

Intelligent Drivesystems, Worldwide Services



US

INDUSTRIAL GEAR UNITS
MAXXDRIVE® FOR MIXING
AND AGITATING PROCESSES

NORD®
DRIVESYSTEMS

NORD DRIVESYSTEMS GROUP

High-performance Solutions

NORD's 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 linked 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:

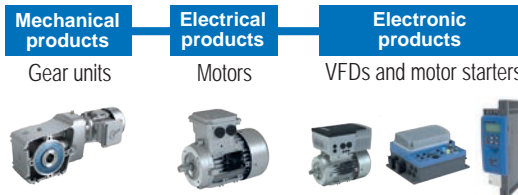
- Fast, accurate, reliable service
- Unmatched product versatility and customizations
- Short lead times
- Technical guidance from experienced engineers
- MyNORD online tools (configure, price, quote, and track your order)
- 24/7/365 after hours emergency support via the NORD 911 hotline

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

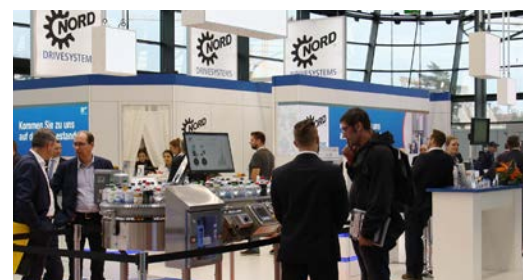


7 production locations with cutting-edge technology
produce gear units, motors, VFDs, and more to provide complete drive systems from a single source.



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.



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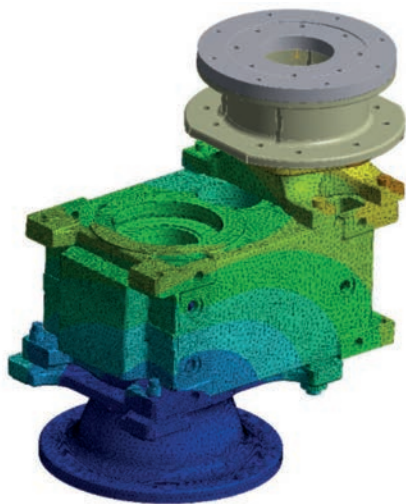
INDUSTRIAL GEAR UNITS

MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

With its MAXXDRIVE® series, NORD DRIVESYSTEMS is the only manufacturer with a complete industrial gear unit system with a one-piece UNICASE housing for applications in mixing and agitating processes.

Characteristics / Performance

- Very high operational reliability through optimum sealing
- Compact, one-piece UNICASE housing with low weight and compact installation space
- High leak resistance, optional TRUE DRYWELL
- Robust and rigid design for the highest loads
- Short shaft center distance resulting in reduced bending moment and improved operational performance
- Optimized IEC/NEMA adapters reducing undesired vibration
- Wide range of modular options for simple and economical integration into mixing and agitation industry applications



Available sizes and speed ratios

- Standard series as helical or helical bevel gear units
- Vertical and horizontal installation positions
- Precisely matched to your application
- Economically and technically optimized solution



	MAXXDRIVE® Helical gear units		MAXXDRIVE® Helical bevel gear units	
	2-stage	3-stage	3-stage	4-stage
Sizes	11	11	11	11
Torque range [kNm]	15 – 255	15 – 280	15 – 225	15 – 260
Speed ratio range	5.6 – 28	22.4 -400	12.5 – 112	80 – 450

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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES



NORD EXPLOSION PROTECTED DRIVE SOLUTIONS

Drive systems for explosion hazard areas Zone 1, 2, 21, or 22

NORD DRIVESYSTEMS is a certified manufacturer of explosion protection solutions with many years of experience with protected drive technology. Explosion protected drives from NORD DRIVESYSTEMS are used in many branches and sectors of industry. NORD supplies customized explosion protected drives, motors, frequency inverters and drive systems:

- EU- Directive 2014/34/EU
- Certified by the Physikalisch-Technische Bundesanstalt (PTB)
- Certified by DEKRA EXAM GmbH
- Certified by NANIO CCVE for EAC Ex

Systems based on top quality components are designed for the particular application according to specific customer requests.

Explosion protected motors

- According to Category 2G / 3G or 2D / 3D
- For Zone 1 / 2 (Gas) or 21 / 22 (Dust)
- According to EN 60079-7 or EN 60079-31
- Ignition protection type Ex eb or tc

Explosion protected gear units

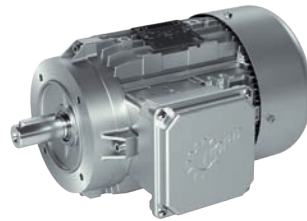
- According to Category 2G / 3G or 2D / 3D
- For Zone 1 / 2 (Gas) or 21 / 22 (Dust)
- According to DIN ISO 80079-36 / -37
- Ignition protection type h

Agitator drive systems

NORD offers complete drive solutions for mixing and agitating processes consisting of an electric motor, frequency inverter, MAXXDRIVE gear unit, and accessories from a single source. Through the wide range of modular products and the great depth of production the drive system can be technically and commercially matched to customer requirements.

NORD can also source reputable 3rd party motors to deliver full drive packages.

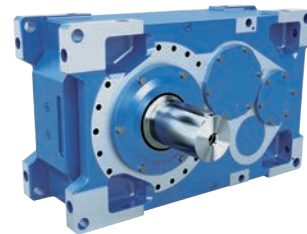
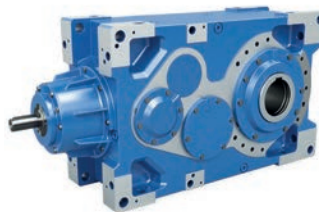
Standard Motors



- Extensive options possible
- ISO F according to class B temperature rise (ISO H optional)
- Suited for inverter duty
- High overload capacity

Sizes	63 – 315
Power	0.16 – 200 HP
Number of Poles	2, 4, 6, 8
Protection Class	IP55, optional IP66
Temperature Class	ISO F, optionally ISO H
Efficiency Class	IE1, IE3, IE4, IE5+

MAXXDRIVE® Industrial Gear Units



- All bearings and sealing surfaces are machined in a single process (promoting quieter operation and a long service life)
- No separating joints in the housing, no sealing surfaces subject to torque
- High-precision axis alignment
- Low maintenance
- Gear ratio range 5.54 to 400:1 with the same foot dimensions
- Parallel shaft and right-angle

Sizes	11
Torque	130,000 – 2,250,000 lb-in
Speed Ratio	5.54 – 1,600:1*

*with combination gearbox

INDUSTRIAL GEAR UNITS

MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES



NORDAC® FLEX Variable Frequency Drive



- Decentralized frequency inverter
- Speed control
- Motor or wall-mounting
- IP55 (optional IP66)
- Integrated PLC

Sizes	4
Voltage	1 ~ 110 – 120 V 1 ~ 200 – 240 V 3 ~ 200 – 240 V 3 ~ 380 – 500 V
Power	0.33 – 30 HP

NORDAC® PRO Variable Frequency Drive



- Frequency inverter for control cabinet installation
- Speed control
- Sensorless current vector control (ISD control)
- Integrated PLC

Sizes	11
Voltage	1 ~ 110 – 120 V 1 ~ 200 – 240 V 3 ~ 200 – 240 V 3 ~ 380 – 480 V
Power	0.33 – 200 HP

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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

Drive systems for stack mixers and counter rotating drives

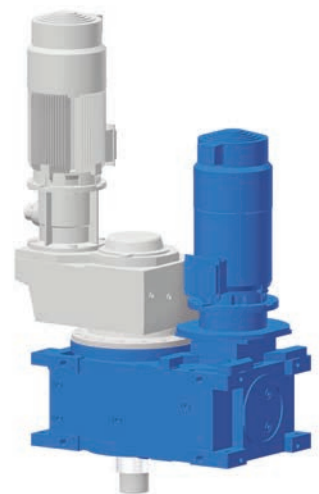
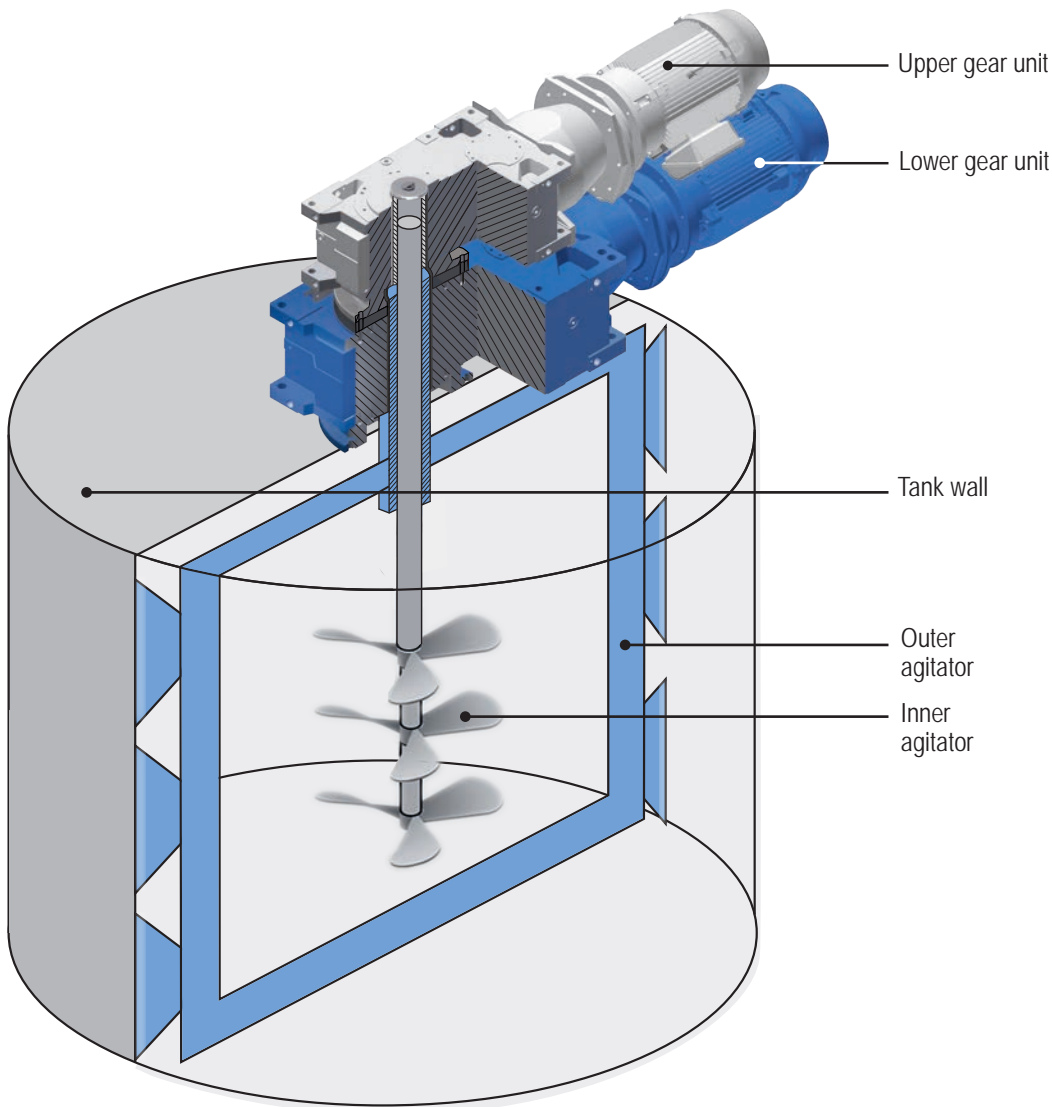
Coaxial drives are often used for counter rotating drives and stack mixers that require a double agitator due to the large size of the tank. Counter rotating drives often consist of agitator blades which rotate in one direction in the middle of the tank and a scraper blade which rotates in the opposite direction. This removes material which is stuck to the wall of the tank and returns it to the agitation process.

Drive combinations

- Helical Bevel – Helical Bevel
- Helical Parallel – Helical Parallel
- Helical Bevel – Helical Parallel

Shaft-in-shaft

For coaxial agitators, NORD offers the option of operating two shafts inside of each other. The inner agitator is driven by the upper gear unit and the outer agitator by the bottom gear unit. The direction of rotation and the speed of the agitators are independent of each other.



■ Helical Parallel – Helical Parallel combination

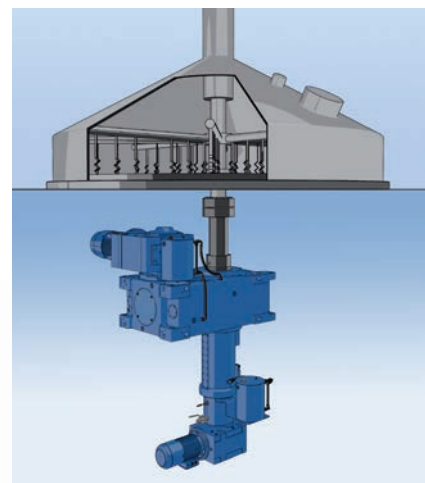
INDUSTRIAL GEAR UNITS

MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

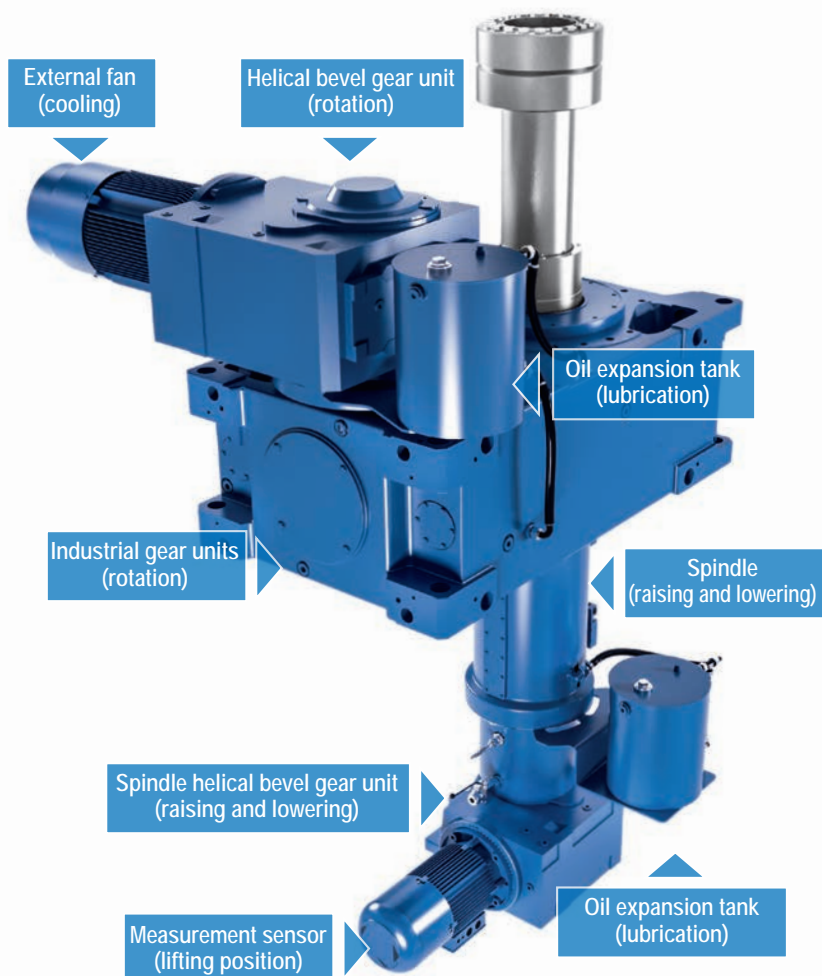


Drive systems for lauter tuns

Lautering is an important part of the brewing process. A lauter tun is a vessel for separating the wort from the solid materials of the mash and functions like a large sieve. It normally has a slotted, perforated base which collects the used ground grains, while the wort can filter through the grain bed. The lauter tun drive rotates and lifts the racking machine inside the vessel. NORD also supplies customizable drive concepts for this special application.



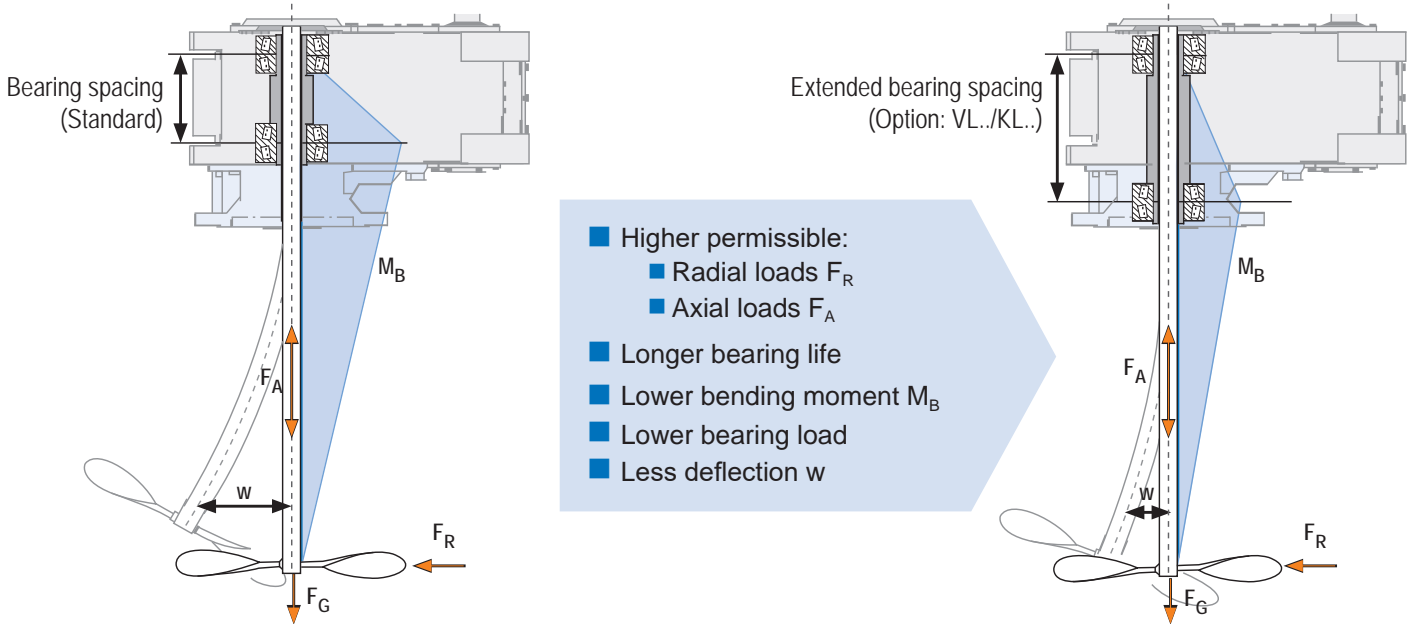
- Drive systems for lauter tuns from 2m³ to 30m³
- Standardized solutions for vat diameters up to 14m
- Integrated lifting device
- Spindle lift or preparation for hydraulic lifting systems
- Complete drive unit from a single source
- Developed in cooperation with industry leaders
- Validated by long-term tests
- Application-specific design



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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

Output shaft loads and bearings



Lubrication options	Output shaft options	Cooling and heating options
<p>Motor adapter (SAFOMI)</p>	<p>Flange coupling</p>	<p>Oil heater (OH)</p>
<p>Oil tank (OT)</p>		<p>Cooling coil (CC)</p>
<p>Pressurised oil lubrication (LC / LCX)</p>	<p>Hollow shaft with parallel key*</p>	<p>Radial fan (FAN)</p>
	<p>Hollow shaft with shrink disc*</p>	<p>Axial fan (FAN)</p>
<p>Pressurised oil lubrication (LC / LCX)</p>	<p>Solid shaft with parallel key*</p>	<p>Water-oil cooling system (CS1)</p>
		<p>Air-oil cooling system (CS2)</p>

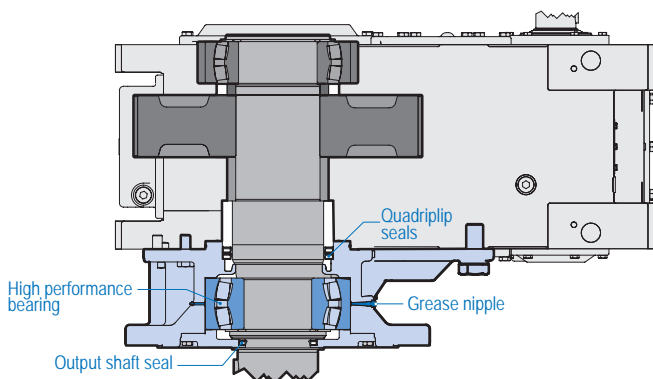
* All output shafts are also available in special dimensions and as stainless steel (rust-proof) versions.

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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

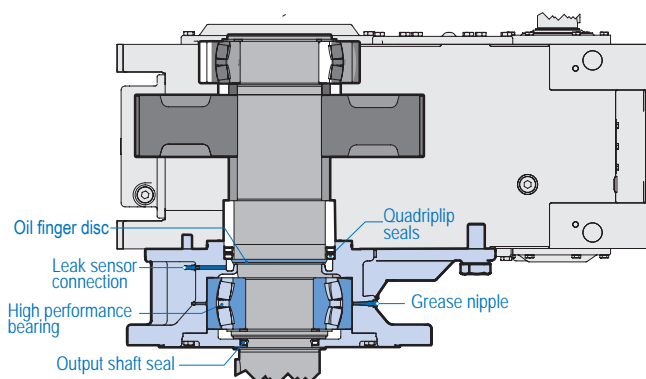
Bearing and sealing options for various requirements

- Versions with tapered roller bearings for high axial loads (KL2, KL3, KL4, KL6)



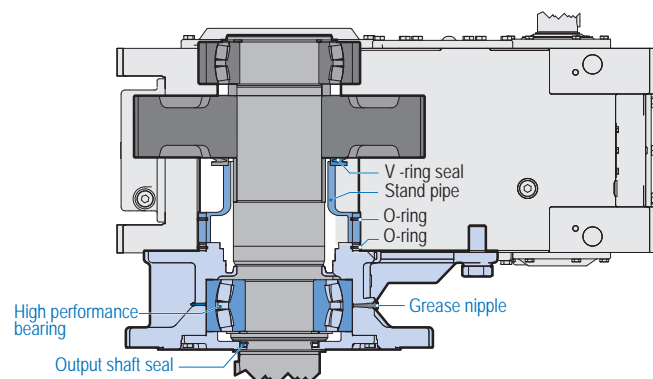
VL2 – Extended bearing spacing

- For high loads



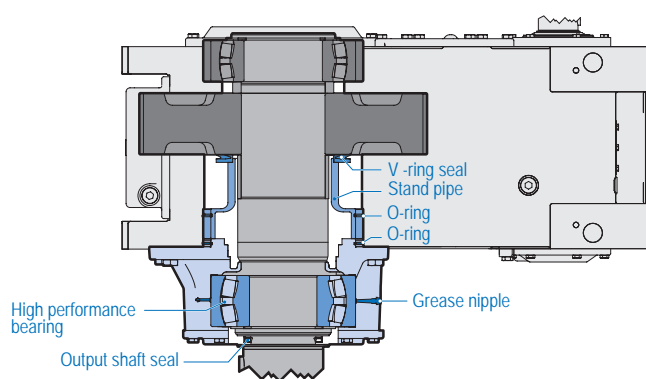
VL3 – as for VL2, with oil finger disc (DRYWELL)

- Additional leakproofing through additional catchment spacer in the flange and visual leak indicator
- Optionally with sensor



VL4 – as VL2, with stand pipe (TRUE DRYWELL)

- Maximum safety due to reduced oil level and stand pipe



VL6 – as VL4, without output flange

- Maximum safety due to reduced oil level and stand pipe

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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

SAFOMI – Sealless Adapter for Mixers

The compact combination¹ of MAXXDRIVE® industrial gear units and sealless IEC/NEMA adapter (SAFOMI) is ideal for agitators. The SAFOMI-IEC/NEMA adapter includes an oil compensation volume, so attachments and wearing parts (e.g. oil tank, drive shaft sealing ring) are not necessary. This results in greater operational reliability and less maintenance.

Existing MAXXDRIVE® helical gear units with standard IEC/NEMA adapters can be easily converted for SAFOMI adapters.

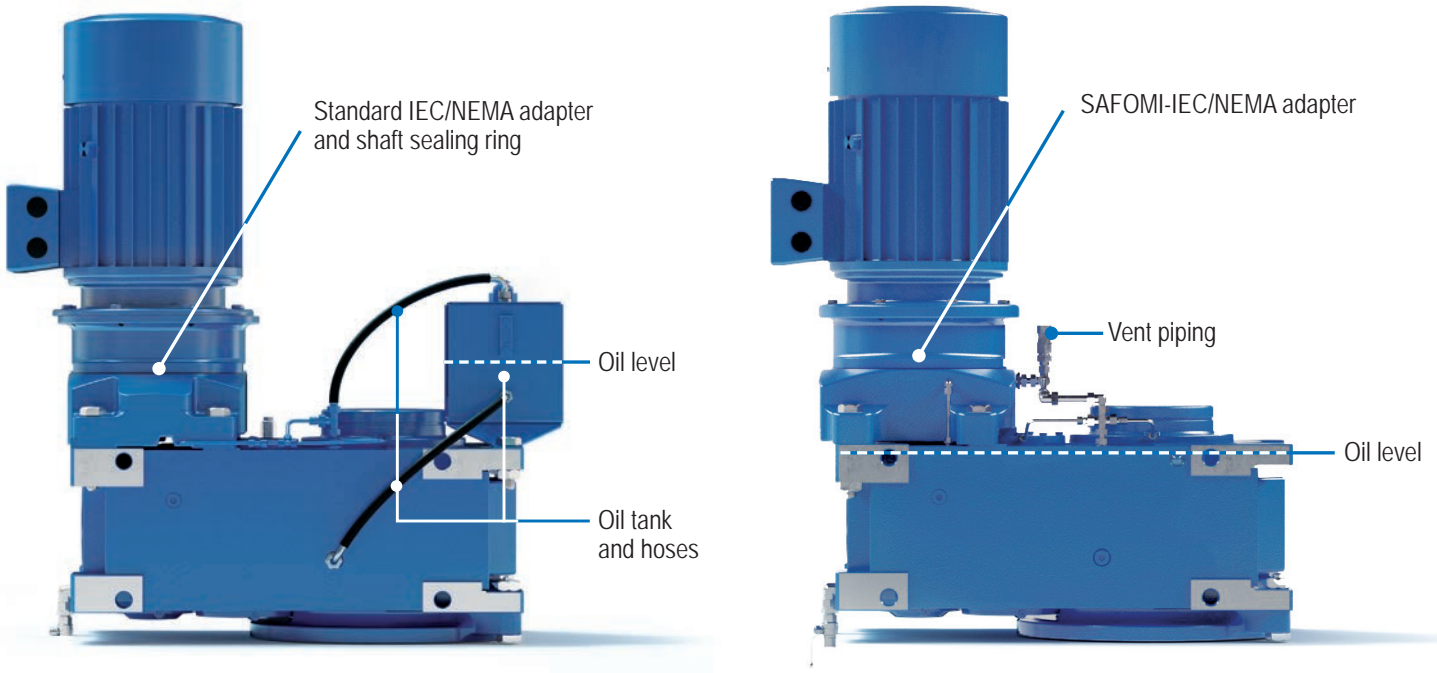
Fewer wearing parts

- No shaft sealing ring required between the gear unit and the IEC/NEMA cylinder
- Longer operating periods, less service required
- Less maintenance and greater reliability

Fewer attached components

- Reduced oil level, no additional oil tank necessary
- Less installation space thanks to fewer attachments

Version comparison



¹ This solution is available for MAXXDRIVE® size 7 - 11 helical gear units in installation orientation M5

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Accessories / Sensors

MAXXDRIVE agitator drives can optionally be equipped with sensors to monitor the operational state of the drive. If required we can also modify our drive solution for customer-specific sensors.

Options		
 <p>Oil level monitoring</p>	 <p>Temperature monitoring</p>	
 <p>Leak indicator</p>	 <p>Oil pressure sensor</p>	 <p>Vibration sensor</p>

Geared motors for mixing and agitating processes

For smaller drive solutions and coaxial agitators in mixing and agitating processes NORD offers a comparable modular system with geared motors.

Helical Inline Gear Units		Clincher Parallel Shaft Units	
			
Power	0.16 – 200HP	Power	0.16 – 200HP
Torque	Up to 205,000 lb-in	Torque	Up to 638,000 lb-in
Helical Bevel Gear Units		Worm Gear Units	
			
Power	0.16 – 200HP	Power	0.16 – 20 HP
Torque	Up to 442,500 lb-in	Torque	407 - 27,3750 lb-in



Housing

- UNICASE™ one-piece housing
- Lower service and maintenance costs
- Optimized strength and rigidity
- Special high-precision housing production
- High-precision shaft bearings



Gearing

- Developed according to international standards
- Case-hardened and hard finished
- In-house quality production
- Noise-optimized bevel gears



Roller bearings

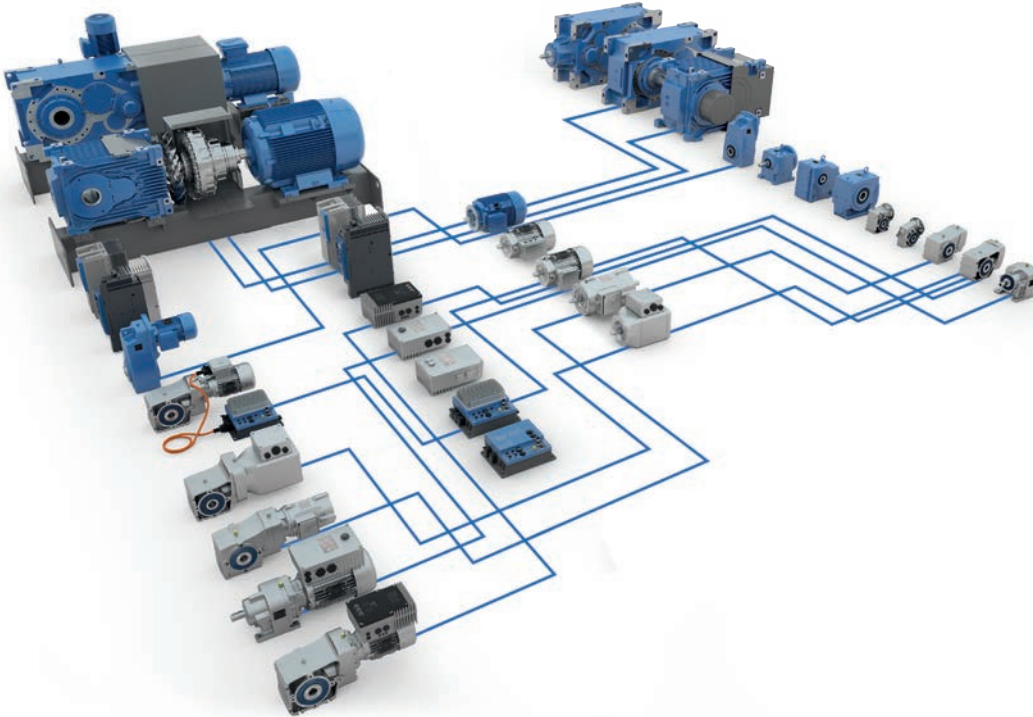
- High-quality roller bearings from top manufacturers provide long life and low friction

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MAXXDRIVE® FOR MIXING AND AGITATING PROCESSES

The MAXXDRIVE series is a dependable member of the NORD product family where very high torque and industrial reliability are required. With an extensive range of modular products, NORD provides many technically and commercially optimized drive solutions.

NORD's tailored solutions for agitator drive systems can be supplied with a multitude of standardized drive configurations and options. Contact us to supply the exact unit for your application.



NORD DRIVESYSTEMS Product Portfolio

- Complex drive systems from modular components
- High availability, global production network
- Short delivery times for stock components and spare parts
- Highest product quality at all locations
- ATEX version also available
- myNORD customer portal for online configuration, pricing, quoting & ordering
- 24/7 dependable partner for engineering, production, installation and service

www.nord.com

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