

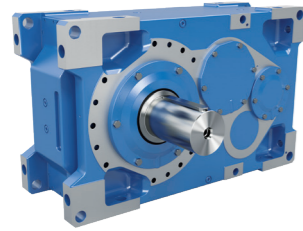
Smooth surface aluminium drives

Suitable for use in Wash-down areas

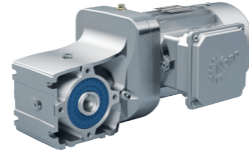


DRIVESYSTEMS

Our Solution. Your Success.



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 4,800 employees throughout the world create customised solutions.



Headquarters in Bargteheide

Motor production

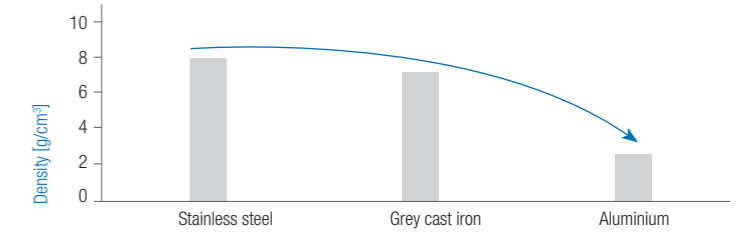
Production and assembly

Motor mounting

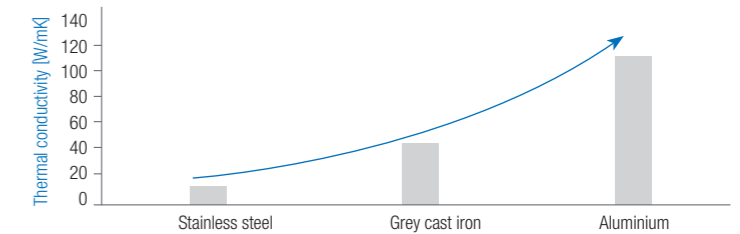
Advantages of NORD smooth surface aluminium drives

NORD drives with smooth surfaces combine material and design properties, and offer extraordinary advantages.

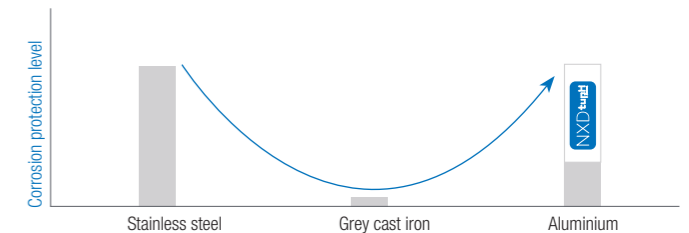
- ▶ Low weight – As a light metal, aluminium has a density around three times smaller than steel.



- ▶ High cooling capacity – Aluminium's thermal conductivity is eight times higher than that of stainless steel.



- ▶ High level of corrosion protection – Aluminium forms a protective oxide layer. Thanks to the NXD tuPH surface and corrosion protection developed by NORD, aluminium has a resistance comparable to stainless steel (please find more information in flyer S3900).



- ▶ Self-draining design – NORD smooth surface drives are characterised by an external shape with no hard edges or crevices and a Wash-down friendly design. Liquids can drain off in any installation position and there are no areas where corrosive liquids can remain. This is a prerequisite for easy cleaning.

- ▶ Hygiene-friendly design – Thanks to the design of the NORD smooth surface motors, without cooling fins and fans, germ accumulations are avoided and the spread of germs via cooling air flows is effectively prevented.

Smooth surface aluminium drives

Drives with smooth surfaces

In combination with the Wash-down design, the following features typically apply to smooth surface drives consisting of gear unit, motor and inverter:

- ▶ Protection class IP66 and optionally up to IP69K for treated electrical components
- ▶ Stainless steel screws for versions with surface and corrosion protection NXD tupH (flyer S3900)

The design is derived from applicable standards and guidelines used within the food industry:

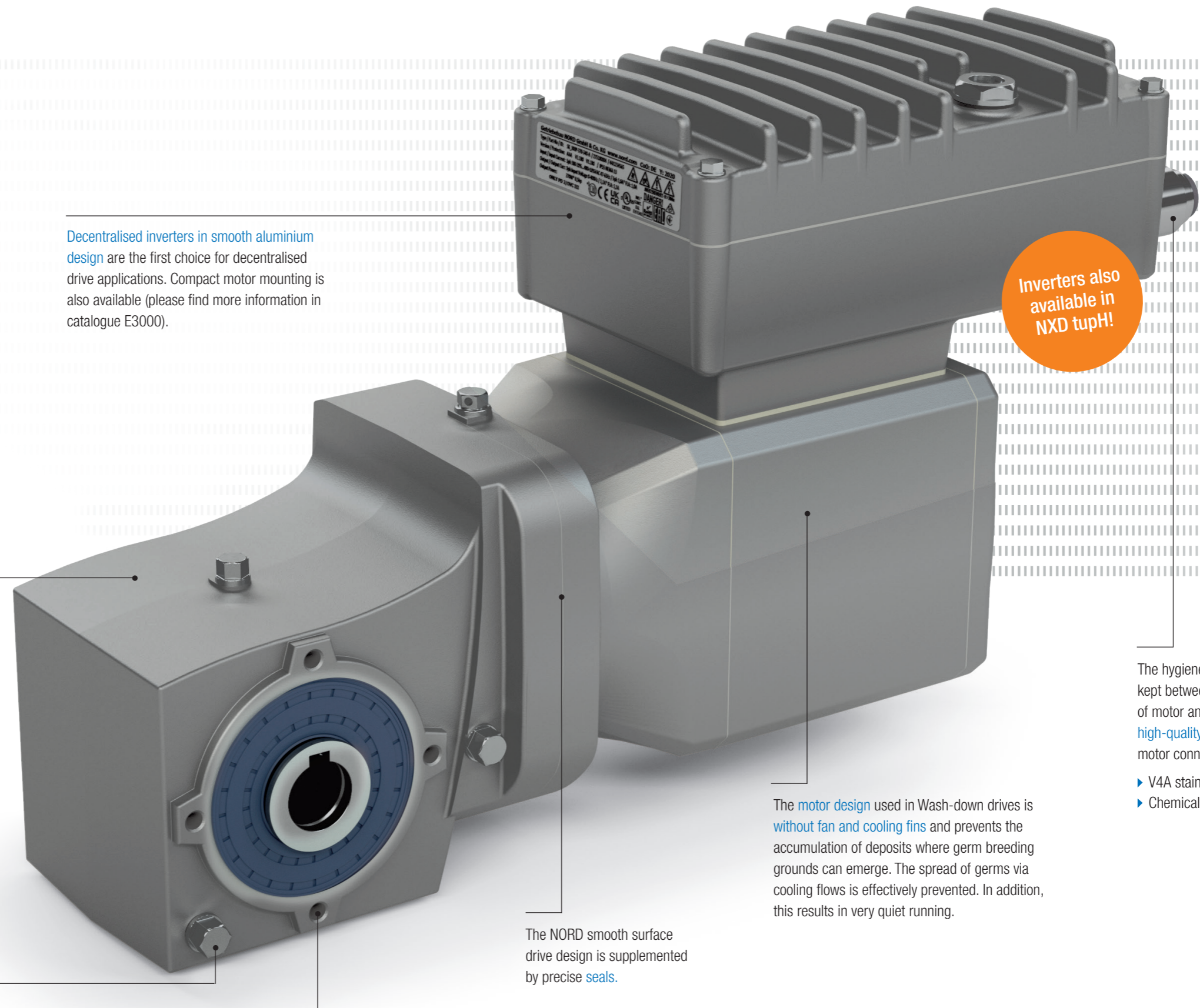
- ▶ DIN EN 1672-2:2005
- ▶ 3A 35-03
- ▶ EHEDG Doc. 8
- ▶ ANSI/BISSC/Z50.2-2003
- ▶ ANSI/NSF/3A – 14159-2-2000

Thanks to the [gear unit housing's Wash-down design](#), NORD smooth surface drives are optimally suited for use in hygiene areas.

For versions with NXD tupH [surface and corrosion protection](#) (flyer S3900), the hygienic housing design is extended with:

- ▶ Selected Wash-down-capable stainless steel screw fastenings
- ▶ Sealing plug for unused threaded holes

[Decentralised inverters in smooth aluminium design](#) are the first choice for decentralised drive applications. Compact motor mounting is also available (please find more information in catalogue E3000).



Inverters also available in NXD tupH!

The [motor design](#) used in Wash-down drives is [without fan and cooling fins](#) and prevents the accumulation of deposits where germ breeding grounds can emerge. The spread of germs via cooling flows is effectively prevented. In addition, this results in very quiet running.

The NORD smooth surface drive design is supplemented by precise [seals](#).

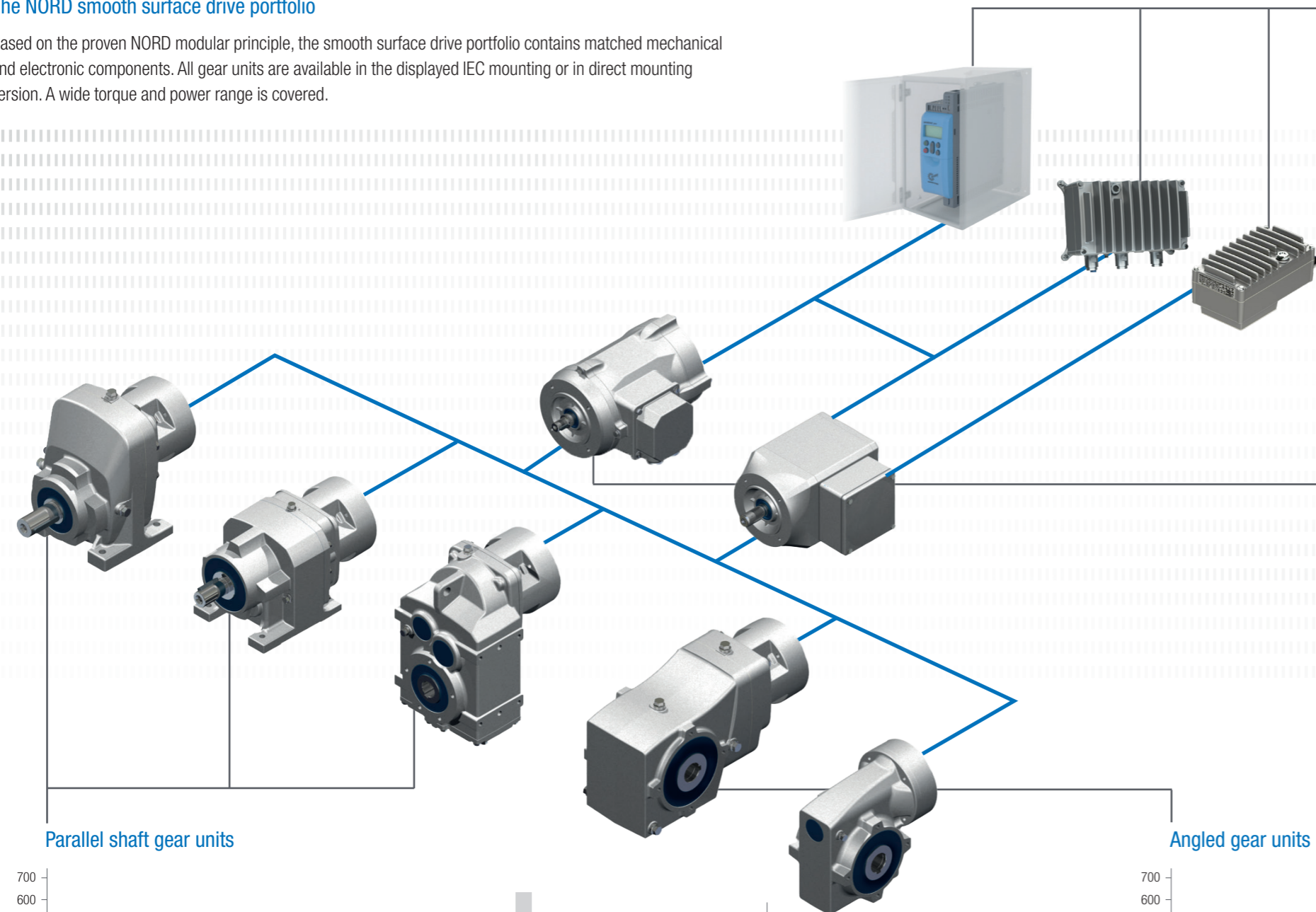
The hygiene-friendly design is also kept between system boundaries of motor and inverter. NORD offers [high-quality connections](#) to the motor connection consisting of:

- ▶ V4A stainless steel plug connector
- ▶ Chemically-resistant motor cables

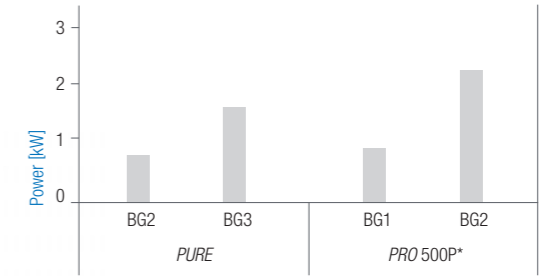
Smooth surface aluminium drives

The NORD smooth surface drive portfolio

Based on the proven NORD modular principle, the smooth surface drive portfolio contains matched mechanical and electronic components. All gear units are available in the displayed IEC mounting or in direct mounting version. A wide torque and power range is covered.

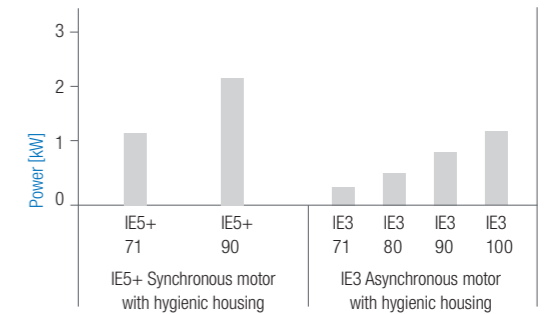


Inverters

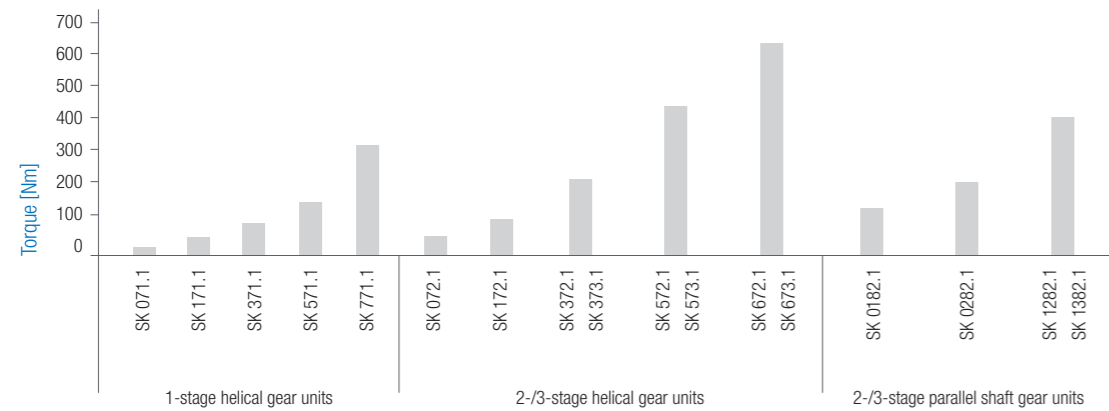


* NORDAC PRO inverters are an optimal complement for control cabinets (please find more information in flyer F3060 and catalogue E3000).

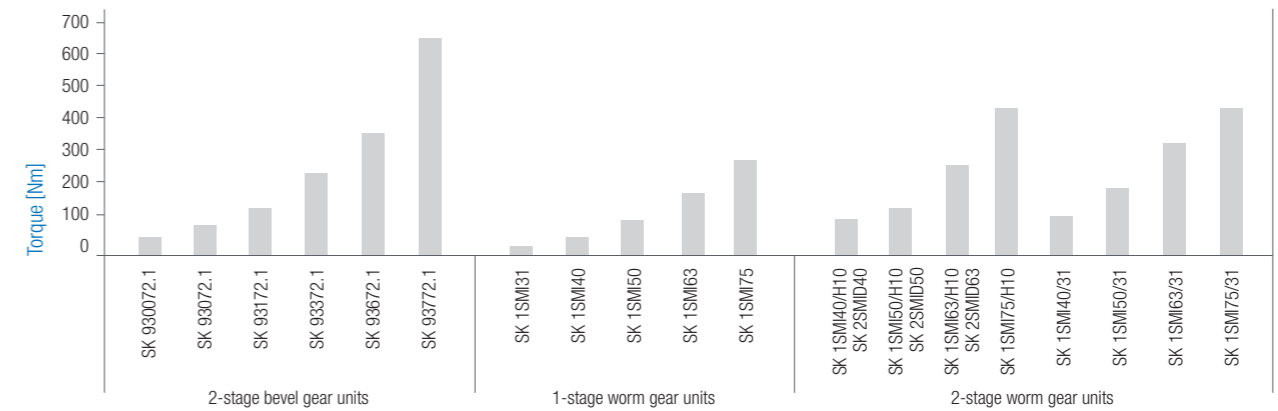
Motors

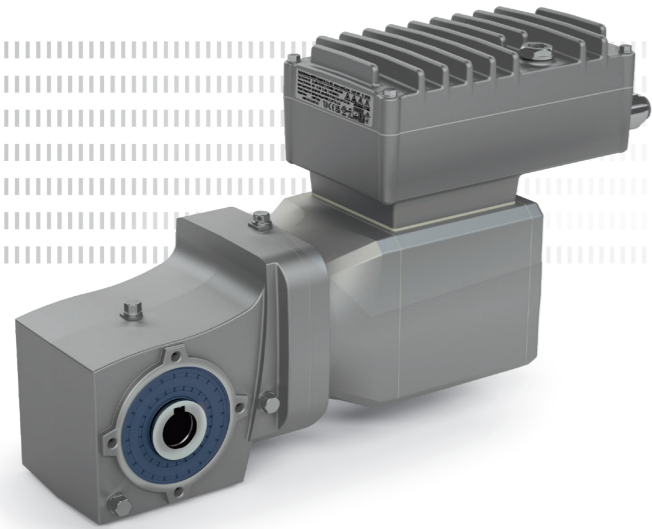


Parallel shaft gear units



Angled gear units





Complete drive solutions

Design:

- ▶ Wash-down housing (gear unit and motor)
- ▶ Surface-treated housing components
- ▶ DIN and standard components made from stainless steel
- ▶ Stainless steel output shafts
- ▶ Special radial shaft seals
- ▶ Food-compatible oil

NORDAC ON PURE decentralised frequency inverters (catalogue E3000)



- ▶ Stand-alone operation
- ▶ 4 parameter sets (can be switched online)
- ▶ Sensorless current vector control (ISD control)

Sizes: 2
Voltage: 3~ 380 – 500 V
Power: 0.37 – 1.5 kW

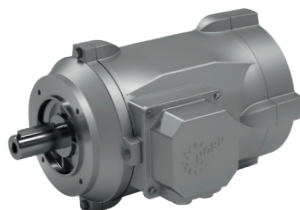
IE5+ Synchronous motor with hygienic housing (catalogue M5000)



- ▶ Size 71, 90
- ▶ IP66/IP69K (optional)
- ▶ Compact and hygienic design
- ▶ Highest operational efficiency **IE5+**

Power: 0.35 – 2.2 kW

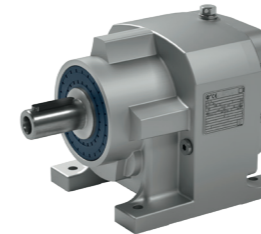
IE3 Asynchronous motor with hygienic housing (catalogue M7010)



- ▶ Sizes 71 – 100
- ▶ IP66/IP69K (optional)
- ▶ Aluminium alloy motor
- ▶ Efficiency class **IE3**

Power: 0.12 – 1.1 kW

NORDBLOC.1® Helical Inline Gear Unit (catalogue G1000)



- ▶ Foot or flange mounted version
- ▶ 1-, 2- or 3-stage version
- ▶ Aluminium alloy housing
- ▶ Industrial standard dimensions

Sizes: 10
Torque: 30 – 600 Nm
Ratio: 1 – 400:1

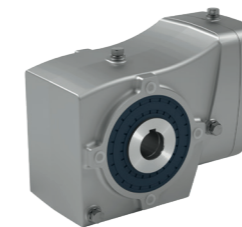
UNICASE Parallel Shaft Gear Unit (catalogue G1000)



- ▶ Smooth surfaces
- ▶ 2- or 3-stage design
- ▶ Aluminium alloy housing
- ▶ Hollow or solid shaft

Sizes: 3
Torque: 128 – 400 Nm
Ratio: 5 – 350:1

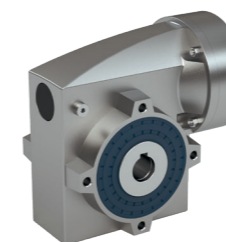
NORDBLOC.1® Helical Bevel Gear SK 93x72.1 (catalogue G1000)



- ▶ Foot or flange mounted version
- ▶ Hollow or solid shaft
- ▶ Aluminium alloy housing

Sizes: 6
Torque: 50 – 660 Nm
Ratio: 3 – 70:1

UNIVERSAL SMI Worm Gear Unit (catalogue G1000)



- ▶ Smooth surfaces
- ▶ Life-long lubrication
- ▶ Aluminium alloy housing

Sizes: 5
Torque: 21 – 400 Nm
Ratio: 5 – 3,000:1

Smooth surface aluminium drives

Gear unit options for optimum integration into the application (selection from catalogue G1000)

Numerous options exist for the NORD smooth surface gear units, which can be used to individually match the application. The integration of all smooth surface drives within a system can thus be flexibly realised.

- Cover cap**
 - ▶ Sealing of the open shaft end
 - ▶ Contact protection
- V4A fastening element**
 - ▶ Optimal complement with push-on version
 - ▶ For solid shaft ends according to DIN 332/2
 - ▶ Prevention of axial movements
 - ▶ Can be used with solid shafts with and without shaft collar
- Stainless steel output shaft**
 - ▶ Optimally suitable for high corrosion protection
- FKM/VITON radial shaft seals**
 - ▶ For highly stressed environments
 - ▶ For standard and special shafts
 - ▶ Higher thermal and chemical resistance
- Food-grade lubricants**
 - ▶ Complies with regulation H1 /FDA 178.3570
 - ▶ Different viscosity classes according to application requirement
 - ▶ High-temperature and low-temperature lubricants
- Torque support**
 - ▶ Compact and simple solution for gear units with push-on version
 - ▶ Shock absorption through integrated rubber bushes
 - ▶ Ideal for prevention of galvanic corrosion

Motor options (selection from catalogues M7000 and M7010)

NORD smooth surface motors can be extended by special Wash-down design options. All smooth surface motor options are also designed so that corrosion protection is maintained with protection class for the electrical components achieved up to IP69K.

- Encapsulated motor terminal box**
 - ▶ Resin filled terminal box base
 - ▶ Additional protection against water ingress into the motor space
- V4A motor plug connectors**
 - ▶ Plug-and-Play solution
 - ▶ Easy motor installation and replacement
 - ▶ Hygienic design
 - ▶ Straight and 90°-angle design available
- Integrated holding brake**
 - ▶ Optimal protected brake through sealed cover
 - ▶ Braking torques of 5 to 20 Nm
 - ▶ Brake control can be incorporated into the V4A motor plug connector
- Integrated motor encoder**
 - ▶ Incremental encoder available with a choice of pulse counts and interfaces
 - ▶ For IE3 motors under sealed cover
 - ▶ For IE5+ motors integrated in the housing

Brake and encoder can be combined!

EN

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