

Wilo brings the future. Wilo Offshore

Designed to work in ultra-harsh conditions with unrivalled reliability



FOR A BRAND **NEW WORLD**

MEGATRENDS CHANGE THE WORLD.

Megatrend – it's a common buzzword. But what exactly does it mean? Megatrends change the world. Lasting and profound in their effect, they are often closely related and reciprocally linked in their development. The influence of megatrends extends throughout all areas of our lives: from society, economy and politics to science, technology and culture. Wilo identified six megatrends that are especially important to you as our customers and therefore to us in

our work:

 \rightarrow Globalization

→ Energyshortage

 \rightarrow Water shortage

 \rightarrow Urbanization

 \rightarrow Climatechange

→ Technological progress and digitalization

We engage intensely with these six trends to study their effects and develop solutions that make the future a betterplace and enhance the quality of life.

One cross-cutting megatrend that has brought many more changes is globalization. We all feel its effects, most of all at the workplace. The worldwide availability of products, information, services, raw materials, technologies and procedures has heightened competition.

Wilo develops solutions that give you an edge in regional and local markets. And in turnkey quality, since our distributed production network enables short delivery routes for our customers around the world.

of precious resources.

In a globalized world, the economy is growing at an incredible pace - and with it middle class consumers and their purchasing power. Competition for raw materials and resources is intensifying. Energy shortage and water short- ages are two major consequences. In addition, outdated power infrastructures, growing water pollution and highly inefficient usage patterns aggravate the situation.

That is why Wilo focuses on developing both flexible, high- efficiency solutions that adapt to their environment and highly efficient technologies that conserve resources. Our development activities consider the entire process from energy production or water purification to transportation and consumption. Our innovative products let you satisfy requirements for high system efficiency and the sustainable use

OUR PRODUCTS

THE WORLD'S MOST EFFICIENT PUMPS.

With a range of products designed specifically for the most hostile of environments, where maintenance and inspection is not as simple as walking into a plant room, Wilo are perfectly equipped for supplying the offshore oil and gas industry with the right solutions.

Advancements in manufacturing processes and coating technology have resulted in some of the world's most efficient pumps with reliability to match. This approach lends itself ideally to applications where the pumps are so inaccessible on a day to day basis. This results in really attractive propositions for drilling solutions where system failures can result in loss of production leading to huge impacts on revenue.

The increased efficiency of our products is a great consideration for those working within an industry which comes under ever increasing scrutiny in terms of carbon emissions and potential for a sustainable future.



WILO SEAWATER LIFT PUMPS

As an industry supplying over 90 million barrels daily and 26,000 MW capacity, the global demands placed upon the offshore industry dictate that the equipment used in its production must be of the highest quality, efficiency and reliability – Wilo is your ideal partner.



DESIGN AND SELECTION

Seawater lift pumps in offshore installations are exposed to ultra-harsh operation conditions: salinity, sand, biofouling, insufficient motor cooling and use of chemicals require a dedicated design to both pump and motor.

BENEFITS:

- → Reduced service and maintenance costs
- → Prolonged system per formance
- \rightarrow Accurate sizing by application thanks to broad product range

Wilo SWLP are designed for a highly reliable operation in offshore installations. We believe we have unique features which make our SWLP best-in-class in terms of operation reliability.

With particular attention paid to the key problem areas for such applications - corrosion, cooling and sustained hydraulic efficiency - Wilo Seawater Lifting Pumps offer extended maintenance intervals and increased system availability.

RELIABLE MOTOR HYDRAULIC TECHNOLOGY:

- → Zinc-free bronze/stainless steel casings
- → Nickel-aluminium bronze/stainless steel casings
- → Duplex SS shafts
- \rightarrow 40 °C fluid temperature
- \rightarrow ± 10% voltage tolerance
- \rightarrow Wound to customer voltage requirement
- → True 1.15 SF
- → PE2/PA windings for voltage spikes resistance
- $\rightarrow 0 \text{ m/s cooling flow}$
- → Cool act technology (10–16" motors)









8 Seawater Lifting Pumps



WILO-ACTUN ZETOS

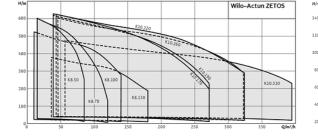
Multistage stainless steel cast submersible pump in sectional construction for vertical and horizontal installation.

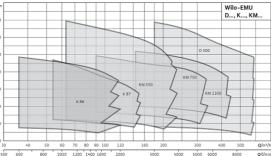
- \rightarrow High pump efficiency of up to 84.5 %.
- → A previously unequalled total efficiency of more than 75 % in this class with permanent magnet rotor 40°C fluid temperature
- → High wear resistance: max. sand content of 150 g/m3
- \rightarrow ACS approved for domestic water applications
- → Easy maintenance, simple to dismantle system



Multistage stainless steel cast submersible pump in sectional construction for vertical installation.

- → VdS certified
- → Heavy-duty version made of cast iron or bronze
- → Pressure shroud in corrosion-free and hygienic stainless steel version with rubber bearings for reducing noise and vibration
- → VdS-certified non-return valve available as an accessory
- → High wear resistance: max. sand content of 35 g/m3
- → Available in innovative Ceram CT coating



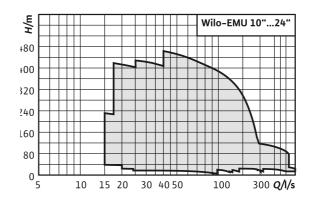




WILO-EMU 10" ... 24"

Multistage stainless steel cast submersible pump in sectional construction for vertical and horizontal installation.

- → Hydraulics adapted to the duty point enable energy-efficient operation
- → Individually configurable motors and materials to ensure reliable operation in all applications
- → Drinking water versions with ACS approval
- → Motors with sheath current cooling (Cool Act technology) for higher power densities
- → Rewindable motors with easy maintenance
- → Pressure shroud for application as a pressureboosting system
- → Hydraulics can be coated with Ceram CT to boost efficiency
- → Available in innovative Ceram CT coating

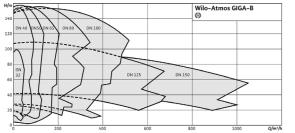




WILO-ATMOS GIGA-B

The Wilo-Atmos GIGA-B is a pump in monobloc design, which is particularly suitable for transporting a reliable water s upply 365 days a year at low water.

- → Energy-saving due to state-of-the-art pump hydraulics
- \rightarrow Universal use in diverse applications thanks to different impeller materials, several motor options as well as different mechanical seals
- → Easy installation due to standard pump support feet and optional supporting block
- → Easy maintenance and user-friendly design with optional back pull-out design and cartridge mechanical seal for large pump types
- → Cataphoretic coating of all cast iron components ensures high resistance to corrosion and long service life
- → Meets user requirements due to performance and main dimensions in accordance with EN 733
- → Available in innovative Ceram CT coating
- → Currently not available in ATEX





WILO-ATMOS TERA-SCH

The Wilo-SCP axially split case pump provides operating costs.

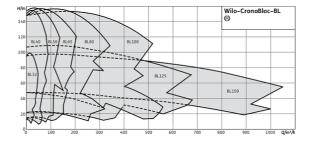
- → Efficient hydraulics for high flow rates up to 17,000 m3/h
- → High process reliability and easy maintenance without
- \rightarrow removing the pressure or suction lines
- → Decreased noise level and reduced vibrations
- → Woundtocustomervoltagerequirement
- → Options: energy efficient IE3-/IE4 motors and drinking water approval (KTW, ACS)
- → Available in Duplex steel and innovative Ceram CT coating
- → Currently not available in ATEX

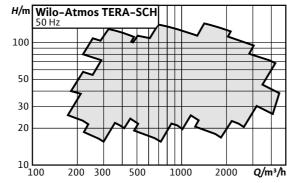


WILO-CRONOBLOC-BL

Wilo-CronoBloc BL – the reliable pump in monobloc Pump in monobloc design with flange connection. design with high efficiency.

- → Hydraulics adapted to the duty point enable energy-efficient operation
- → Individually configurable motors and materials to ensure reliable operation in all applications
- → Drinking water versions with ACS approval
- \rightarrow Motors with sheath current cooling (Cool Act technology) for higher power densities
- → Rewindable motors with easy maintenance
- \rightarrow Pressure shroud for application as a pressureboosting system
- → Hydraulics can be coated with Ceram CT to boost efficiency
- → Available in innovative Ceram CT coating







WILO-BM

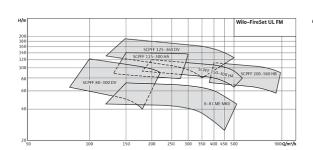
- Or Compact block design with directly flanged threephase current motor and one-piece motor pump shaft
- \rightarrow Can be used in many applications due to material made of cast stainless steel (BM-S) and cast bronze (BM-B)
- → Meets user requirements due to performance and main dimensions in accordance with EN 733 (DIN for standard pumps)
- → Standard-equipped feet on pump housing and motor for installation on a base
- → Available in innovative Ceram CT coating
- → Currently not available in ATEX



WILO-FIRESET NFPA UL FM

The NFPA-compliant fire-extinguishing system UL FM are robust, reliable pumps with axially split housings can be used in a wide field of applications.

- → Certified, modular pump set according to NFPA (UL FM) standards for the highest level of design flexibility
- \rightarrow Robust pumps with axially split housing up to 2500 gpm and 260 psi for a wide field of application and long service life
- → Compact design on a universal baseplate for easy transport, installation and maintenance
- \rightarrow Power reserve for a high level of safety
- → Modularity enables a configuration tailored to individual requirements

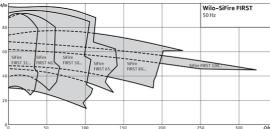




WILO-SIFIRE FIRST

The Wilo-SiFire FIRST is a flexible modular norm pump system in accordance with EN 12845.

- → Modular norm pump system with electric or diesel motor for a wide field of applications and high flexibility in designing
- → Long lifetime thanks to robust design
- → Easy transport, installation and maintenance thanks to an universal base plate
- → Intuitive handling on specific firefighting controller
- → Equipment and pipes calibrated in accordance with EN 12845 standard
- → Quick installation thanks to preinstalled hydraulic and electric components on the discharge side

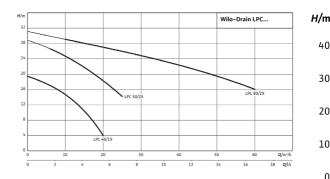




WILO-DRAIN LPC

Self-priming drainage pump with standard motor for The Wilo-EMU KS is a Submersible drainage pump. dry well installation.

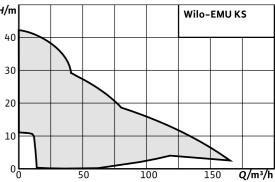
- → Long service life thanks to its robust construction in grey cast iron
- → Easy maintenance due to integrated inspection opening
- → Flexible application





WILO-EMU KS

- → Long service life
- → Heavy duty design
- → Slurping operation possible
- \rightarrow Suitable for continuous duty(S1)
- → Ready-to-plug

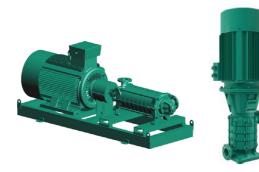




WILO-EMU FA (CUSTOMIZED)

Submersible sewage pump with and without active cooling system for continuous duty in the stationary and portable wet well installation, as well as for stationary dry well installation.

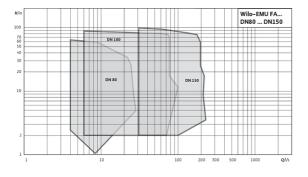
- → Can be tailored to suit your exact requirements. For reliable and efficient pumping of pre-treated sewage and untreated sewage.
- → Versatile. Optimum pumping of various fluids at all times using different impeller shapes.
- → Energy-efficient thanks to optional IE3 motor technology
- → Protected against abrasion and corrosion with Ceram coating and special materials
- → Suitable for immersed and non-immersed applications, even in continuous duty

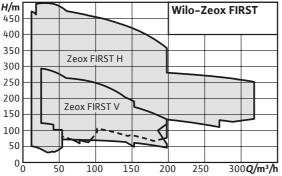


WILO-ZEOX FIRST H/V

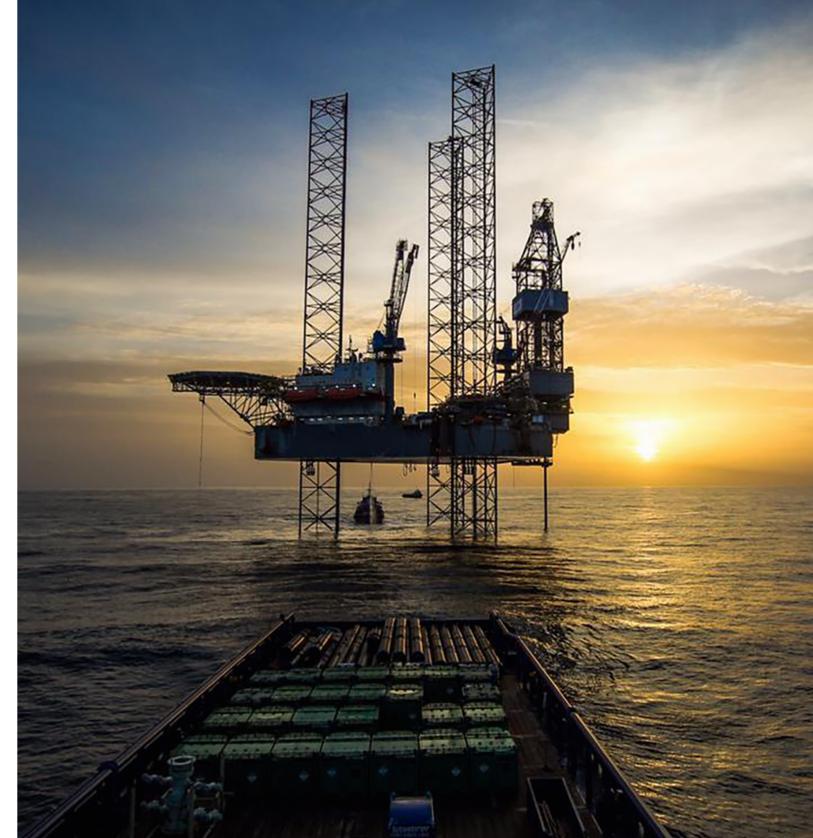
Non self-priming, highly efficient high-pressure multistage centrifugal pump for vertical application.

- Extremely efficient hydraulics and highly-efficient IE3 motor with standard-mounted PTC sensor
- Pump set standard mounted with rigid coupling between motor and hydraulics and with mechanical seal
- Standard-mounted bypass flushing device guarantees a long service life for the mechanical seal
- Clever flange positioning and stuffing box gland upon request
- → Bronze impellers upon request for high reliability
- → Available in innovative Ceram CT coating





OFFSHORE SUPPORT SERVICES



SERVICE

With products designed specifically for the most hostile of environments, where maintenance and inspection is not as simple as walking into a plant room,

Wilo are perfectly equipped for supplying the offshore oil and gas industry with the right services.

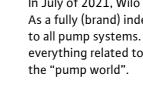
Even with advancements in manufacturing processes and coating technology, the harsh environment cannot be dismissed. These applications, where the pumps are so inaccessible on a day to day basis, are under constant stress. Long system failures can result in loss of production leading to huge impacts on revenue.

This results in really attractive propositions where our services can still remaining the excellent quality the industry come to expect.

WRI-TECH

As an industry supplying over 90 million barrels daily and 26,000 MW capacity, the global demands placed upon the offshore industry dictate that the services must be of the highest quality, efficiency and reliability – WRI-TECH is your ideal partner.

WRI-TECH



BENEFITS:

- \rightarrow Good quality
- $\rightarrow 24/7$ service
- → Flexibility
- → Short delivery times

WRI-TECH as mentioned before is a fully (brand) independent organization. As a result, the experience with almost every brand and model of pump has grown over the years. Wilo together with WRI-TECH can provide service for all your pump systems. This includes Wilo pump systems but also systems from other brands. In addition to its own group, WRI-TECH also has a large number of often smaller, specialized companies with which it collaborates.

REPAIRS

Wilo, together with WRI-TECH, can realize the full repair up to the quay in the Benelux or in the workshop. For every repair, we provide a clear, extensive and detailed report stating the work and of course the costs for this pump overhaul. As well as (if required) an alternative to a replacement pump. Based on the report, the customer can make a decision for a pump overhaul or a replacement pump. Optionally we can lap up and repair mechanical seals, separately or for pump repairs within our workshop.

MAINTENANCE

Wilo, together with WRI-TECH, can realize the full maintenance up to the quay in the Benelux or in the workshop. In the case of maintenance on pumps, measurements are taken at a specified frequency on the pumps and drives to determine which pumps/drives are in lesser condition and can be expected to be overhauled. This will then become a planned overhaul at a time when the pump and/or drive can be missed in the installation without unintentionally stopping production.

TESTS

New ordered pumps are tested in the main factory in Hof according to various ISO standards including various certifications. After overhaul or repair of a pump, we can also have it tested locally, where we can submit a report on the pump meeting the set requirements. In addition, we offer the possibility for witness tests.

In July of 2021, Wilo Netherlands took over the service partner WRI-TECH. As a fully (brand) independent organization, WRI-TECH provides service to all pump systems. The specialized company in the field of pumps and everything related to it, which expertise stems from years of experience in



OFFSHORE, BUT IN SCOPE

INNOVATION - OFFSHORE HEAVY LIFT DP2 JACK-UP (OFFSHORE INSTALLATION) VESSEL

DEME is a global solutions provider in the offshore oil, gas and renewables industry. They have an unrivalled track record in the transport and installation of foundations, turbines, inter-array cables, export cables and substations for offshore wind farms. In the oil & gas industry they are experts in landfalls and civil works, rock placement, heavy lift, umbilical's and installation and decommissioning services. By operating a high-tech and versatile fleet of vessels, of which the "Innovation" is one of more than 100 vessels, they offer flexible solutions for the most complex offshore energy projects.



WHAT WAS THE SALES ARGUMENTATION?

colleague vessel. This obviously isn't the right way so DEME opted for a spare pump on board.

WHY DOES DEME GROUP CHOOSE THE WILO SOLUTION?

- \rightarrow The current pump unit (KM3100 + U210-4/100 MFY: 2013 in process is already a Wilo so it's easy and logical for 1:1 interchangeability.
- \rightarrow The (technical) crew of the Innovation are very satisfied with the performance and quality of the pump. In addition, (preventively) maintenance is relatively simple so that virtually no unnecessary costs are incurred.
- \rightarrow The price/quality ratio is in line with the market

WHAT ARE THE IMMEDIATE AND LONGTERM BENEFITS WE ARE **BRINGING TO DEME GROUP?**

- \rightarrow We also showed Deme Group that we are the right partner for pumps, maintenance, repair, overhaul and testing of pumps.
- → Since our renewed contact in August 2020 we have carried out several orders/maintenance/repair/overhaul assignments both on board of the innovation as on other vessels. Due to the limited time in port during an assignment at sea the work was taken up with.
- \rightarrow priority so that the pumps could quickly be functional again on board.





TECHNICAL INFORMATION:

- → Built: 2015; length: 147.50 m; width: 42.00 m; depth: 11.00 m; leg length: 89,00 m; staff: 100;
- \rightarrow equipment in all cabins: shower, toilet, hairdryer, satellite TV, radio, safe, central

FACTS:

- → Object -> Offshore Heavy Lift DP2 Jack-Up Vessel
- → Segment -> Industry
- → Application -> Water intake
- → Installed product -> KM3100 + U210-4/110

 \rightarrow At the time of request the motor of the existing KM3100 was rewound. This process takes quite some time as the Innovation was about to carry out an assignment to install wind turbines in the North Sea and could not do without the pump. Since a spare motor/pump unit was not available, they had to borrow a complete pump unit from a



THE FUTURE IS NOW.





Borr Drilling is a global contractor in the offshore oil and gas industry. The company owns and operates jack-up rigs of modern and high- specification designs providing drilling services to the oil and gas exploration and production industry worldwide in water depths up to approximately 400 feet. Their modern fleet of rigs and capable organisation will deliver safe and high quality drilling operations to their customers. By operating a high-tech and versatile fleet of Jack-Ups of more than 30 drilling rigs, they offer flexible solutions for the most complex offshore energy projects.



WHAT WAS THE SALES ARGUMENTATION?

- \rightarrow The CME II JU drilling rig needed three submersible pumps, two for installation and one spare. Three K147-1 + NU911T-2/90-0 were advised and shipped from the main factory in Hof to Mexico.
- delayed. A KM1300 + NU911 T-2/100-0 was advised, delivery was done as fast as possible, to prevent any production delay.
- production.

WHY DOES BORR DRILLING CHOOSE THE WILO SOLUTION?

- \rightarrow Wilo showed Borr Drilling we are the right 'one stop' partner that not only can deliver new Wilo pumps, but can also offer maintenance, repair, overhaul and testing of Wilo and/or other branded pumps.
- \rightarrow The (technical) crew of the CME II JU, Natt and Prospector 1 are very satisfied with the performance and quality of the pump systems.
- \rightarrow The price/quality ratio is in line with the market
- \rightarrow Great service and fast communication

WHAT ARE THE IMMEDIATE AND LONGTERM BENEFITS WE ARE **BRINGING TO BORR DRILLING?**

- \rightarrow We showed Borr Drilling that we are the right 'one stop' partner for pump solutions and maintenance, repair, overhaul and testing of pumps for the coming years.
- \rightarrow Being a reliable and transparent organization with a direct line of communication, which strengthens cooperation for the short and long term
- \rightarrow We have proven that by moving fast, we did not endanger production, which could have caused major setbacks for Borr Drilling



FACTS:

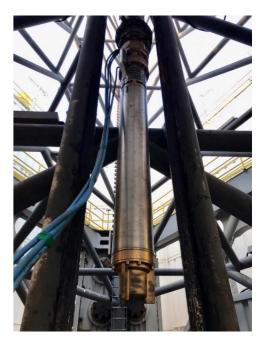
- → Object -> Offshore Jack-Up Platform (DRILLING RIG)
- → Segment -> Industry
- \rightarrow Application -> Water intake

INSTALLED PRODUCTS:

- → KM1300 + NU911 T-2/100-0
- → K147-1 + NU911 T-2/90-0
- \rightarrow Other Wilo pump systems

 \rightarrow Borr other drilling rig urgently needed a replacement submersible pump, as production would otherwise be

 \rightarrow The Prospector 1 drilling rig was due to carry out production and needed a repair on one of the submersible pumps. Together with WRI-TECH the repair was done efficiently and quickly, so the Prospector 1 could leave in time for



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Wilo Nederland B.V. Rak 18 1551 NA WESTZAAN The Netherlands T +31 88 9456 000 www.wilo.com/nl/nl/

WRI-TECH B.V. Molenwerf 23-A 1911 DB UITGEEST The Netherlands T +31 251 320 991 www.wri-tech.com

Martijn Bisschop M +31 6 300 54 340 martijn.bisschop@wilo.com

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