

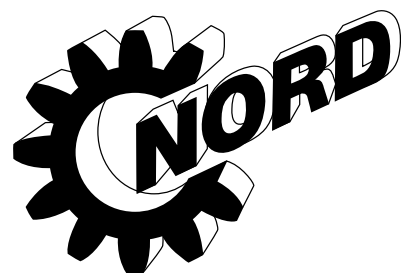
INTELLIGENT DRIVESYSTEMS, WORLDWIDE SERVICES



# NORD GEARED MOTORS

F 1000 GB

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



**Getriebbau NORD**  
DRIVESYSTEMS

# Unicase Housing: The Optimal Design

Getriebebau NORD has been building helical inline, helical parallel shaft, bevel and worm gear units with Unicase housing design since 1980. The Unicase housing from Getriebebau NORD is a single housing block in which all bearing points are integrated. In this way, no sealing faces are subjected to torque or lateral forces caused by flanges or bearing points that are screwed on. All axes and sealing faces of the gear block are machined in a single setup on the most modern CNC-controlled production lines, which translates to the highest degree of manufacturing accuracy.



NORD Unicase housing 3-stage helical gear unit

The wheel bodies are produced from forging blanks, the gearing is hardened, precision finished, rated for endurance strength, and conforms to calculations according to DIN 3990, Niemann and AGMA.

The key advantages for the user of NORD Unicase housing gear units are:

- The greatest operational safety
- The highest output torque
- High axial and radial load capacity
- Low noise operation
- Low-maintenance
- Long service life

NORD drives in a package distribution system



NORD drives in gantry cranes and crane systems

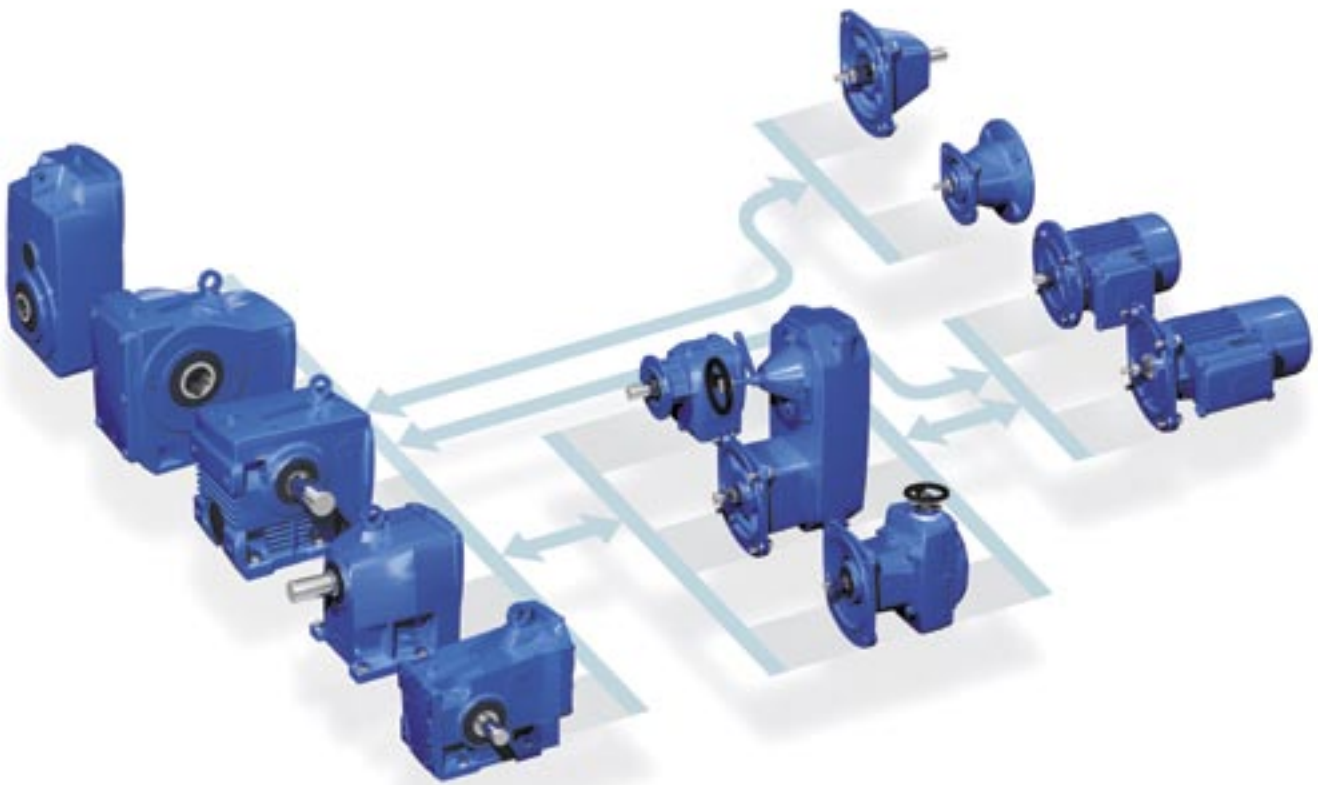


# The Modular System

The optimised NORD modular system allows for the creation of application-specific gear combinations. In addition to normal single speed AC motors, pole-changing motors can also be attached. Brake motors, motors with explosion and flameproof designs, single-phase motors and DC motors as well as mechanical variable speed units can be combined as required for the application.

Adaptors for IEC standard motors, drive bearing housings with free drive shafts and helical gear stages for extremely low speeds are additional gear modules.

Comprehensive stock and the underlying storage logistics enable the fastest delivery of individual drive solutions from the company headquarters and its subsidiaries worldwide.





## Helical Inline Gear Units

Helical inline gear units are available in three basic designs as one-, two-, and two/three-stage gear units. Helical inline gear units are available across the entire speed and power range in both foot and flange mounted designs. Foot and flange mounted units are likewise available in 4 to 6 stage designs, which can be combined with all components of the NORD modular system.

## Helical Parallel Shaft Gear Units

NORD parallel shaft helical gear units are available as two or two/three-stage basic types with hollow or solid shafts in foot, flange or shaft mounted designs. The NORD Unicase housing concept allows for the design of parallel shaft helical gear units of the highest performance with very compact dimensions. NORD parallel shaft helical gear drives can be combined with all components of the NORD modular system.

16 sizes  
10 to 23,000 Nm  
0.12 to 160 kW  
1.35:1 to 14,340.31:1



14 sizes  
110 to 100,000 Nm  
0.12 to 200 kW  
3.03:1 to 6,616.79:1



## Helical-Bevel Gear Units

Compact NORD Unicase housing helical-bevel gears fit seamlessly into the NORD modular system. A variety of designs are available to the user for almost any application: Drives in foot and flange mounted designs with single- or double-sided solid or hollow shafts, with backstop, with free drive shafts or with adapters for attaching IEC standard motors.

## High Efficiency Two-stage Helical Bevel Gear Units

This new generation NORD helical-bevel series has a two-stage design in which the first stage is designed as a helical set and the second as a bevel set. You can place the bevel gear to the left or right of the bevel pinion, allowing the direction of rotation to reverse between the drive shaft and output shaft without taking additional measures.

A key advantage of this NORD gear unit series is almost constant efficiency over the entire gear ratio range that equals that of a helical gear unit.

10 sizes  
400 to 32,000 Nm  
0.12 to 160 kW  
8.04:1 to 4,916.63:1

5 sizes  
90 to 670 Nm  
0.12 to 9.20 kW  
3.87:1 to 72.31:1



## Worm Gear Units

Compact design, short overall length, high load capacity due to favourable sliding speed, high efficiency of up to 95% using multi-start worms with greater pitch. The worm wheel has a geared ring made of a special centrifugally cast bronze. The worm is casehardened and the tooth flanks are precision finished, which guarantees a long service life when running in the synthetic oil bath.

These compact, powerful worm gear units can be combined with all components of the NORD modular system.

## MINIBLOC WORM GEAR UNITS SM

These NORD worm gear units are available single stage and with the preceding helical gear stage in foot and flange mounted designs. Both designs are available with solid, hollow or double-sided output shafts. The single-piece aluminium housing is smooth and therefore easy to clean – a clear advantage for use in the food industry. The gears are filled with synthetic lubricant and lubricated for life. MINIBLOC worm gear units SM can be operated in all mounting positions.

6 sizes  
94 to 2,750 Nm  
0.12 to 15 kW  
4.40:1 to 7,095.12:1

4 sizes  
30 to 160 Nm  
0.12 to 1.5 kW  
13:1 to 540.12:1



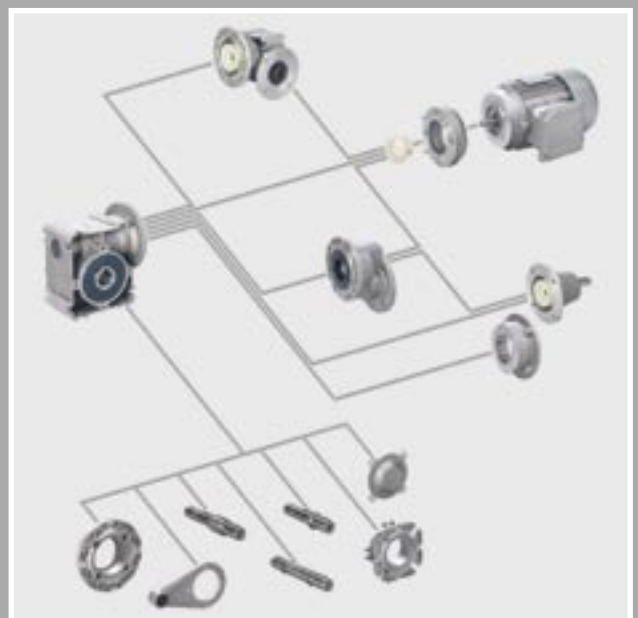
## UNIVERSAL WORM GEAR UNIT SI

The UNIVERSAL Worm Gear Unit SI represents a homogeneous gear module. The single-piece aluminium die cast housing has no cover or sealing joints. The rigid housing block ensures the highest degree of operational safety even with the highest load capacity. This variable worm gear range features a modular design. The IEC/NEMA motor mountings in connection with the helical pre-stage form completely mounted gear modules that can be easily assembled.

A variety of individual gear designs can be combined from few modules. The UNIVERSAL Worm Gear Unit SI features as standard foot mounting on three sides, B14 flanges on two sides and an output hollow shaft. Modules that enable various applications of the gear series are plug-in solid shafts, output-side bolt-on type flanges, torque arms or helical gear pre-stages.

5 sizes  
30 to 260 Nm  
0.12 to 4.0 kW  
5:1 to 3,000:1

Possible combinations of the modular system



## Helical Gear Unit STANDARD Housing

The STANDARD housing is a construction that completely covers the basic performance requirements of gear units and gear motors. Series production allows us to consistently maintain the favourable price to power ratio. Professionalism and high-service capacity ensure you the shortest possible delivery times and comprehensive service.



## NORDBLOC

The new optimised version of the NORDBLOC compact gear motor is available in two- and three-stage designs as foot and flange mounted gear units and gear motors. It is a compact gear unit that offers the user an even higher power density with smaller sizes. Larger gear ratios and higher output torques were realized by integrating the third gear stage without enlarging the design.

6 sizes  
50 to 700 Nm  
0.12 to 7.5 kW  
1.92:1 to 488.07:1



10 sizes  
50 to 3200 Nm  
0.12 to 37 kW  
25:1 to 400:1





## Motors

NORD is independent from suppliers due to its own motor production and guarantees:

- Flexibility
- Short delivery times with a large variety of designs available

Operation costs can be reduced by up to 40% with energy saving drives from Getriebebau NORD. A good two thirds of energy requirements in the industry are due to the operation of electrical drive technology. NORD drives have been reducing this consumption with motors, gears and intelligent electronics that optimise the efficiency of the entire drive line. Higher energy efficiency leads to higher material expenses like more copper in the windings of an AC motor. However, these extra costs pay off quickly.

Energy consumption is approximately 98% of the entire operating costs in the life cycle of almost all electric motors. In particular with fans, pumps or conveying equipment whose drives are almost continuously in operation, the saved energy offsets the higher initial investment costs within months. Energy efficient NORD motors Eff1 comply with the European CEMEP, Standard and the North American standards EPAAct, NRCan and NEMA MG-1.



## Mechanical Speed Regulation

NORD offers the option of mechanical speed variation by variable-speed belt gear units up to 110 kW and variable-speed friction disc gear units up to 4 kW.

Mechanical variable-speed gear units are extremely robust and operate reliably - even under continual load. These robust components are essential for many applications despite continuously advancing electronic speed regulation.

## NORDAC SK 300E

The NORDAC trio SK 300E is a frequency inverter directly mounted to the motor with complete control and parameter setting functionalities. The high degree of inverter protection, IP55, and the optional IP66 make for a robust drive package for decentralised applications. The motor-inverter concept features many device and system advantages, such as a separate connection unit with generous connection space for power cables and control lines (due to the two-part housing design), optimal heat transmission without additional cooling measures and an electronic name plate in the motor. Start up is simple and user-friendly due to motor data previously saved in the motor and inverter. Technology components allow the NORDAC SK 300E to be expanded with bus interfaces for connecting to all available automation systems or for local operation.

Block housing worm gear units with variable-speed friction wheel gear unit  
Block housing helical gear unit with variable-speed belt gear unit



NORDAC SK 300E  
Gear + motor + frequency inverter  
as a compact unit



# Motor Starter Soft Starter Reversing Starter

## NORDAC SK 140E / SK 150E / SK 160E

This is the complete drive unit with integrated switch and protection functions. The product series NORDAC DA decentralised drive technology includes components for flexibly solving decentralised drive applications. Intelligent components for controlling and regulating the motors are modularly expanded by variable connection options, I/O components and bus interface modules.

**SK 140E:** On/off using the integrated electronic power switch.

**SK 150E:** Soft start using the integrated electronic phase control.

**SK 160E:** On/off/reverse using the integrated electronic power switch.

Due to high standardisation, even complex decentralised applications are significantly simplified in your planning and implementation. NORDAC DA components can be implemented integrated into the motor or close by as well as paired with NORDAC DA field modules. Control and confirmation are performed by 24 V DC control signals or bus systems.

NORDAC SK 160E







**Getriebebau NORD: The complete product spectrum of mechanical and electronic drive technology all from one source**

Getriebebau NORD offers solutions for almost every kind of drive application with a full range of mechanical and electronic systems; regardless of whether you are in the industry or behind the scenes in the new opera house in Beijing. We have a particularly wide product range of gears that includes helical, parallel shaft helical, bevel and worm gear units in a torque range of 10 Nm to 100,000 Nm. NORD motors cover a power range from 0.12 kW to 200 kW, from simple IEC standard motors to high dynamic synchronisation servo motors. With frequency inverters and digital servo regulators, the company also produces the suitable power electronics.



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**DRIVESYSTEMS**

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<b>NORD PAC</b> Catalogues – Products – Application – Software	<b>NORD CON</b> Parameterisation of frequency converters
<b>NORD CAD</b> 3D Models – Dimensional drawings – Outline drawings	<b>NORD SERV</b> Parameterisation of the NORDAC servo-controller
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