwide Services



US

SURFACE PROTECTION FOR NORD DRIVE SOLUTIONS



NORD DRIVESYSTEMS GROUP

High-performance Solutions

NORD's extensive product portfolio is continuously evolving to meet the needs of today's fast-changing markets, but NORD 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 complete and efficient systems at a price/quality ratio that's unmatched.

By continuing to invest in the latest research, manufacturing, and automation technology, we are able to deliver innovative drive systems with the highest quality, reliability, and value found in the marketplace today. In short, we never stop improving.

On-time Delivery

Our inked global network of assembly and manufacturing operations gives you the best of both worlds – a world leader with local representatives. NORD has subsidiaries and sales partners in 98 countries on five continents, ensuring local inventory, assembly centers, technical support, and customer service.

This approach also allows us to provide the shortest lead times in the industry. As a NORD customer, you can rest assured that your order will be delivered on time and on spec. We offer our customers:

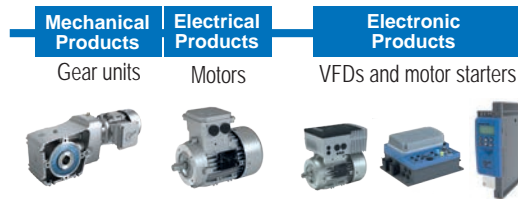
- Fast, accurate, reliable service
- Unmatched product versatility and customizations
- Short lead times
- Technical guidance from experienced engineers
- MyNORD online tools (configure, price, quote, and track your order)
- 24/7/365 after hours emergency support via the NORD 911 hotline

Peace of Mind

NORD's customer-first approach means superior drive solutions and peace of mind are just a call or click away. Put NORD's global team of engineers, manufacturing, service and support technicians to work for you. Together, we'll build something great!



Headquarters and technology center
in Bargteheide, near Hamburg



Innovative drive solutions
for more than 100 branches of industry

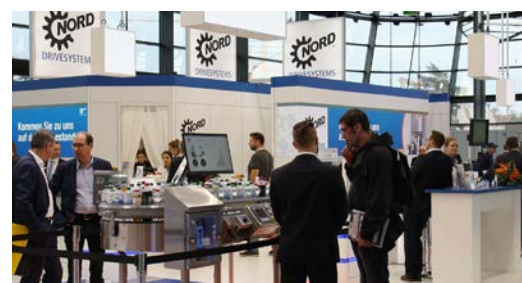


7 production locations with cutting-edge technology
produce gear units, motors, VFDs, and more to provide complete drive systems from a single source.



Subsidiaries and sales partners in 98 countries on 5 continents
provide local inventory, assembly, technical support, and industry-leading 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 4,000 employees throughout the world
create customized solutions.

 **Contact Us Today! 888.314.6673**
info.us@nord.com

PROTECTING THE ENVIRONMENT WITH HIGH-SOLID PAINT

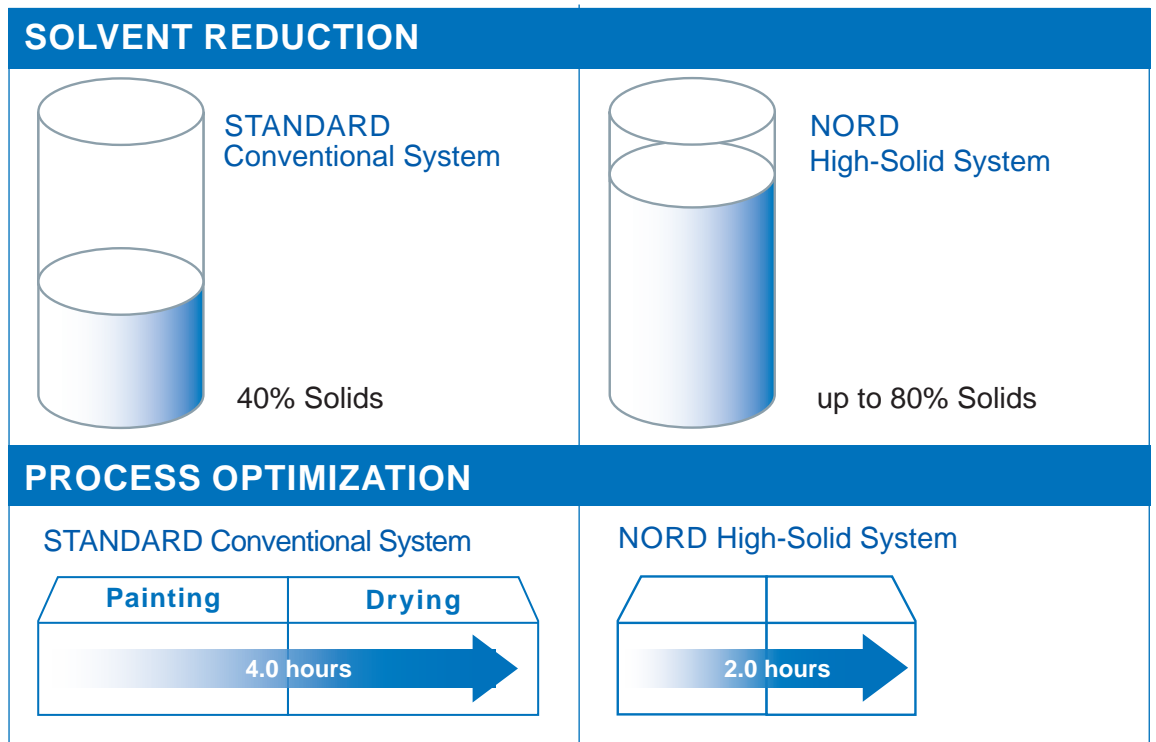
Fewer solvents and greater efficiency

NORD uses the latest generation of high-solid paints, which reduces the use of solvents to levels far below the legally required limits. High-solid paints is a term used to identify a paint that is formulated with a high concentration of resin – up to 80% – and a small concentration of solvents. As a result, these paints contribute considerably less environmental pollution than other industrial paints.

The high-solid paints we use combine the emission benefits of hydro paints with the functionality of solvent-based coating materials. By complying with the VOC standards, we make an important contribution to protecting the environment.

In addition, the lower solvent proportion of our paints allows for short drying times in production – a decisive advantage over water-based paint systems. The substrates materials for water-based paint systems have to be cleaned and de-greased with solvents before they are painted.

Ultimately, our customers benefit from faster production and delivery times.

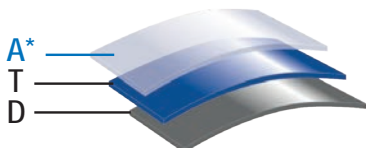
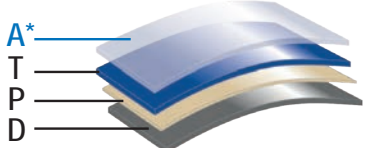
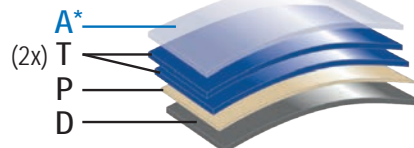
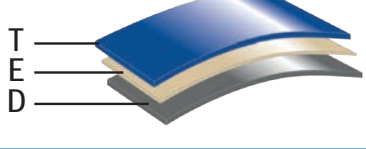
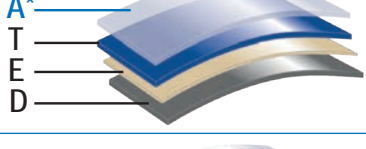
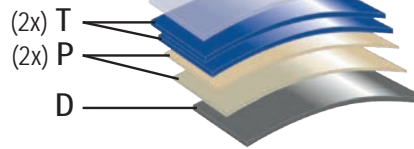
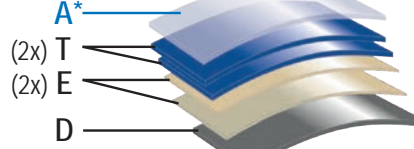


Optimum protection for every application

Our coating systems have been successfully tested by an independent laboratory:

- Cross cut test according to DIN EN ISO 2409 to test the adhesion of the paint system
- Salt spray test according to DIN EN ISO 9227 to test corrosion resistance
- Evaluation of degree of delamination according to DIN EN ISO 4628-8
- All NORD paints are USDA compliant

PREVENT CONTAMINATION WITH THE RIGHT COATING SYSTEM

Coating / Field of Application		Class***	Structure	Coating Thickness**
Basic Basic+ Indoor installation. <i>Previously Standard Stainless Steel (SS)</i>		C2		50 - 90 µm
NORD Severe Duty 2 (NSD2) NORD Severe Duty 2+ (NSD2+) Indoor installation and protected outdoor installation (i.e. open, unheated halls). <i>Previously NSD+ and NSDx3</i>		C2		110 - 150 µm
NORD Severe Duty 3 (NSD3) NORD Severe Duty 3+ (NSD3+) Outdoor installation, city, and industrial atmosphere with low contamination.		C3		160 - 200 µm
NORD Severe Chem Duty 3 (NSDC3) Normal chemical contamination.		C3		100 - 140 µm
NORD Severe Food Duty 3 (NSDF3) NORD Severe Food Duty 3+ (NSDF3+) Food production and packaging areas.		C3		100 - 140 µm
NORD Severe Duty 4 (NSD4) NORD Severe Duty 4+ (NSD4+) Outdoor installation, city, and industrial atmosphere with moderate contamination.		C4		220 - 260 µm
NORD Severe Duty 5 (NSD5) NORD Severe Duty 5+ (NSD5+) Outdoor installation, city, and industrial atmosphere with high contamination.		C5		200 - 240 µm
A*	Optional antimicrobial clear top coat (+ versions) Coating Thickness + 25 µm	T	Top Coat, two-component Polyurethane	
		E	Epoxy Primer, two-component EP Zinc Phosphate	
		P	Primer, two-component Polyurethane	
		D	Dip Primer, single component (for cast-iron units only)	

***Comparable to DIN EN ISO 12944-2 classification of ambient conditions

**Protocol of the coating thickness based on ISO 19840 available on request

CLEAN APPEARANCE IN YOUR CORPORATE COLOR

Global quality to reinforce your corporate identity

Throughout the world, NORD DRIVESYSTEMS offers you a uniform series of standard colors as well as preferred colors. In addition, we also implement individual solutions according to your specifications, which optimally match the corporate design and branding of your company.

U.S. standard colors:

- RAL 9007C Gray Aluminum / Stainless Steel Gray
- RAL 9003 Signal White
- RAL 5009 Azure Blue

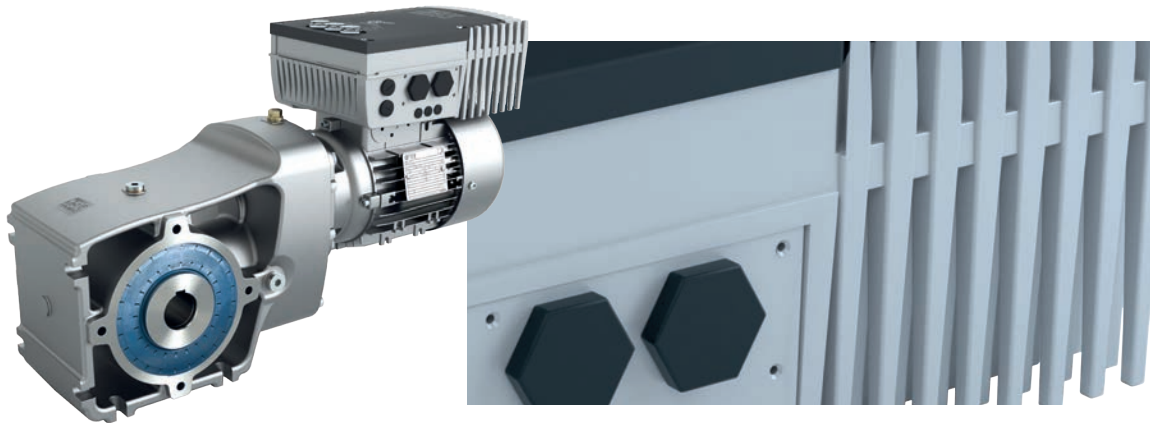
Global standard colors are stocked in our painting facilities throughout the world:

- RAL 7031 Blue-Gray
- RAL 5010 Blue

Other options include special colors according to RAL, BS, Munsell, and Pantone.

Powder coating for decentralized drive technology

Environmentally friendly high performance coatings for SK 200E series decentralized variable frequency drives with IP66 protection class



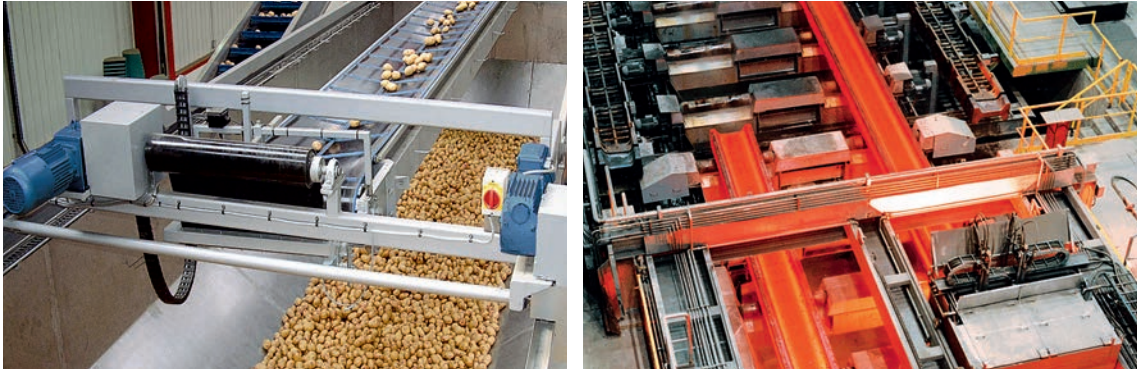
Due to their extremely robust and durable properties, powder coatings are highly suitable for the electrical industry. Surfaces treated in this way are resistant to impact, scratches, and wear. They are also resistant to weather and chemicals, making them even more durable than conventional NORD paints.

In the electrical industry, the anti-static properties of electrically conducting powder paints are relevant for the prevention of static charging of the drive units. Potential interference is eliminated and downtime is minimized.

Environmental protection is becoming increasingly important in the field of surface coatings. NORD offers powder coating options that do not use solvents, but rather dry powder, which is melted onto the unit in a kiln.

Powder coating is available in one color (RAL 9006 - White Aluminum).

PRESERVE SAFETY WITH THE RIGHT TOP COAT



The paint systems used by NORD DRIVESYSTEMS are resistant to chemicals and have been tested for their resistance to all common substances which could have a negative affect on the environment.

Once fully dry, NORD paints are food-safe and fulfil the NSF / ANSI 51-2009e test criteria. No further top coats are required.

NORD's protective properties extend beyond paint coatings and surface treatments for its products. All NORD motors and speed reducers are constructed to provide a high degree of protection against wet and severe conditions. A variety of standard and optional features are available to help your NORD gear unit endure the harshest environmental conditions year after year.

Standard Gear Unit Features

- UNICASE™ housing design
- Autovent breather
- Factory primer on all cast-iron components
- Corrosion-resistant nameplate

Optional Gear Unit Features

- Stainless steel output shafts
- Stainless steel hardware
- Custom venting solutions – stainless steel, filtered vents

Standard Motor Features

- Shaft lip seals on both ends of the motor shaft
- Sealed stator to endbell connections to exclude moisture
- Moisture-resistant varnish dipped windings
- Double coated magnetic wire insulation
- Conduit box sealed with gaskets
- Corrosion-resistant alloy materials
- Tropical protection – inorganic insulating components

Optional Motor Features

- IP66 enclosure protection (IP55 standard)
- Condensation drain holes (KB or KBO)
- Resin-sealed terminal box (KKV)
- Epoxy-dipped motor windings (EP - US, ICP - Global)
- Drip covers – canopy cover or double fan cover (RD or RDD)
- Totally Enclosed Non-Ventilated (TENV)
- Space Heaters (SH)
- Brake protection options
 - Stainless steel brake plate (RG)
 - Rubber dust boot with stainless brake plate (SR)
 - IP66 Sealed Brake
 - Sealed brake rectifiers

THE ALTERNATIVE TO STAINLESS STEEL

nsd tupH™ SURFACE TREATMENT



Sealed Surface Conversion System

NORD gear motors with nsd tupH™ are the ideal choice for use in challenging environmental conditions.

- Easy-to-clean surfaces
- Resistant to acids and alkalis (wide pH range)
- Won't blister or flake
- Corrosion-resistant
- Cost-effective alternative to stainless steel
- Free from chromates
- Complies with FDA Title 21 CFR 175.300

nsd tupH™ for extreme environmental requirements

- Food and beverage industry
- Dairies
- Pharmaceutical industry
- Water and sewage plants
- Car washes
- Offshore and coastal areas
- Chemical cleaning (Wash-down, wide PH range)

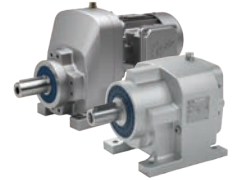
The complete solution for heavy wash-down conditions

- Surface-treated housing components
- DIN and standard components made from stainless steel
- Wash-down housing (for gear unit and motor)
- Stainless steel shafts
- Special shaft sealing rings
- Food grade oil

Tests performed on surface-treated aluminum housing components

- ASTM D714 Blister Formation
- ASTM D610-08 Corrosion
- ASTM D1654-08 Scratching
- ASTM B117-09 Salt Spray Test
- ASTM D3170 Gravelometer Test
- DIN EN ISO 9227 Salt Spray Mist Test
- DIN EN ISO 2409 Cross-cut Test

Products available with nsd tupH™:



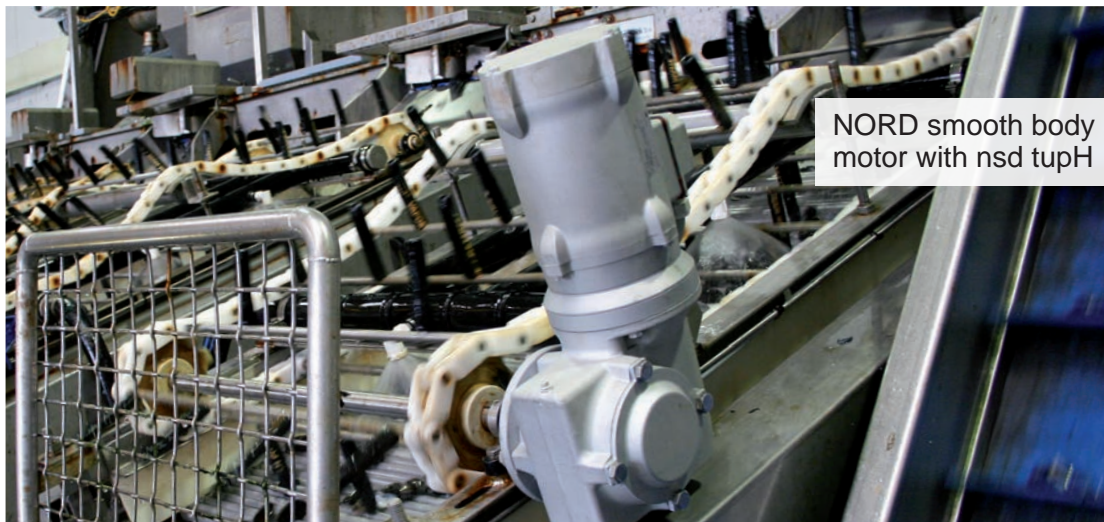
NORDBLOC®.1 Helical Gear Units (up to size 6)



Two-stage Helical Bevels



UNIVERSAL SMI Worm Gear Units



NORD smooth body motor with nsd tupH



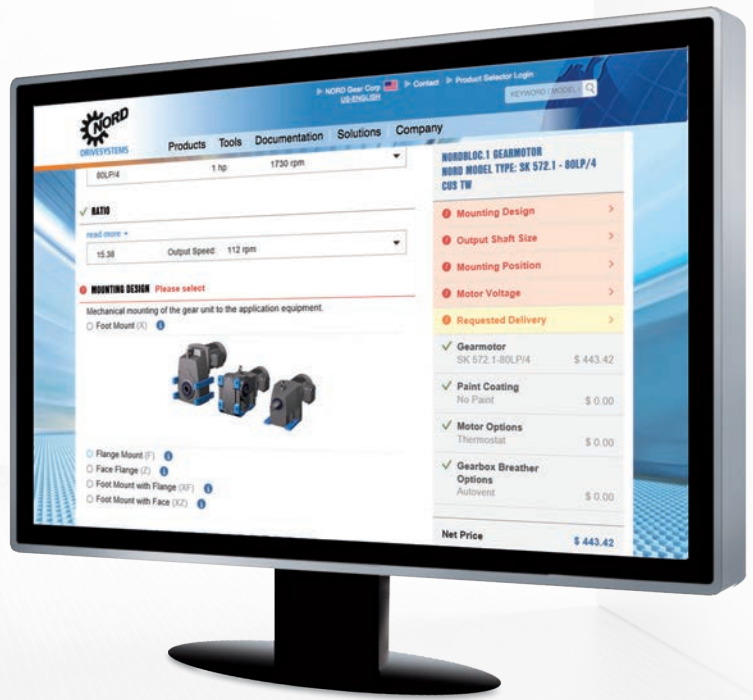
Smooth Body Motors



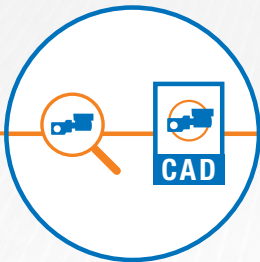
SK180E VFD
SK35E Motor Starter

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



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NORD Gear Corporation - US
MEMBER OF THE NORD DRIVESYSTEMS GROUP
info.us@nord.com

Waukegan, WI
800 NORD Drive
Waukegan, WI 53597
Tel. 888.314.6673

Corona, CA
1180 Railroad St.
Corona, CA 92882
Tel. 888.314.6673

Charlotte, NC
300 Forsyth Hall Dr.
Charlotte, NC 28273
Tel. 888.314.6673

NORD Gear Limited - Canada
MEMBER OF THE NORD DRIVESYSTEMS GROUP
info.ca@nord.com

Brampton, ON
41 West Drive
Brampton, ON L6T4A1
Tel. 800.668.4378

