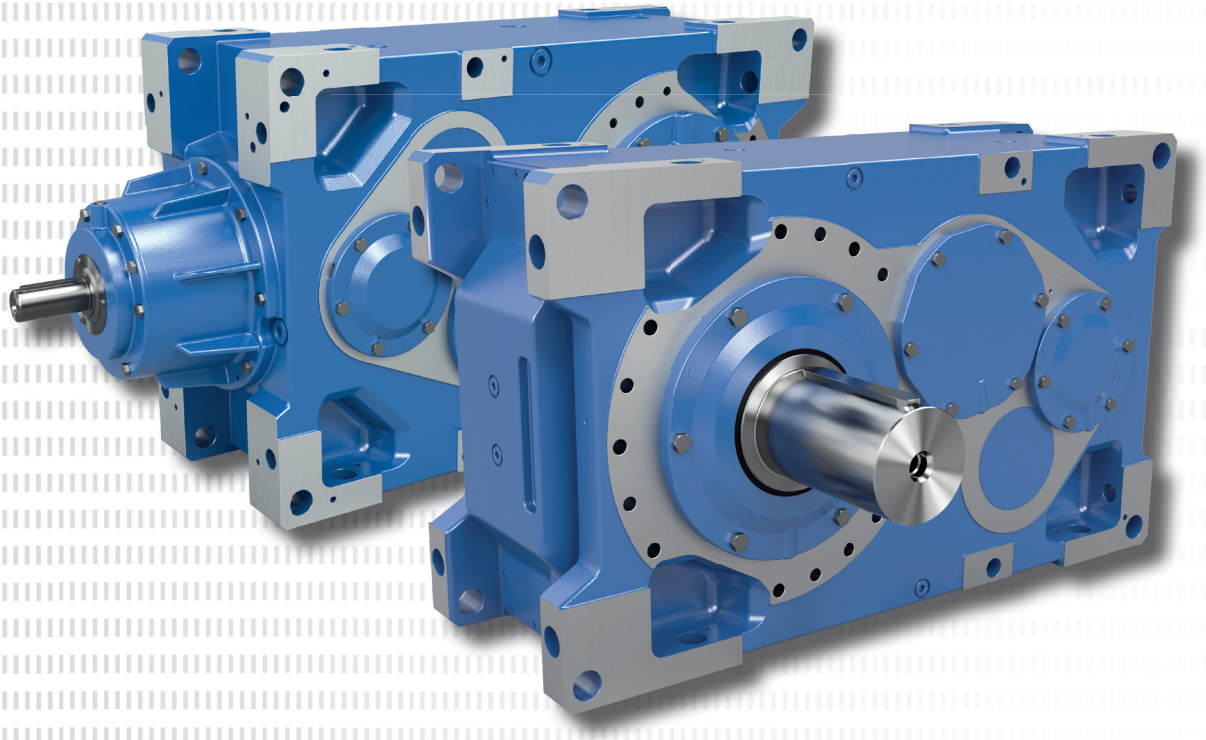


LARGE INDUSTRIAL GEAR UNITS

MAXXDRIVE® Parallel-Axis and Right-Angle

SK 5207 - SK 15507 Gear Units 50/60 Hz · mm

G1050

NORD® DRIVESYSTEMS

Spanning the globe
To serve you

Since 1965, NORD has become well established in the power transmission industry and grown to global proportions on the strength of productperformance, superior customer sevice and intelligent drive solutions. NORD is constantly improving and expandingits products to meet a never-ending variety of industrial challenges.

NORD designs and manufactures drive systems engineered for adaptability. NORD's innovative drive solutions are specified and utilized for a range of applications in nearly every industry throughout the world.

NORD Drivesystems' product portfolio is extensive and continuously evolving in order to meet the needs of today's fast-changing markets. NORD's range of drive equipment includes: helical in-line, helical shaft-mount, helical-bevel, helical-worm and worm gear units with torques from 90 lb-in to 2,200,000 lb-in, readily available AC motors and from 1/6 HP to 250 HP, variable frequency drives up to 250 HP, and mechanical variable speed drives.

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 with truly complete and efficient systems at a price/quality ratio unmatched in today's competitive markets.

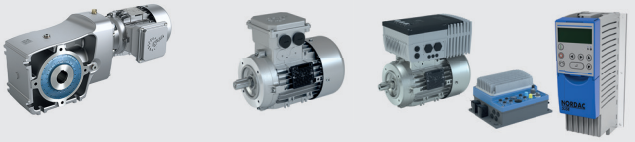
NORD makes its wide product range easily available through a global network that includes representation in over 52 countries. By providing all of our customers with prompt delivery, and expert support services, we are firmly committed to exceeding customer expectations and being responsive to the ideas and specifications of every customer, anywhere in the world.

NORD DRIVESYSTEMS Group

HEADQUARTERS AND TECHNOLOGY CENTRE

- in Bargteheide, close to Hamburg

Mechanical Products	Elektrical Products	Electronic Products
Gear units	Motors	Inverters, motors starters and field distribution systems



INNOVATIVE DRIVE SOLUTIONS

- for more than 100 branches of industrial

Gear unit production

Motor production

Inverter production

7 PRODUCTION LOCATIONS WITH CUTTING EDGE TECHNOLOGY

- produce gear units, motors and inverters also for complete drive solutions from a single source

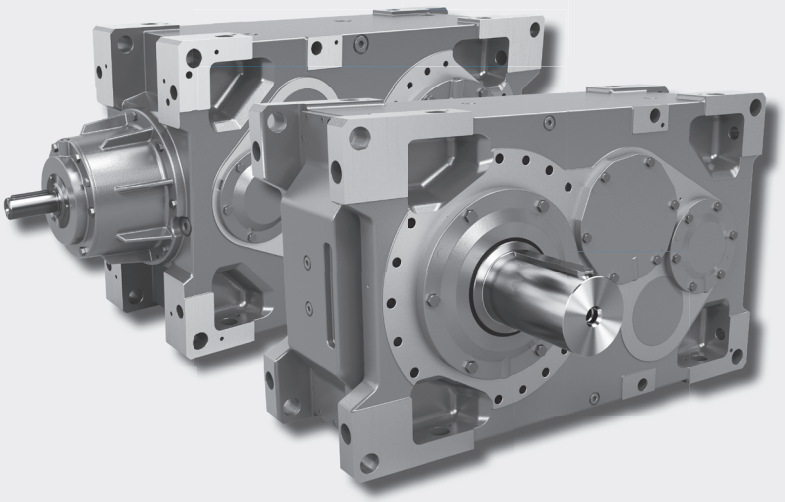
The above map image is for information purpose and may not have been prepared or be suitable for legal purpose and we do not own any responsibility for correctness or authenticity of the same.

SUBSIDIARIES AND SALES PARTNERS IN 89 COUNTRIES ON 5 CONTINENTS

- provide local stocks
- assembly centres
- echnical support and
- customer service

MORE THAN 3.600 EMPLOYEES THROUGHOUT THE WORLD

- create customised oriented solutions



NORD Parallel & Right-Angle Large Industrial Gear Units

The NORD large industrial gear units offer a unique combination of flexibility and durability for the most demanding high-torque applications. Available in both a parallel-shaft design and right-angle design with a spiral-bevel input. Very high ratios are possible in the form of a compound unit by combining these units with NORD's Clincher™ or Helical-Bevel series.

Gearing and shafting are designed in accordance to international standards and the case carburized and hard finished gears are manufactured to the highest quality. Only industry recognized anti-friction roller bearings are used to provide exceptional bearing life. These units also offer flexible design alternatives by providing a full complement of input, mounting, output shaft, output shaft sealing, and thermal control options.

Optimized geometries and precise shaft alignment provide excellent load-bearing capacity, long operating life, insignificant operating noise as well as lubrication system integrity.

Features and Benefits

- Optimum sealing
- Quiet running
- High torque capacity
- Increased lubricant life
- High reliability
- Maximized operating life of bearings and gears
- Symmetrical design
- Flexible mounting
- Long operating life
- Mirror-image installation possible
- Fast configuration
- Standard B14 flange on output
- Same housing size & dimensions for 2 or 3-stage units
- Short delivery times

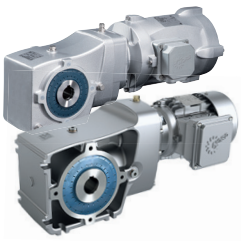
Products and Catalogues Overview

Helical gear unit (Catalogue G1000)

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

Sizes	11
kW	0.12 – 160
Nm	10 – 26,000
i	1.35:1 – 14,340.31:1

2-stage bevel gear units (Catalogue G1000, G1014)



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

Sizes	6
kW	0.12 – 9.2
Nm	50 – 660
i	3.03:1 – 70:1

Parallel shaft gear units (Catalogue G1000)

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

Sizes	15
kW	0.12 – 200
Nm	110 – 100,000
i	4.03:1 – 6,616.79:1

3-stage bevel gear units (Catalogue G1000)

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

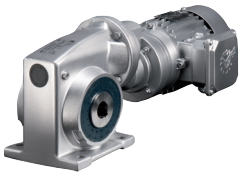
Sizes	11
kW	0.12 – 200
Nm	180 – 50,000
i	8.04:1 – 13,432.68:1

Helical worm gear units (Catalogue G1000)

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

Sizes	6
kW	0.12 – 15
Nm	94 – 3,090
i	4.40:1 – 7,095.12:1

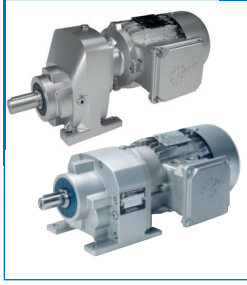
SMI worm gear units (Catalogue G1035)



- Smooth surfaces
- Lubricated for life

Sizes	4
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 3,000.00:1

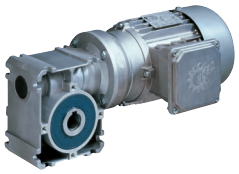
NORDBLOC.1 helical gear units (Catalogue G1000, G1012)



- Foot or flange mounted
- Die-cast aluminium housing
- UNICASE housing
- Industry standard dimensions

Sizes	13
kW	0.12 – 37
Nm	30 – 3,300
i	1.07:1 – 456.77:1

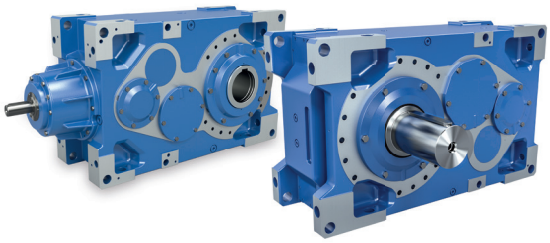
SI worm gear units (Catalogue G1035)



- Modular
- Universal mounting
- Lubricated for life

Sizes	5
kW	0.12 – 4.0
Nm	21 – 427
i	5.00:1 – 3,000.00:1

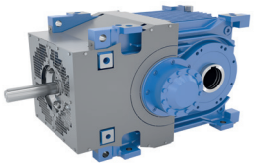
MAXXDRIVE® Industrial gear units (Catalogue G1050)



- All bearing points and sealing surfaces are machinedin a single operation
- No separating joints in the housing, no sealing surfaces subject to torque
- High-precision axis alignment, quiet running
- Long life, low-maintenance
- Gear ratio range 5.54 to 400:1 with the same foot dimensions
- Parallel axis and right-angled gear units

Sizes	11
kW	1.5 – 4,000
kNm	15/20/25/30/40/50/75/110/150/190/280
i	5.54:1 – 30,000.00:1

MAXXDRIVE® XT Industrial gear units (TI60-0011)

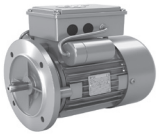


Sizes	7
kW	1.5 – 1,500
kNm	15/20/25/30/40/50/75
i	6.14:1 – 22.91:1

Motors (Catalogue M7000, TI60-0001)

Energy-saving

Switchable Pole



Single-Phase

Smooth Surface

ATEX

Explosion Protection Gas-Environment

ATEX

Explosion Protection Dust-Environment

IE3 IE2 IE4

Special features

- Motors developed and produced by NORD
- We produce energy-efficient products for all parts of the world
- Products available at all international locations

Control cabinet inverter (Catalogue E3000)

NORDAC PRO SK 500E

The inverter for all drive applications
- Proven technolog
- large power range
- capable of functional expansion with:
  - plug-in option modules
  - optimised heat dissipation thanks to the variable cooling concept.

NORDAC PRO SK 500P

The next generation of control cabinet inverters
- Compact size
- innovative and extremely flexible communication and interface concept
- functional expansion with:
  - optional modules.

Decentralised frequency inverter

NORDAC FLEX SK 200E

Decentralised drive unit with versatile installation options
- Simple commissioning and maintenance through:
  - extensive plug-in capability
  - simple parameter transfer via EEPROM.

NORDAC BASE SK 180E

Economical decentralised version for simple drive applications
- Low installation effort
- robust design for simple installation outside the control cabinet.

Motorstarter

SK 155E-FDS

Frequency inverter

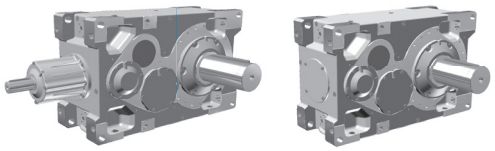
NORDAC LINK SK 250E-FDS

The field distributor for flexible, decentralised installation.
- Flexibility of equipment and function
  - free configurability according to requirements and the application
- Available as inverter and starter
- Fast commissioning through
  - high level of plug-in capability
- Simple servicing of the system through
  - integrated maintenance switch
  - local manual control facility.

Motorstarter

NORDAC START SK 135E

The decentralised starter for all types of soft starting
- with integrated motor protection and reversing function for flexible integration into the system.



MAXXDRIVE® Housings

NORD DRIVESYSTEMS large industrial gear units have been developed according to the well-proven UNICASE® housing design in which all bearings and seals are contained within a single casting. The UNICASE® concept was pioneered by NORD DRIVESYSTEMS Gear in 1980 and features the highest levels of precision, rigidity and strength by eliminating splits and bolt on carriers. There are no separations in the housing which are subjected to torques or radial loads.

The UNICASE® principle enables a more compact design that includes larger roller bearings, which guarantee a prolonged operating life. Ease of service to the gear unit is ensured by a large assembly cover over the face plate of the gear unit.

Our UNICASE® housings are made of cast iron. Ductile iron may be supplied upon request.

Optimized geometries and precise shaft alignment are a result of the UNICASE® style housing and provide excellent load-bearing capacity, long operating life, insignificant noise levels as well as provide the highest level of system lubrication integrity.

Advantages of UNICASE® Housings

- ☑ Optimum sealing
- ☑ Quiet running
- ☑ High torque capacity
- ☑ Increased operating life of bearings & gears
- ☑ High reliability
- ☑ Prolonged operating life
- ☑ Increased lubricant life
- ☑ Symmetrical design
- ☑ A B14 face flange on the output side
- ☑ Mounting pads on all 6 sides
- ☑ Mirror-image installation possible
- ☑ Same housing size, installation dimensions for all ratios (2 & 3 stage)

FEM (Finite Element Modeling) Analysis

The MAXXDRIVE® design process included using state-of-the-art Finite Element Modeling as a key design tool. This allowed optimal structural design to maximize the strength & rigidity of the gearbox and it's components.

Gear, Bearing and Shaft Standards

All of the gears in the NORD MAXDRIVE® product line are keyed to provide a positive connection. These gears are additionally mounted with a press-fit between the shaft and gear hub.

The gears included in our MAXXDRIVE® line are made of high caliber alloy steels and are case hardened. The nominal torque ratings and speeds (calculated according to ISO 6336) are available in the ratings sections of this catalog.

All NORD DRIVESYSTEMS gear units provide the very highest level of quality, safety and reliability. The gearing, bearing and shaft capacities are calculated according to international standards.

The gears and bearings are designed to be partially submerged in oil during operation. Pressure circulation lubrication is available as an option in the form of a motor or a shaft driven pump. In addition to this option there are many other alternative oil circulation and cooling methods available for the MAXXDRIVE® product line.

Temperature Management

Please refer to the options section on page ⇨🕮 57 for more information on the following available cooling system options:

Available Temperature Management Options

- ☑ Fan, 3 options
- ☑ External oil/air cooler
- ☑ External oil/water cooler
- ☑ Internal cooling coils (water)
- ☑ Heating cartridges

Lubrication Overview

Proper gearbox lubrication is essential in order to reduce friction, heat, and component wear. Lubricants reduce heat and wear by inserting a protective “fluid boundary” between mating parts and preventing direct metal to metal contact. Lubricants also help prevent corrosion and oxidation, minimize foam, improve heat transfer, optimize reducer efficiency, absorb shock loads and reduce noise.

MAXXDRIVE® gear units that are mounted in a standard horizontal position are intended to be oil splash lubricated. MAXXDRIVE® gear units mounted in a vertical or standing position utilize bath or immersion lubrication to ensure oil is delivered to the critical bearing and gear mesh areas. Forced lubrication or pressure lubrication is also an option.

In all cases, the option DRY requires pressure circulation lubrication for gear unit sizes SK 11.07 - SK 15.07 for lubrication of the upper bearings. In the small sizes SK 5.07 and SK 10.07 these bearings are lubricated with grease, which enables economical injection lubrication even in the M5 position with the DRY option.

The MAXXDRIVE® gear units are designed to be able to operate with high performance mineral oil containing an extreme pressure (EP) additive. A viscosity grade ISO VG220 EP (AGMA 5 EP) mineral oil is typical for ambient temperature conditions between 0°C-40°C (32°F-104°F).

While the MAXXDRIVE® gear units are designed to be able to operate with high performance mineral oil, NORD DRIVESYSTEMS strongly recommends the use of synthetic oil. Compared to mineral oil, synthetic oil offers the following advantages that provided added wear protection and extend reducer component life:

- Higher film strength, lower traction coefficient and improved lubricity.
- Reduced internal friction (by as much as ½ compared to mineral oil) resulting in lower operating temperatures and improved gear efficiency.
- Superior wear and thermo-oxidative resistance, provides enhanced system cleanliness and enables longer service intervals.
- Higher viscosity index offers improved low temperature and high temperature stability.

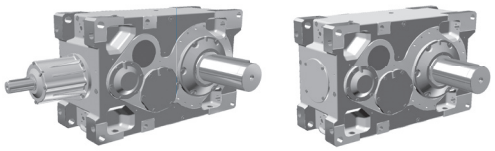
Additional lubrication guidlines can be found on page ⇨🕮 44 of this catalog as well as in the MAXXDRIVE® maintenance instructions (www.NORD.com).

Durable and Flexible

The MAXXDRIVE® large industrial speed reducers offer a unique combination of flexibility and durability. The drives are extremely versatile in terms of mounting configurations. They employ a “universal” housing design with mounting surfaces on all six sides. The same housing is used for both our off-set parallel and right-angle drives.

Explosion protection according to ATEX

NORD DRIVESYSTEMS gear units in modified design and certified according to equipment directive 214/34/EU are available on request for the categories 2 + 3.



Sealing systems

The standard shaft seals that are provided are nitrile rubber NBR (Buna-N), and optionally FKM (Fluroelastomers). For specific ambient conditions, sealing systems incorporating gamma-ring, labyrinth and Taconite seals are also available. In case other specialized sealing requirements are needed please contact NORD DRIVESYSTEMS Gear.

Available sealing options

- ☑ Single input seal NBR/FKM
- ☑ Double output seal NBR/FKM
- ☑ Gamma ring seal, dust protection
- ☑ Taconite seal (re-greasable labyrinth seal)
- ☑ Cartridge Seal
- ☑ Special sealing options by request

Design Advantages

There are countless advantages for using NORD MAXXDRIVE™ gear units for your large industrial gearbox needs. Here is an overview of some of the significant advantages that this product has to offer.

- ☑ Heavy duty design
- ☑ Competitive features/construction
- ☑ High power density
- ☑ Modular & Flexible Design
- ☑ Increased bearing life compared to split case housings (due to larger bearings)
- ☑ Quiet running - optimized bevel gears
- ☑ Large motor combinations possible
- ☑ One piece housing, which provides higher stiffness than split-case design
- ☑ Efficient fan cooling (optimized air flow over gearcase surfaces)
- ☑ Increased accessory life due to the use of synthetic lubricants
- ☑ Gears - case hardened and ground
- ☑ Antifriction - high quality bearings

Sound Pressure Levels

The surface sound pressure levels according to ISO 8579-1 of MAXXDRIVE gearboxes are below the 50% - line given in the standard.

EN

Headquarters:
Getriebebau NORD GmbH & Co. KG
Getriebebau-Nord-Str. 1
22941 Bargteheide, Deutschland
T: +49 45 32 / 289 0
F: +49 45 32 / 289 22 53
info@nord.com