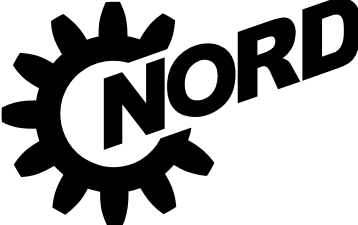


Intelligent Drivesystems, Worldwide Services



GB

**Drive solutions for  
sewage plants**

  
**DRIVESYSTEMS**



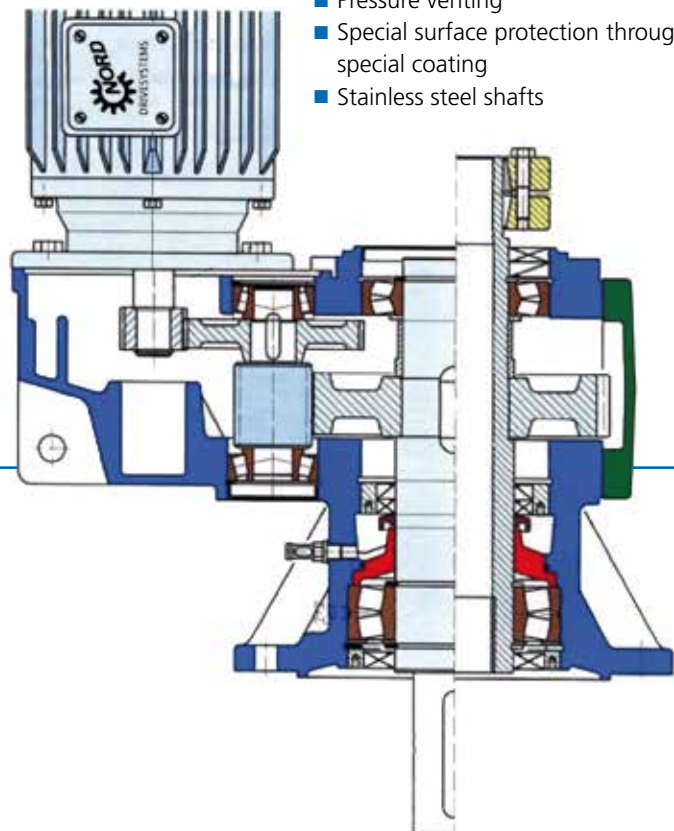
# Partners in Motion

## Efficient and well protected

For more than 45 years, NORD DRIVESYSTEMS has been at home in almost every branch of industry, where conveyor solutions are used for internal transport logistics. Our drive components and systems are essential wherever things need to be moved, as every movement needs a drive- as efficiently and safely as possible. Because of this, we provide the entire spectrum of mechanical, electrical and electronic drive technology from a single source, from motors and gear units to central and decentralised control technology.

Especially for waste water treatment and outdoor applications, drive units are often subjected to extreme environmental conditions such as moisture, dust, dirt or chemicals. Even in their standard versions, NORD gear units provide a high level of protection against such influences. In order to cater for extreme requirements, NORD DRIVESYSTEMS takes appropriate measures to protect the high quality technology and ensure the reliability and functionality of the drive system.

- Protection class IP55, optional IP66
- Double fan cover
- Stainless type plate
- Stainless fixing screws
- Condensation drain holes
- Standstill heating
- Moisture protection insulation
- Pressure venting
- Special surface protection through special coating
- Stainless steel shafts







#### NORD DRIVESYSTEMS:

- Highest standards of technology and quality
- Comprehensive advice on systems and products
- High availability and fast service throughout the world

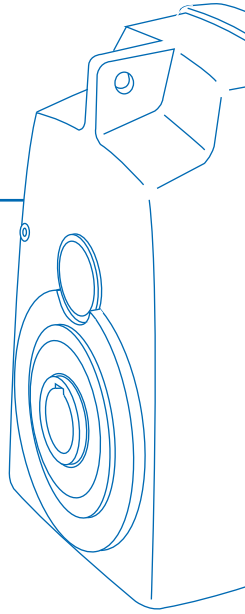
Links above:  
Sewage treatment plant  
in Peking  
Top right:  
Main water works in  
Tunis  
Bottom left:  
Sewage treatment plant  
in Tunis  
Bottom right:  
Sewage treatment plant  
in Bargteheide



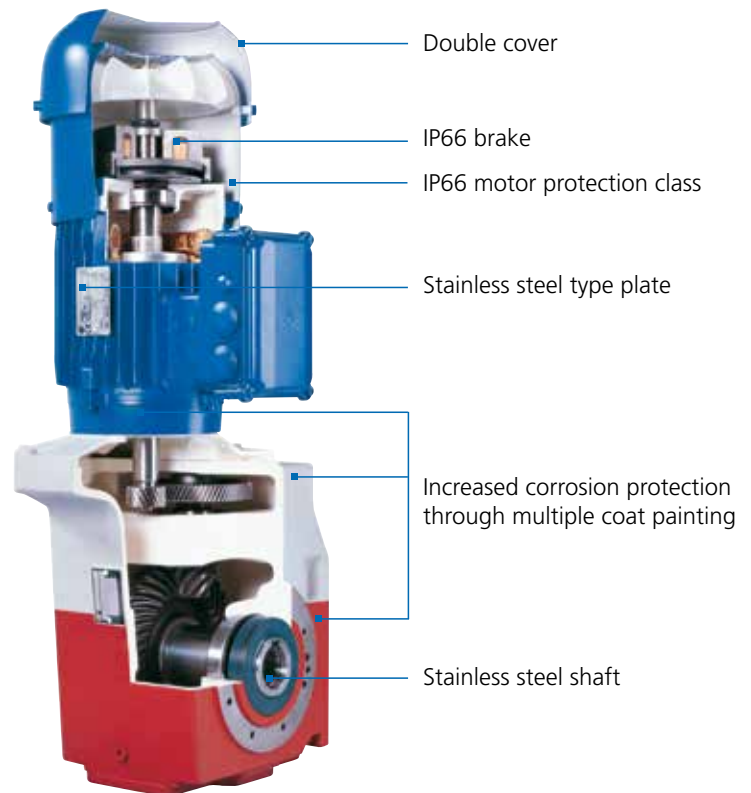
# Efficient water and sewage treatment

## Free of faults and economical

At present there is an increase in the quality and quantity of waste water treatment in Europe. The main impulse for the market is provided by politics and financial aid from the European Union, primarily their directives for municipal sewage and the outline water directive. In the field of water treatment, the drive technology is decisive for the availability and efficiency of pumping and fan stations. Completely fault-free operation is just as essential as high efficiency. For drive units which operate continuously, energy costs are a very important factor. In addition to the operation of aeration systems, it is mainly the pumps which are the significant factors for electricity consumption in sewage treatment plants. Because of this, NORD DRIVESYSTEMS has used especially efficient drive solutions since 1995. Through the optimum combination of energy-efficient motor technology and almost loss-free gear units and frequency inverters with energy-saving functions, we ensure economy for purchase and operation.



**ONAS (National waste water treatment authority), Tunis**  
Gear units of type SK 12382VZGVVL IEC315-315M/4 TFRD are in operation in the main waterworks in Tunis.



## Surface and corrosion protection

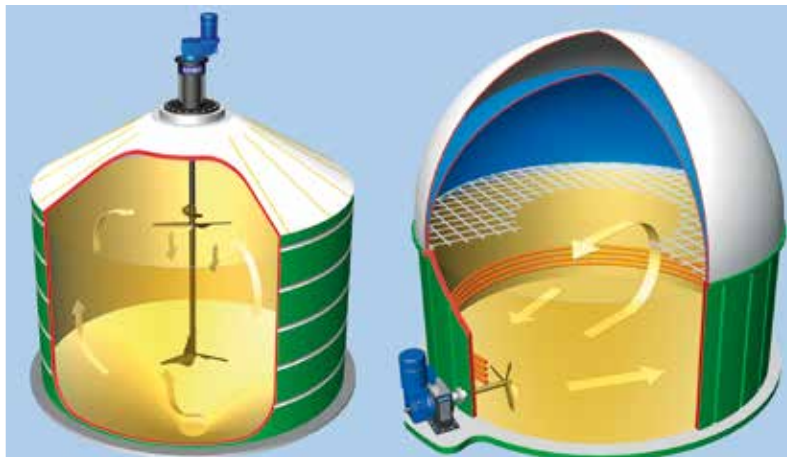
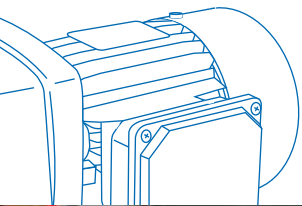
Drivesystems for extreme conditions – NORD DRIVESYSTEMS now has an answer for these requirements: **nsd** Sealed Surface Conversion System. Combined advantages of a stainless steel drive unit with those of a light metal gear unit.

- Cost effective alternative to stainless steel
- Resistant to corrosion and chemicals
- Easy to clean surfaces
- No white rust



DRIVESYSTEMS





#### AGIMIX International, Sweden

Modern biogas reactors require great flexibility to maintain perfect functioning of the functions for mixing and agitating the various organic materials. This requires well-designed agitators with minimum energy consumption and great reliability. AGIMIX relies on drive solutions from NORD DRIVESYSTEMS.

#### SPIRAC AB, Sweden

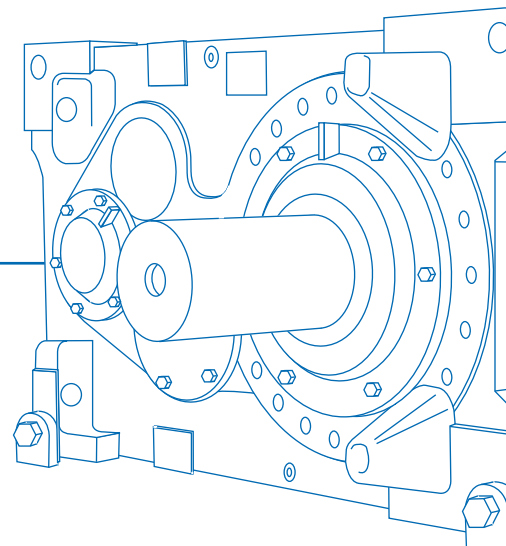
develops tailor-made solutions for the water and pulp and paper industries, using NORD drive systems.

#### Danish Wastewater Equipment

is a company which specialises in plant for treating industrial sewage and waste water. It relies on the very highest quality with regard to the technology, functionality and service life of products and components which it uses.



# Efficient drive units in UNICASE design



## Parallel shaft gear units

<ul style="list-style-type: none"> <li>✓ Face-mounted, foot or flange mounted versions</li> <li>✓ Hollow or solid shaft</li> <li>✓ Short design</li> <li>✓ UNICASE</li> </ul>	Sizes	15
	kW	0,12 – 200
	Nm	65 – 90.000
	i	4,03 : 1 – 6.616,79 : 1



## 3-stage bevel gear drive units

<ul style="list-style-type: none"> <li>✓ Up to 95 % efficiency</li> <li>✓ Face-mounted, foot or flange mounted versions</li> <li>✓ Hollow or solid shaft</li> <li>✓ UNICASE</li> </ul>	Sizes	11
	kW	0,12 – 200
	Nm	180 – 50.000
	i	8,04 : 1 - 13.432,68 : 1



## Industrial gear units

<ul style="list-style-type: none"> <li>✓ Parallel shaft and bevel gear versions</li> <li>✓ UNICASE design</li> <li>✓ Temperature management</li> <li>✓ Various sensors</li> <li>✓ Various sealing systems</li> </ul>	Sizes	8
	kW	2,2 – 1.000
	kNm	25/30/40/50/74/101/141/242
	i	5,54 : 1 – 1.600 : 1



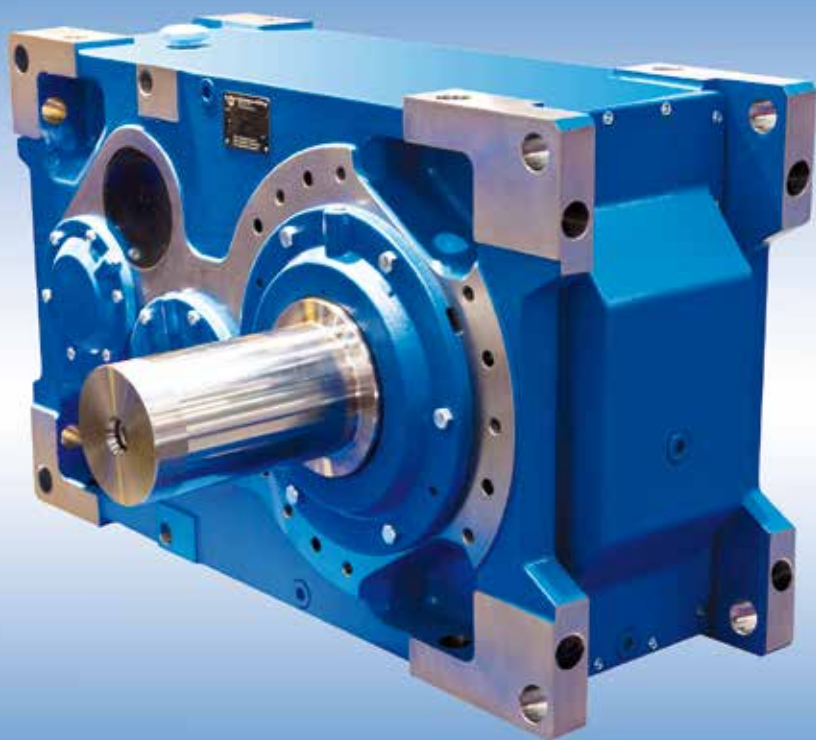
DRIVESYSTEMS

### The UNICASE concept

An closed housing, which encloses all the elements of the gear unit, is milled from a solid block of steel or aluminium.

NORD is the only manufacturer which produces modular industrial gear units with an output torque of 242,000 Nm in a one-piece UNICASE housing.

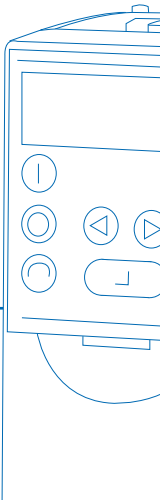
- All bearings integrated into a single housing block
- Complete machining in one step
- High output torque capabilities
- High axial and radial loads
- Great reliability
- Long service life
- Quiet running



### NORD UNICASE design since 1981

In the 1980s, NORD DRIVESYSTEMS engineers developed the most important innovation in gear unit construction: the UNICASE concept, which unites all gear elements in a single closed housing. The innovative concept soon became established on the market and is now standard.




# Frequency inverters and accessories



SK 500E		
<ul style="list-style-type: none"> <li>✓ Compact design</li> <li>✓ Energy-saving function</li> <li>✓ Performance tailored to the application (e. g. "Posicon" positioning control)</li> <li>✓ Push-on modules for control and communication (field bus)</li> <li>✓ Ethernet based BUS systems</li> </ul>	Sizes	10
	U(V)	1 ~ 110 ... 120 ±10 % 1/3 ~ 200 ... 240 ±10 % 3 ~ 200 ... 240 ±10 % 3 ~ 380 ... 480 -20 % / +10 %
	P(kW)	0,25 – 90



SK 700E		
<ul style="list-style-type: none"> <li>✓ Flexible through exchangeable function module cards (e. g. "Posicon" positioning control)</li> <li>✓ Push-on modules for control and communication (field bus)</li> <li>✓ Self-detecting modules</li> <li>✓ Various field bus systems</li> </ul>	Sizes	8
	U(V)	3 ~ 380 ... 480 -20 % / +10 %
	P(kW)	1,5 – 160

VL bearings	Overload protection	Option: Double shaft sealing rings + sealing material
<b>VL II reinforced drive shaft bearings</b> <ul style="list-style-type: none"> <li>✓ Large bearing spacing + reinforced bearings = maximum radial and axial load capacity</li> <li>✓ Longer service life</li> </ul> <b>VL III DRYWELL</b> <ul style="list-style-type: none"> <li>✓ Additional oil drip plate</li> <li>✓ Oil leak detector or oil sensor</li> </ul>	<ul style="list-style-type: none"> <li>✓ Safety coupling installed between motor and gear unit, alternatively between 2 gear units</li> <li>✓ IEC/NEMA connection dimensions</li> <li>✓ Backlash-free torque transfer</li> <li>✓ Simple torque setting</li> <li>✓ Integrated sensor</li> <li>✓ Protected in housing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Optimum sealing</li> <li>✓ Long life seals</li> <li>✓ Clean gearbox oil</li> <li>✓ Stainless shafts</li> </ul>
		







### SK 500E

With frequency inverters from the SK 500E series, NORD DRIVESYSTEMS provides intelligent, cost-effective drive solutions with graduated levels of equipment which are fully compatible with regard to their power range, connection voltage and size.

### SK 700E

The NORDAC SK 700E frequency inverter is designed to the medium to upper power range between 1.5 kW and 160 kW. The combination of a high performance regulator model and extensive protection and monitoring systems for the regulator and the motor ensures the great reliability of the system.



### Outdoor motor installation

#### IP55 protection class

- ✓ Motor with shaft sealing rings on the B side
- ✓ Electrolytically galvanized fan cover
- ✓ IP55 brake with stainless stator disc and brake clutch made from rust-proof material
- ✓ Optional special coating
- ✓ Optional rust-proof friction plate for the brakes
- ✓ Stainless type plate
- ✓ Stainless fixing screws

#### IP66 Protection class

- ✓ Motor with shaft sealing ring on the B side
- ✓ Electrolytically galvanized fan cover
- ✓ Encapsulated terminal box
- ✓ Stainless type plate
- ✓ Ball bearings as 2 RS version with sealing washers
- ✓ Brake and motor as IP66



# Intelligent drive systems from a single source

NORD DRIVESYSTEMS drive solutions are based on the principle of the function pyramid: Motors, control units and gears are just as much components as our extensive range of system modules such as planning, project management, installation and service.

NORD DRIVESYSTEMS produces helical, parallel shaft, bevel gear and worm gear units and is the only manufacturer in the world which produces industrial gear units up to 242 kNm as UNICASE versions. The benefits for our customers include extreme reliability and sealing, safe handling of even the largest output torques, high axial and radial load bearing, quiet running and low maintenance and exceptionally long operating life. With its own gear and motor production facilities, NORD offers its customers complete, sophisticated system solutions with the very highest levels of economy and efficiency.







Left: NORD DRIVESYSTEMS headquarters in Bargteheide, from top: Production plant in Gadebusch, Glinde, Aurich (all in Germany) motor factory in San Giovanni, (Italy, production facility in Waunakee (USA), production in Suzhou (China)

www.nord.com



### Always near you throughout the world

For globalisation, we rely on local roots. We have set up a network of assembly factories and service facilities in 35 of the most important industrialised countries, so that local planning advice, high availability of the required drive technology and rapid local service make NORD DRIVESYSTEMS a flexible and dependable partner for drive systems throughout the world.

- Close to customers thanks to 35 subsidiaries and more than 30 agencies throughout the world
- High availability and rapid service thanks to local presence
- Certification: ISO 9001, UL, CSA, GHOST-R, CCC and ATEX
- Everything from one source, from planning to commissioning
- You can find further up-to-the-minute data and facts about NORD DRIVESYSTEMS under [www.nord.com](http://www.nord.com)







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

**Headquarters:**

**Getriebebau NORD GmbH & Co. KG**

Getriebebau-Nord-Straße 1

22941 Bargteheide, Germany

Fon +49 (0) 4532 / 289-0

Fax +49 (0) 4532 / 289-2253

info@nord.com, www.nord.com

**Member of the NORD DRIVESYSTEMS Group**

