WILO

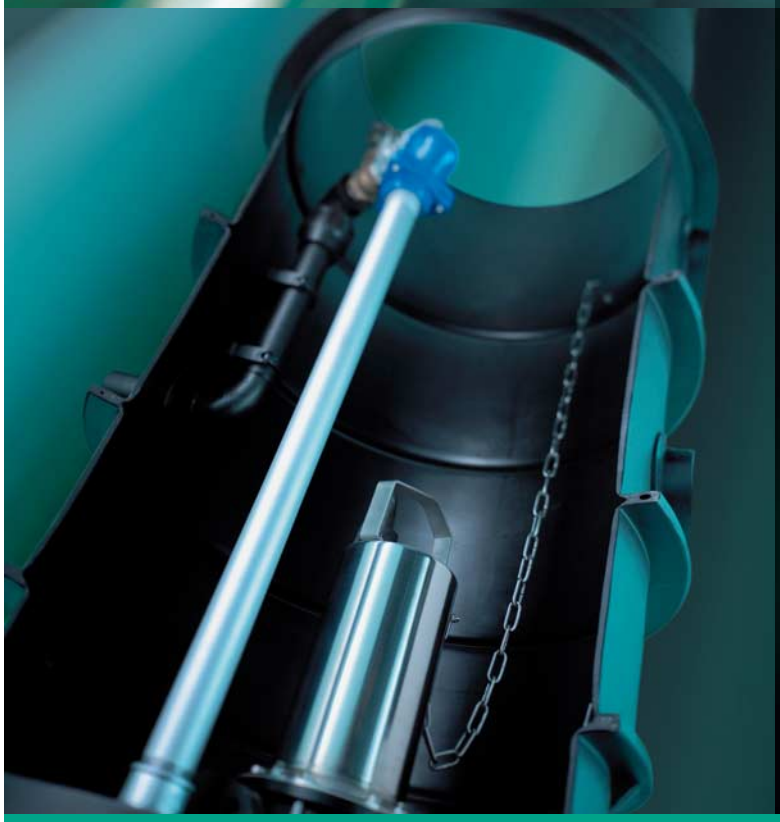
Pumpen Intelligenz.

Intelligent solutions for water and wastewater management.

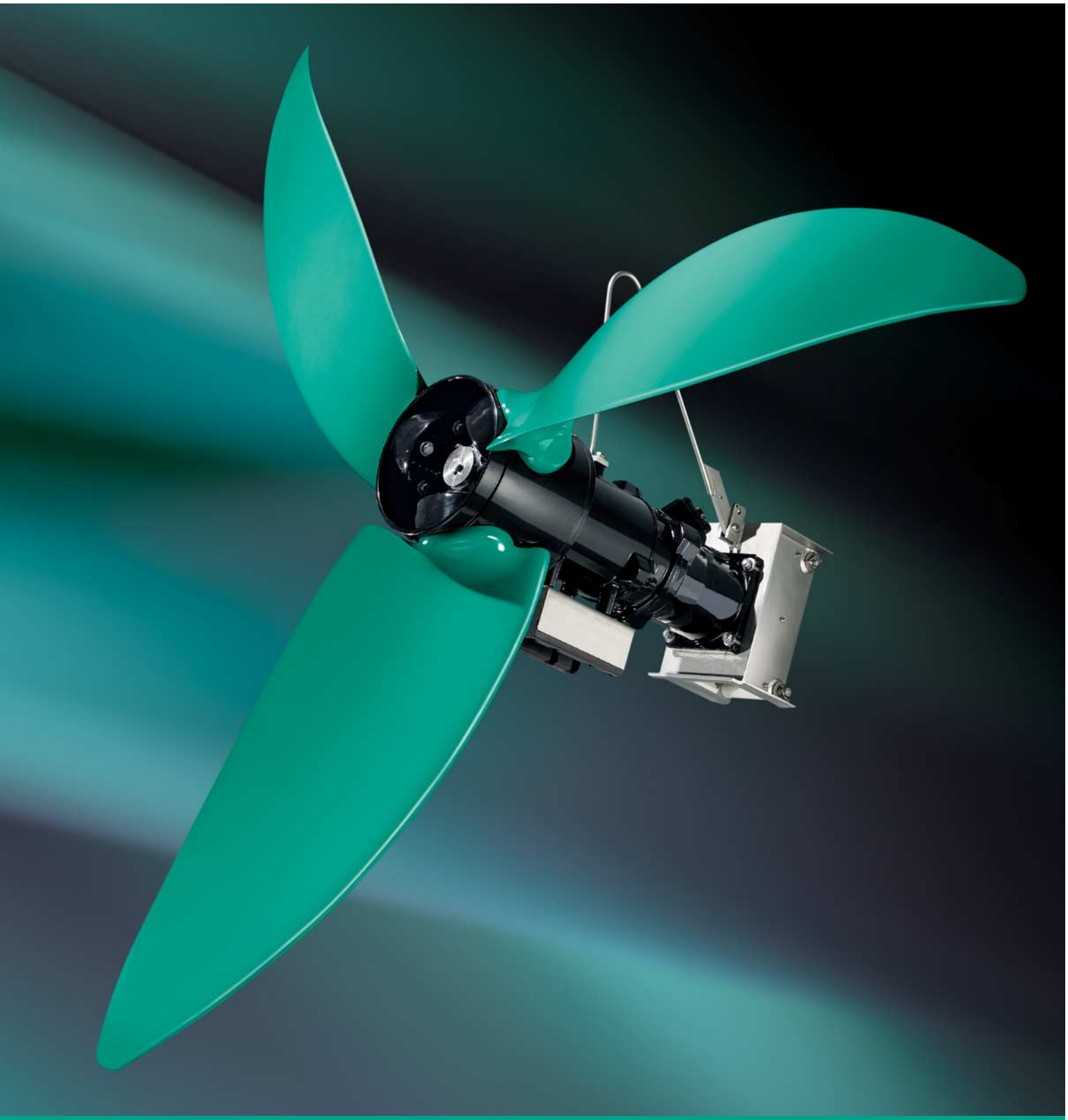
Competence brochure.

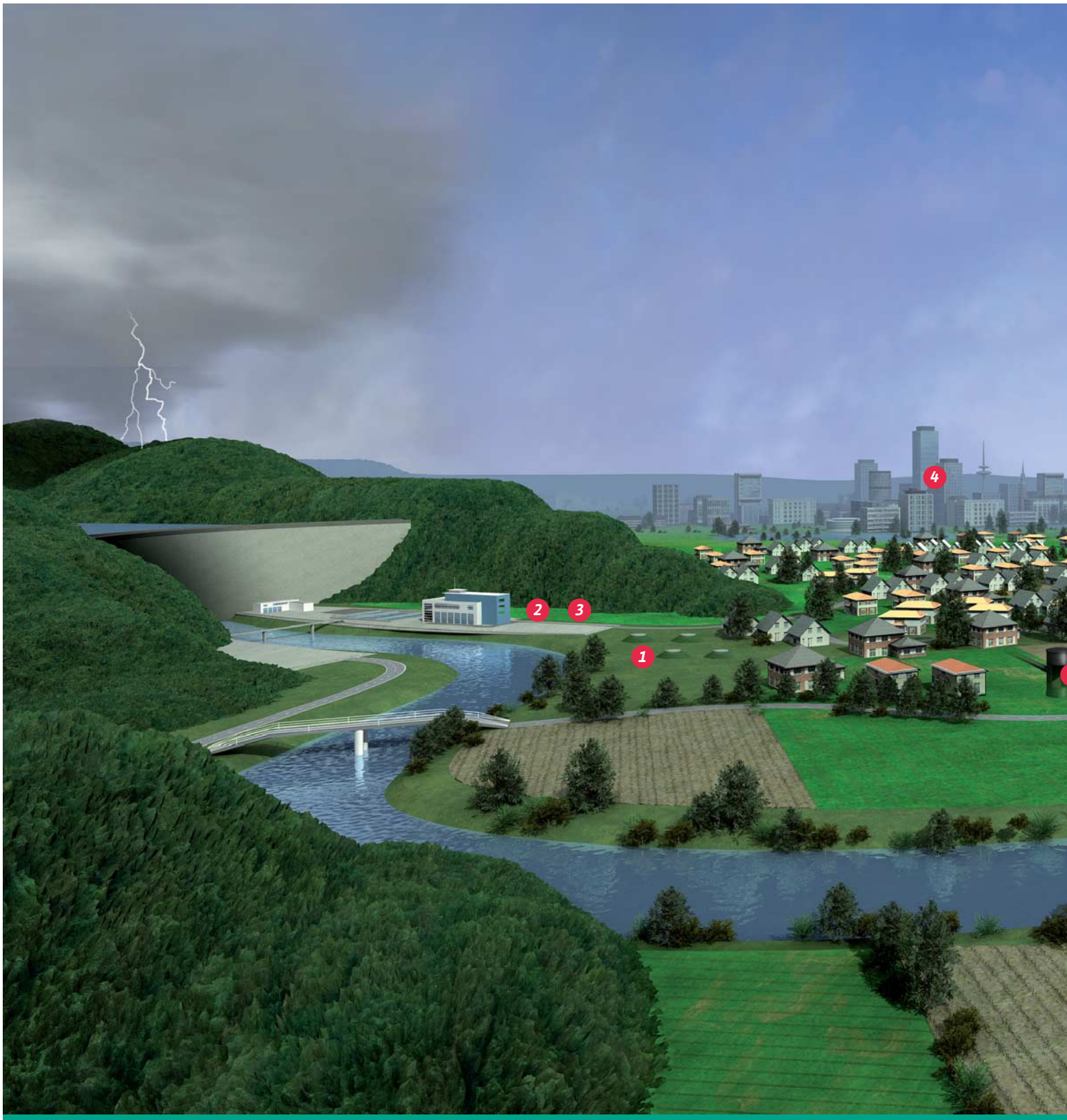
Wilo-EMU technology.

As a consequence of the merger with EMU, Wilo Pumps and systems set new standards of technical performance and efficiency in the municipal water/ sewage industry. Thanks to our expertise, competence and outstanding planning support, we can provide professional solutions for all your water supply, sewage disposal and sewage treatment demands – environmentally conscious and in line with the market. This comprehensive range of products is supported by our global infrastructure. Great? We call it Pumpen Intelligenz.



Always the right solution.





1 

Wilo-EMU KM

2 

Wilo-ASP

3 

Wilo-VeroNorm-NPG

4 

Wilo-Comfort COR-6 MVI/CC

5 

Wilo-EMUPORT

6 

Wilo-DrainLift WS

7 Wilo-EMU FA

8 Wilo-EMU Megaprop

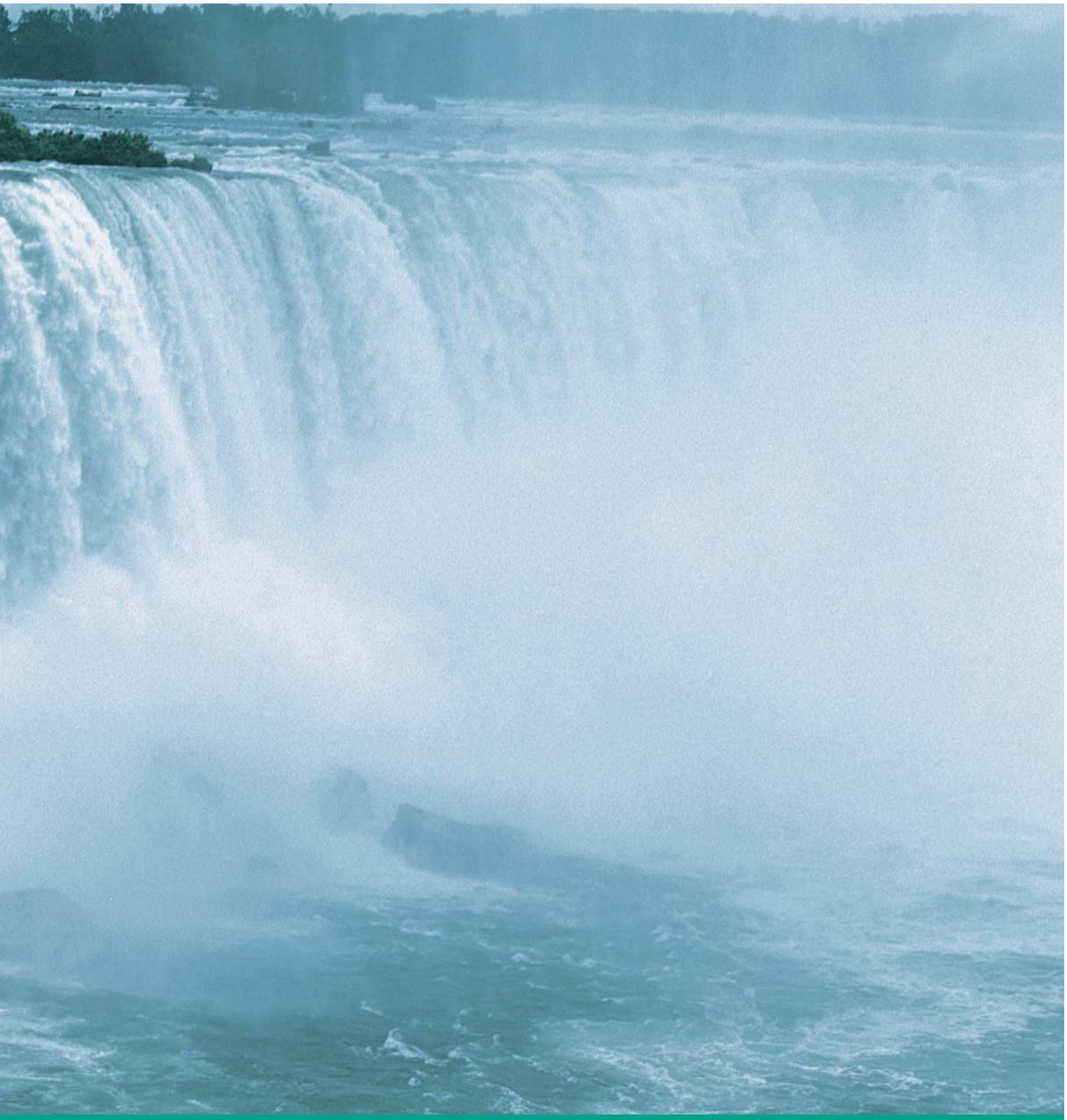
9 Wilo-EMU RZP

10 Wilo-EMU FA

11 Wilo-EMU KPR

12 Wilo-CC-System

Water supply with Wilo.



Fresh and pure water is a dwindling resource. That's why the extraction and appropriate planning for the provision of this valuable resource present a permanent challenge. Moreover, various new methods of obtaining potable water have been developed – and the number of sources from which potable water is extracted has significantly increased, for example, the use of desalinated seawater or aquifers (geological ground water reservoirs). Against the background of such a wide range of sources, water purification systems must become more flexible to keep up with developments and the widely varying qualities of the waters extracted. This requires pumps and components that are capable of a combination of optimum media extraction, efficiency and long-term reliability in each respective system.

Wilo-EMU KM 1300
Borehole pump
• Safe operations
• High performance
• Extreme lifespan

Water supply technologies from Wilo.

Potable and industrial water for all purposes.

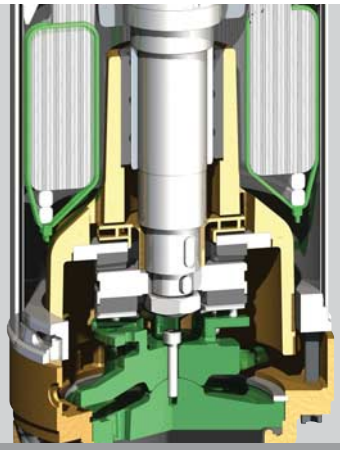
Wilo-EMU KM 1300 borehole pump.
Best possible solution.
We solve sophisticated water supply tasks with customised technology and individual materials. For this, the Wilo EMU KM borehole pump series offers a combination of different materials, e.g. in Ni-Al bronze. The material demonstrates very good corrosion resistance when used in seawater. In order to guarantee the highest possible reliability and durability, every single impeller stage has a standard slide bearing.

Innovative motor technology.
The newly designed motor series CoolAct (types NU 911 and NU 122), with internal active cooling and a performance range (50 Hz) of 75 kW to 360 kW, allows a maximum power output at a minimum motor diameter. Thanks to a constantly driven impeller, the cooling medium is fed directly through the bearing and winding. The heat loss can be optimally absorbed this way, and in the double-pipe sheath, can be delivered to the outer sheath in a defined manner. The result: Up to 25 % more power. Thanks to the innovative CoolAct technology, a considerably higher power density is realised while reducing the operating temperatures at the same time. The small installation diameter also reduces the investment and construction costs of wells and water pumping systems.

Sprinkler Pumps Wilo D 500.
Certified pumps for sprinkler systems.
Sprinkler pumps are used for supplying water to fire extinguishing systems and sprinkler systems in public buildings, emergency systems, etc. Our sprinkler pump range has been extended with regard to volume flow with the submersible motor pump D 500 with CoolAct motor technology, certified by VdS. With this, larger sprinkler systems can be operated with only one pump. Here, too, the CoolAct motor technology has proven itself. Since no external cooling jacket is necessary, the pump can be installed taking up even less space.

Wilo-Sub stainless steel pumps.
Versatile applications.
The product range Wilo-Sub TWI 4", 6" and 8" includes the new Wilo submersible pump program and replaces the Wilo-EMU NR-range. Besides water supply these stainless steel pumps are suitable for many applications. Their special features are wear resistance, simple installation and fast availability thanks to our large stock pump program in the ranges 4" and 6" (in V2A design).

coolact



Wilo-EMU KM 1300 + NU 911

Borehole pump
- Internal active cooling
- Increased efficiency up to 25 %
- Higher flow rate in small diameters

Wilo-EMU D 500

Pump for Sprinkler systems
- High flow rate with only a few aggregates
- With no external cooling shroud
- Wear resistant due to 4-pole motors

Wilo-Sub TWI 4", 6" and 8"

Pressure boosting system
- Vertical or horizontal installation possible
- Optimised hydraulics with high efficiency
- Wear resistant for a high sand content

Wilo-Comfort COR-6 MVI CC
Pressure Boosting system
• Compact
• Easy to maintain
• With electronic control system

Water supply technologies from Wilo.

Potable and industrial water for all purposes.

Wilo-Economy/-Comfort/-Comfort-Vario Pressure boosting system. Meet the highest demands.
Pressure boosting systems from Wilo can be used in almost any area of application. Whether in waterworks, apartment and office buildings, hotels, shopping centres, hospitals, schools, carwashes or other large buildings: Furthermore, they can pump a wide variety of fluids, and are therefore also ideal for large-scale cooling systems and industrial applications.

Depending on the supply demand, we offer pressure boosting systems with different performance values. Each consists of a number of individual pumps and a corresponding electrical control unit. All pressure boosting systems have one thing in common: They are highly compact, and very space-efficient. That makes it much easier to carry out installation and any servicing work which may be required. Wilo delivers all pressure boosting systems completely pre-assembled and ready for connection – solutions for intelligent water supplies at the highest technological level.

Wilo-ASP split-case pump. For maximum performance.
The main characteristics of split-case pumps are their high performance and low NPSH values achieved by double flow impellers and special spiral casing construction. In order to simplify maintenance, the upper part of the housing can be removed completely. This allows direct access to the revolving parts without the need to disconnect piping. Thanks to the double flow concept, the impeller is perfectly hydraulically balanced. In consequence, axial forces are reduced to a minimum which, in turn, significantly contributes to pump reliability.

Wilo-VeroNorm-NPG norm pump. The all-purpose standard series.
The NPG series is suitable for clean water in circulatory, transport and pressure boosting applications. With 2 and 4-pole motors, heads of up to 140 m and flow volumes of 3,000 m^3/h can be achieved. To facilitate maintenance, all pumps are fitted with a coupling that allows their removal without the need to disconnect either the motor or the piping. Various materials are available – for instance bronze or ductile cast iron.

Wilo-Economy/-Comfort/-Comfort-Vario

Pressure boosting systems
- All-purpose
- In all performance classes
- Excellent cost savings
- Maximum hygiene

Wilo-ASP

Split-case pump
- High flow capacities
- High performance
- Excellent reliability

Wilo-VeroNorm-NPG

Norm pump
- Simple replacement
- Easy maintenance
- Choice of different materials
- For a wide range of applications

Water supply technologies from Wilo.
In operation throughout the world.

Geothermal power station, Reykjanesskagi, Iceland.
A new power station with two 50 MW steam turbines was built in 2006 to generate electric power on the peninsular, Reykjanesskagi, south-west of the capital city Reykjavik of Iceland. The peninsular is one of the most volcanically active parts of the island. In 1969, a high temperature field of over 200°C was discovered at depths of 1,000 to 2,000 m during exploratory drilling. In 1974 the Sudurnes high-temperature thermal power plant, which also provides the region with electricity were founded. In conjunction with the Svartsengi power plant, which generates both electrical power and district heat, Reykjanes supplies the some 16,000 inhabitants of the region, the US base and Keflavik airport.

Pumps that bring water up from wells on the coast are necessary to cool the main and subsidiary turbine condensers. The water has a very high mineral content due the region's volcanic activity, so the pumps have to be made of extremely resistant material that. In extensive field tests, it was ascertained that the medium being pumped also contained highly abrasive particles such as sand and ash. The Wilo experts selected the largest series submersible motor pump, KM 3100S-1, with 250 kW electrical power and a delivery rate of 400 litres per second at a discharge head of 47 m for the application in question.

The pumps were manufactured in zinc-free bronze, a salt waterproof material, to ensure their suitability for the conditions in Reykjanesskagi, and the impellers were made of an extremely wear-resistant Duplex-material. A total of twelve pumps were installed. The use of these application-specific materials and the calculation of maximum efficiency is the basis for long-term, maintenance-free pump operation and energy cost minimisation.

- **Bulgaria**
  Replacement of substations in entire Sofia city with 142 booster sets consisting of CO3-MVIS806/CR
- **Germany**
  Exhibition Centre Hannover, pump for sprinkler system KM 1300-2s
- **Mongolia**
  Shangdu Power Plant in Inner Mongolia with 5 KM1302-5 borehole pumps
- **Moldova Republic**
  Ground water pumping station in Orhei, Soroca, Stefan Voda with 23 borehole pumps consisting of NR 630-8, NR 615-8, NR 615-4, NR 623-3, NR 630-3, NR 608-28
- **Namibia**
  Irrigation system in Etunda with 5 K146P polder pumps
- **Romania**
  Refurbishment of Martinesti in Satu Mare with 15 sets of split case, norm pumps and booster sets consisting of ASP200, NPG350/350, NP 100/250, FA08.43, FA10.51, CO-2 MHI803/ER
- **Russia**
  JSC "Kazanorgsintez" in Kazan with 29 booster sets and multistage pumps consisting of COR-6 MVI 5206/CR, COR-4 MVI 5206/CR, COR-2 MVI 5204/CR, MVI 5206, MVI 5204, MVI 3205, MVI 406, DL 80/220
- **South Africa**
  Lesotho Highland Water Project for water transfer from the Rain-laden kingdom Lesotho into South Africas dry industrial region Around Johannesburg with two pumps of type K221
- **Taiwan**
  Stadium in Taipei with 63 sets of split case and norm pumps consisting of ASP 150A, ASP 150B, ASP 200B, NPS40-250, NPS50-200, NPS50-250, NPS50-315, NPS65-200, NPS65-315 , NPS80-315, NPS125-315

Wilo-VeroNorm-NP 100/250

Standard pumps
- Installation as secondary water-pumping stage

Wilo-CO-4 MVI 5205/CR-MP-5

Pressure boosting system
- Tunnel installation as fire hydrant supply

Wilo-EMU K 85-2

Pressure shroud pump
- Horizontal installation for pressure boosting water supply

Sewage disposal with Wilo.

Increasing threats to our environment demand improved and more efficient waste management. The multitude of chemical and biological pollutants contained in household, commercial and industrial sewage presents enormous challenges to the appropriate and safe treatment of these dangerous substances.

Disposal over extreme distances – by means of pressurised drainage or large-scale pumping stations – ensures safe transportation of sewage from its origins to treatment plants where carried solids and contaminants are removed and biological treatment takes place. The right choice of pumps and systems guarantees continuous and dependable sewage disposal with the highest achievable safety standards and lowest possible costs.

Wilo-EMU FA 15.77 + FKT 27.1
Submersible sewage pump
• Vertical and horizontal installation possible
• Safe operation
• Resistant to corrosion thanks to Ceram-protection

Sewage disposal equipment from Wilo.

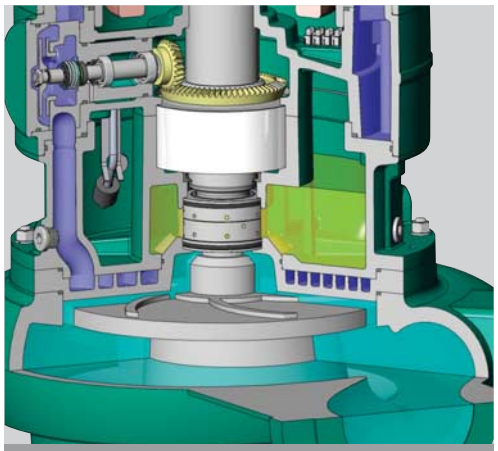
Safe transport of heavily contaminated water.

Wilo-EMU submersible sewage pump.
Highest reliability.
The numerous combinations of fluids and solids in our sewage pose widely differing demands on a pump solution. The Wilo EMU FA series offers an extensive portfolio for a wide range of applications here.
Self-cooling, dry well-installed and/or explosion-proof motors are standard today. But with regard to flexibility, Wilo is setting future-oriented standards with the new motor technology of the FKT 27.1.
The FKT 27.1 motor has an innovative, closed cooling system with a high-quality two-chamber sealing, incl. integrated monitoring equipment. It is suitable for vertical and horizontal installation and is designed for permanent operation for wet well and dry well installation.
Further advantages: The cooling is independent of the type of fluid and, in the case of dry well installation, no room ventilation is necessary – thus, the pit volume can be reduced and building costs saved.
Through the perfect combination of modern submersible motor technology, high-quality treated hydraulic components and the solvent-free ceramic coating ceram, Wilo EMU sewage pumps guarantee long-term safe operation – all the time – even for the most demanding fluids and most difficult constraints.

Ceram.
Lifelong corrosion protection.
With ceram, Wilo offers reliable protection against corrosive and abrasive fluids. This solvent-free, ceramic-based coating guarantees the perfect corrosion protection of our products. Ceram coatings are available in different versions (C0, C1, C2 and C3). For use in especially critical fluids, the individual versions can also be combined with each other. With ceram, a cost-effective alternative solution compared to special materials can also be offered.

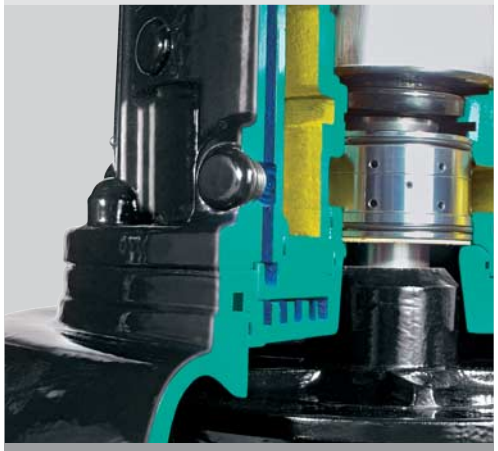
ceram protected

Wilo-EMU DN 36 bis DN 150.
For a fast reaction time.
The new pump range for Wilo EMU sewage pumps stocks pumps from DN 36 to DN 150. With this product range, we are assured to react to your demands straight away.



Wilo-EMU FKT 27.1

Motor features
- High operation safty
- Easy maintanance
- Internal closed cooling circuit



Ceram

Special ceramic coating
- Corrosion protection and increased durability against abrasion
- Belated coating possible

Wilo-EMU DN 36 bis DN 150

Stock pump program
- High-quality manufacture
- Versatile applications
- Fast availability

Wilo-EMUPORT
Solid separation system
• Economical
• Reliable
• Easy maintanance

Sewage disposal equipment from Wilo.

Safe transport of heavily contaminated water.

Sewage technology: state of the art.
Wilo provides individual solutions for all sewage disposal demands. From a technological viewpoint, completely prefabricated pumping stations with Wilo-EMUPORT solids separation systems are the best choice for draining entire localities or larger industrial and commercial complexes using conventional free-flow canalisation. This innovative Wilo technology separates the solids from sewage and guides it into separate solids separation tanks. Only prepurified sewage is now able to continue through the pump into the large, combined collection tank. Wilo pumping stations can be reconfigured to meet individual demands on their processing and performance functions.

Economical:
due to their small ball passage.
Since only prepurified sewage without coarse solids flows through the pump hydraulics, the free ball passage of the pumps can be designed considerably smaller than conventional ones, so that the pumps attain significantly higher efficiency. This leads to significant savings on energy and thus on operating costs.

Reliable:
due to low risk of obstruction.
The collection tank retains the solids. This prevents obstruction as well as increasing reliability and operating safety. Since the inside of the pump is protected from contact with coarse solids, its service life is also clearly prolonged. The result: fewer breakdowns and less servicing, and much more efficient operation.

Easy-maintenance:
due to dry sump installation.
Sewage and solids remain in the system. The pumps are thus always dry and clean. This makes maintenance much more pleasant, hygienic and efficient – all of the mechanical components can be accessed quickly and easily from the outside.

Wilo-EMU WS/Wilo-Drain MTS pumping station.
No chance for solids and offensive odours.
The Wilo-Drain MTS 40/27 submersible pump is constructed with a patented stainless-steel macerator that effectively reduces solids to an easily transported medium that can be passed through the smallest diameter pipes, offering an ideal solution for pressure drainage over long distances. The corrosion-resistant stainless-steel casing, longitudinal watertight cable feed and the rugged motor cable guarantee a long lifespan – even in the toughest conditions. The same applies to pumping stations made of HDPE, which require only minimum installation work and which are economical to run, thanks to their corrosion-free materials and lightweight construction. The internal rotor of the pump keeps the pump sump clear and reduces solids in suspension to an absolute minimum. Offensive odours and blockages – caused by solids – are no longer a problem.

Wilo-EMUPORT

Prefabricated pumping station
- Lower energy and operating costs
- HDPE materials ensure long lifespan
- Continuous operation

Wilo-DrainLift WS 900/1100

Ready-to-connect pumping station
- Time and cost-saving installation
- Hemispherical construction ensures deposit-free collection chamber

Wilo-Drain MTS 40/27

Submersible pump
- Patented macerator
- High performance, low operating costs
- Unsusceptile to clogging and blockaging

Sewage disposal equipment from Wilo.
In operation throughout the world.

Pernis, Rotterdam, Niederlande
The biggest oil refinery in Europe near Pernis, west of Rotterdam emits around 6 million tons of carbon dioxide every year. Some of the gas is now recovered and pumped into a former oil pipeline that runs through 85 kilometres of greenhouse landscapes from southern Holland to Amsterdam as part of the OCAP project (Organic Carbon Dioxide for Assimilation of Plants). Greenhouse gas is used to promote plant growth. By end of 2006 a distribution network enabled the supply of carbon dioxide to over 500 market gardens. In the final stage, up to 1,400 customers will be supplied with CO^2. 170,000 tons of the greenhouse gas will then be pumped through the pipeline every year. That corresponds to a saving of 95 million square metres of natural gas, which would otherwise have been burned in the market gardens' furnaces to fertilise the plants.

Wilo submersible motor pumps and glanded pumps were used to cool the four big compressors that compress the CO^2 in the system and transport it via the pipeline and distribution stations to the consumers. Three efficient Wilo-EMU FA 35.54Z with a flow head of 25 meters transport hourly 750 cubic meters of the necessary cooling water from the Oude Maas river through the heat exchanger and then pump it back into the river. The submersible motor pumps are cast and made of high-quality materials as they have duplex shaft ends and a special Ceram C0 ceramic coating plus a separation chamber with a double seal. These pumps are built for reliable operation in brackish water. Furthermore four single-stage, non self-priming, glanded type VeroNorm NP pumps with a delivery rate of 340 cubic metres per hour provide closed circuit cooling between the heat exchanger and compressor.

- **China**
  Sewage treatment plant in Wuhan with 16 pumps, series FA 60.83 and KPR 500-6
- **Germany**
  Pumping station in Leun with 5 pumps, types FA 50.21, FA 15.44 and FA 10.51
- **France**
  4 EMUPORTS – prefabricated pumping station with solids-separating system in Diane Capelle
- **Greece**
  Pumping stations in Nea Peramos, Kavala with 18 pumps, types FA 10.78, FA 10.33 and FA 15.77
- **Ireland**
  Pumping station in Curragh with 10 pumps, types FA 10.68 and FA 10.78
- **Poland**
  High-pressure sewage pipe in Wielka Wies close to Cracow with 210 plants: Pumping stations with pumps, types WS 900 and MTS 40/27 and control equipment
- **Czech Republic**
  EMUPORT FS 2000 – prefabricated pumping station with solids-separating system in České Budejovice
- **Romania**
  Modernisation of the Calafat sewage treatment plant (rainwater tank) with 3 pumps, type FA 50.21
- **Russia**
  Reconstruction of sewage disposal stations in Krasnodar with 11 pumps, types FA 40.75, FA 50.21, FA 25.93, FA 10.94 and FA 10.62
- **Taiwan**
  Science Park project in Taichung with 4 pumps, types FA 30.93, FA 50.98 and FA 08.52
- **Turkey**
  Pumping station in Istanbul with 3 pumps, type FA 50.98
- **USA**
  Sewage treatment plant in McAlpine Creek with 23 pumps, types FA 50.98, FA 50.21, FA 40.75 and FA 15.52

Wilo-EMU FA 50.21

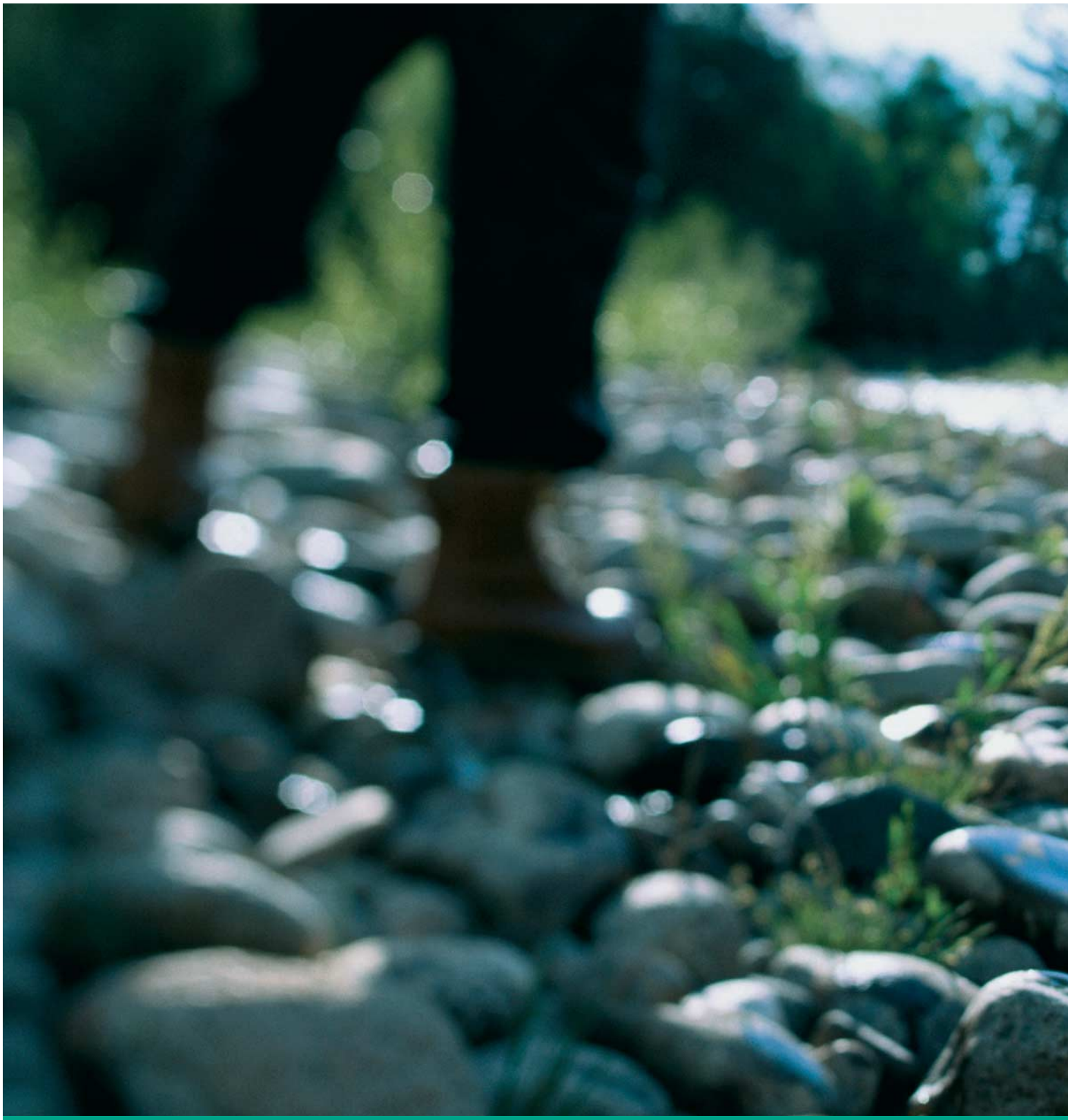
Submersible sewage pump
- Dry well installation

Wilo-EMU FA 25.93

Submersible sewage pump
- Dry well installation

Wilo-EMU FA 60.83

Submersible sewage pump with Ceram coating
- Installation in storm water retaining basin



Sewage treatment with Wilo.

In sewage treatment plants, the harmful components of household, commercial and industrial sewage are removed. A long and cost-intensive process is necessary in order to treat sewage in such a way that the resulting water can be fed back to the water supply cycle without any concerns. The authorities responsible for the process constantly face financial pressures, local regulations and laws. Sewage treatment plays an increasingly important role in the conservation of water resources. Continuous challenges, such as increasing solids content in sewage – which negatively influences the operational conditions for plants and installations – demand new and innovative solutions to enable the improvement of processes and of process-relevant products.

Wilo-EMU Megaprop TR 326
Submersible Mixer
• High thrust
• Low energy consumption
• Safe operation

Sewage treatment plant equipment from Wilo.

Perfect recycling of water resources.

Wilo EMU submersible mixers.
Enormous energy savings.
Saving energy is one of the most important topics of our time. With the new generation of Wilo-EMU Maxi- and Megaprop submersible mixers, Wilo offers high efficiency in the area of sewage treatment plant technology. Thanks to new innovative blade geometry and our well-established dimensioning know-how, up to 10% energy savings are possible.

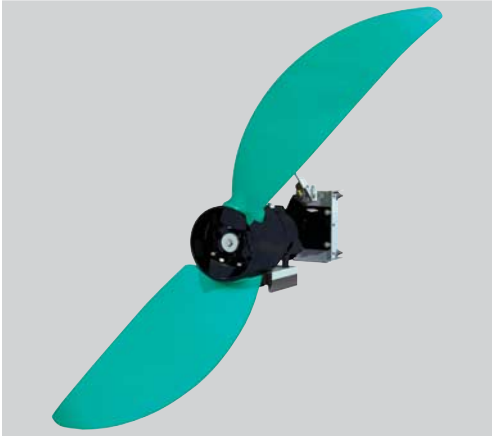
Cost and energy savings potential for slow-running mixers.
Slow-running mixers are mainly used in the activated-sludge tanks of municipal water treatment systems. Because these units often work in permanent operation over 24 hours/day, specific dimensioning and correct positioning are decisive. The objective of every mixer configuration is to achieve an optimum mixing result with a minimum amount of energy. Besides having the exact knowledge of the basin geometry, fluid properties, amounts of air, etc., the characteristic values of the used unit must also be known, such as the thrust force and input electric power at the duty point, in order to be able to exactly design the mixer for the respective mixing task. The most important characteristic value for judging an efficient mixer is the thrust power ratio.

Thrust power ratio.
The power ratio factor is defined based on the standard ISO 21630. It is a generally valid characteristic value indicating the efficiency of the submersible mixer. The highest performance factors are achieved with slow-running mixers. Due to the large propeller diameter and the low propeller speeds, extremely high thrust values are possible with low power consumption.

Wilo-EMU Megaprop.
Our Megaprop submersible mixers minimise the energy requirement with highly efficient, three-blade propellers and a two-stage planetary gear. The low propeller blade load compared to the otherwise common two-bladed mixers benefits with smoother operation and increased service life of the wear components. In addition, thanks to the blades which are specially curved backwards, a self-cleaning effect on the propeller is achieved. Therefore, even when there are long-fibre constituents in the mixed fluid, high reliability is guaranteed.

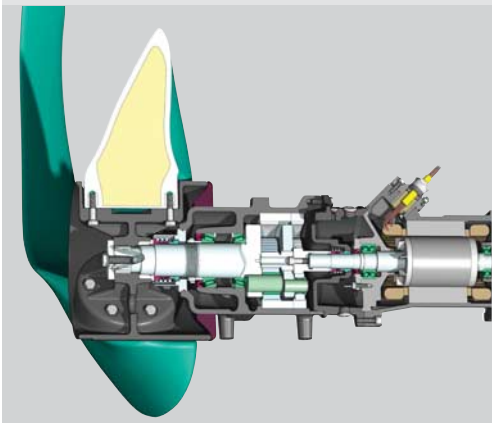
Wilo-EMU Megaprop TR 326

Submersible mixer
- Optimum configuration for almost every application
- Low power consumption
- Easy installation by means of a support lowering device



Wilo-EMU Maxiprop TR 226

Optimum thrust values
- Innovative blade geometry
- Special single-piece laminate production



Wilo-EMU Megaprop TR 326

As standard
- Two-stage planetary gear
- Corrosion-resistant, seawater-proof drive shaft

Wilo-EMU Uniprop TR90-2
Submersible Mixer
• Low energy consumption
• Safe operation
• Patented Helix center – self-cleaning

Sewage treatment plant equipment from Wilo.

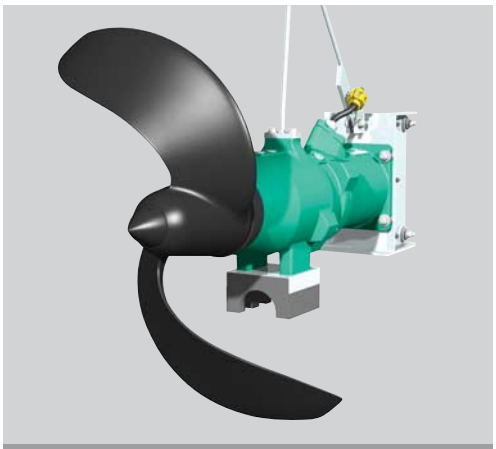
Perfect recycling of water resources.

Wilo-EMU submersible mixers. Powerful and compact.
Our fast-running Miniprop and moderately-fast-running Uniprop submersible mixers offer top performance in a minimum amount of space. Due to their compact dimensions, they are also suitable for narrow installation openings, such as in pump sumps or for later installation in building constructions. Thanks to the small propeller diameter, installation at the bottom of the basin is possible, which allows operation even at a low water level. For special applications in pump shafts, submersible mixers can be installed on the basin wall or ceiling via a flexible pipe bracket.

Wilo-EMU Uniprop TR 90-2 submersible mixer. The connecting link.
Many treatment processes require efficient, reliable and versatile equipment, such as the Wilo-EMU Uniprop TR 90-2. This mixer is the connecting link between permanent operation in an activated-sludge tank for generating an optimum flow at a low energy supply – and applications in sludge storage tanks with a higher solid content. Our modular system with an extensive selection of motors of various performance classes, high-quality gears and different propellers allows adaptation to nearly any field of application.

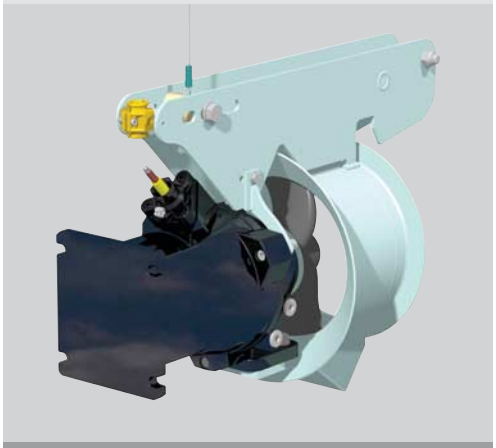
Wilo EMU RZP 25-2 recirculation pump. Even more capacity.
From the biological denitrification tank to the "giant slide" in amusement parks, recirculation pumps from Wilo are being used in a very wide range of applications for pumping pure water, raw water, secondary hot water and cooling water. Everywhere where large volumes of water with small heads are pumped. Therefore, the RZP program contains a powerful pump type for every specification. In addition to capacity, the focus is on efficiency. The compact construction of the recirculation pump leads to considerable savings in energy, installation and maintenance costs.
In the case of our RZP 25-2, the flow housing and propeller position were additionally optimised so that the efficiency could be increased to up to 20%. The technical configuration and the large selection of accessories guarantee maximum installation flexibility: horizontal as well as vertical.

Wilo-EMU FA 08.25 WR grit collector pump. For large amounts of solids.
The more difficult demands for removing solid deposits require many years of experience and a precise definition of the materials and construction of the pump. Practical experience has shown that a mixer head fastened directly to the impeller can more effectively remove large amounts of solids in a short amount of time. Reduced pumping time and longer cleaning intervals guarantee reliable and smooth operation here.



Wilo-EMU Uniprop TR 90-2

Submersible mixer
- Customised for almost every field of application
- Low power consumption
- Constant operation



Wilo-EMU RZP 25-2

Recirculation pump
- High degree of efficiency
- Demand-oriented solution
- Either plastic or stainless steel propeller

Wilo-EMU FA 08.52 WR

Grit collector pump
- Reliable operation
- High reliability

Sewage treatment plant equipment from Wilo.
In operation throughout the world.

R.M. Clayton sewage treatment plant, Atlanta, USA.
Considerable savings in energy costs and equipment.
In 1997 Wilo provided a Wilo-EMU Uniprop TR 60-2 mixer free of charge for evaluation purposes in a sewage treatment plant. After operating for a whole year, the mixer was removed, dismantled and presented to the plant operators and representatives of the municipal authorities. Although the mixer had not been serviced during the entire period, it revealed no signs of wear at all. Everyone was suitably impressed. The system from Wilo had provided better performance – with significantly lower power consumption.

In consequence, Wilo installed two mixers during the initial expansion phase in 1998/1999. As a result of the faultless performance of these two systems, the company was also awarded the contract for phase two of the expansion in 1999/2000, which was at the time the most significant use of Wilo mixers in the USA. The old R.M. Clayton sewage treatment plant was eventually entirely replaced with 134 Wilo-EMU Uniprop TR 22.174 and TR 60-2 mixers. These were installed in lines with mixed media in treatment stages one and two and, for the first time, for nutrients disposal.

- **Belgium**
  Sewage treatment plant in Grimbergen with 17 mixers, types TR 36, TR 50 and TR 215
- **China**
  Sewage treatment plant in Wuhan Shahu with 28 mixers, types TR 221, RZP 60
- **China**
  Sewage treatment plant in Wuhan Hanxi with 52 mixers, types RZP 80, TR 221, TR 220 and TR 50
- **Czech Republic**
  Sewage treatment plant in Hradec Králové with 45 pumps and mixers, types FA 10.62, FA 15.95, FA 25.32, FA 25.93, FA 35.54, FA 84-198, FA 104-223, FA 251-278, RZP 25.145 and TR 250
- **Germany**
  Sewage treatment plant in Bottrop with 54 mixers, type TR 320
- **Hungary**
  Sewage treatment plant in Pécs with 8 mixers, types TR 250 and TR 22
- **Ireland**
  Sewage treatment plant in Claremorris with 5 mixers, type TR 36
- **Poland**
  Sewage treatment plant in Lublin with 66 mixers, types TR 215, TR 220 and RZP 80
- **Romania**
  Sewage treatment plant in Arad with 19 mixers, types TR 221 and RZP 80
- **Serbia**
  Sewage treatment plant in Senta with 2 mixers, type TR 220
- **Slovakia**
  Sewage treatment plant in Rakúsy, Zborov, with 10 pumps and mixers, types FA 08.43, FA 03.15, KS 14 and TR 21
- **Taiwan**
  Sewage treatment plant in Bing-dong with 11 pumps and mixers, types KPR 340 and TR 50
- **Turkey**
  Sewage treatment plant for Silivri Prison, Istanbul with 14 pumps and mixers, type FA 10.51, TR 215 and TR 50
- **USA**
  Sewage treatment plant in Las Vegas with 44 mixers, types RZP 50, TR 60 and TR 320

Wilo-EMU SR 150

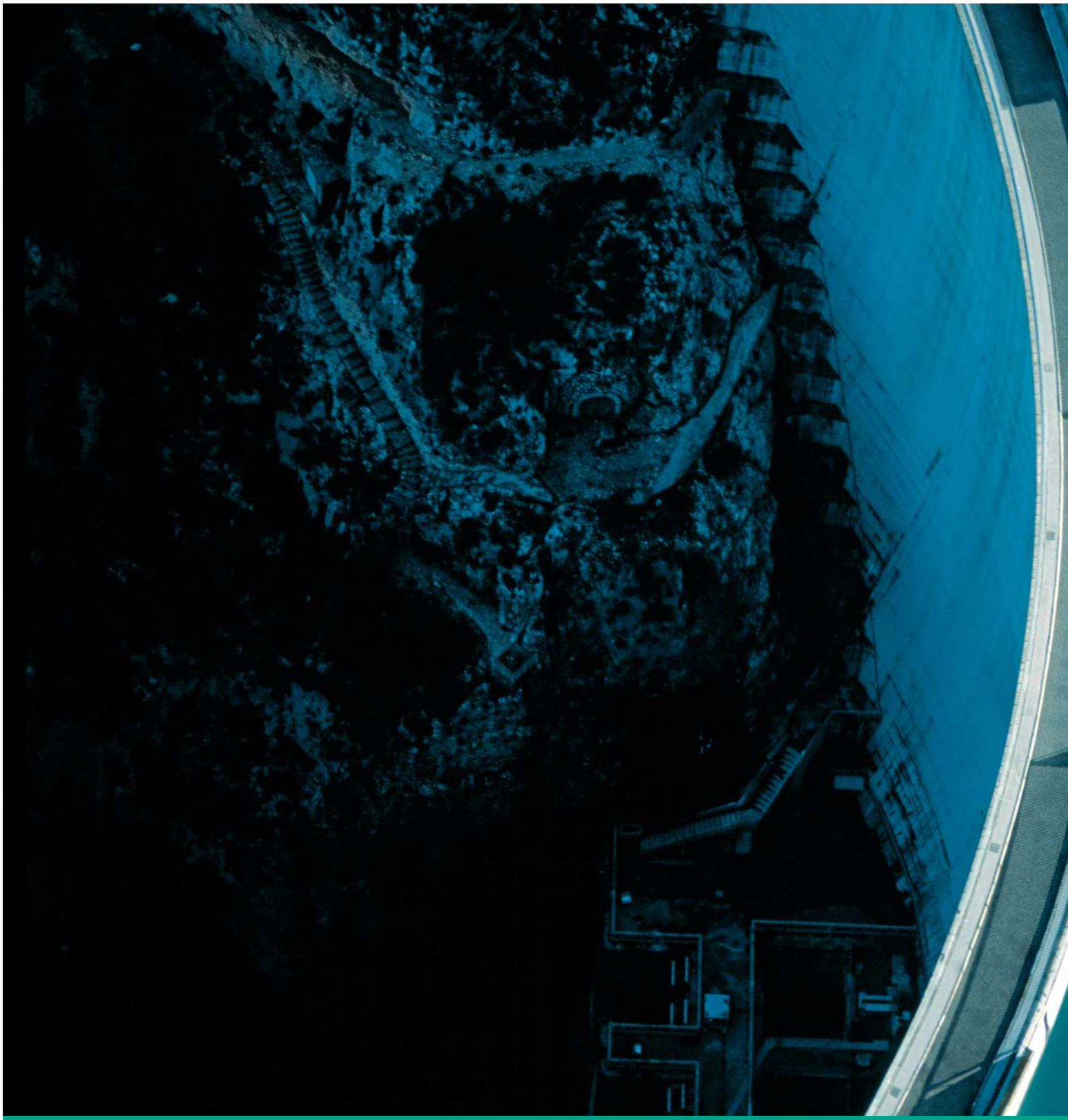
Jet cleaning device
- Installation in rainwater catchment basin

Wilo-EMU Uniprop TR 80-1

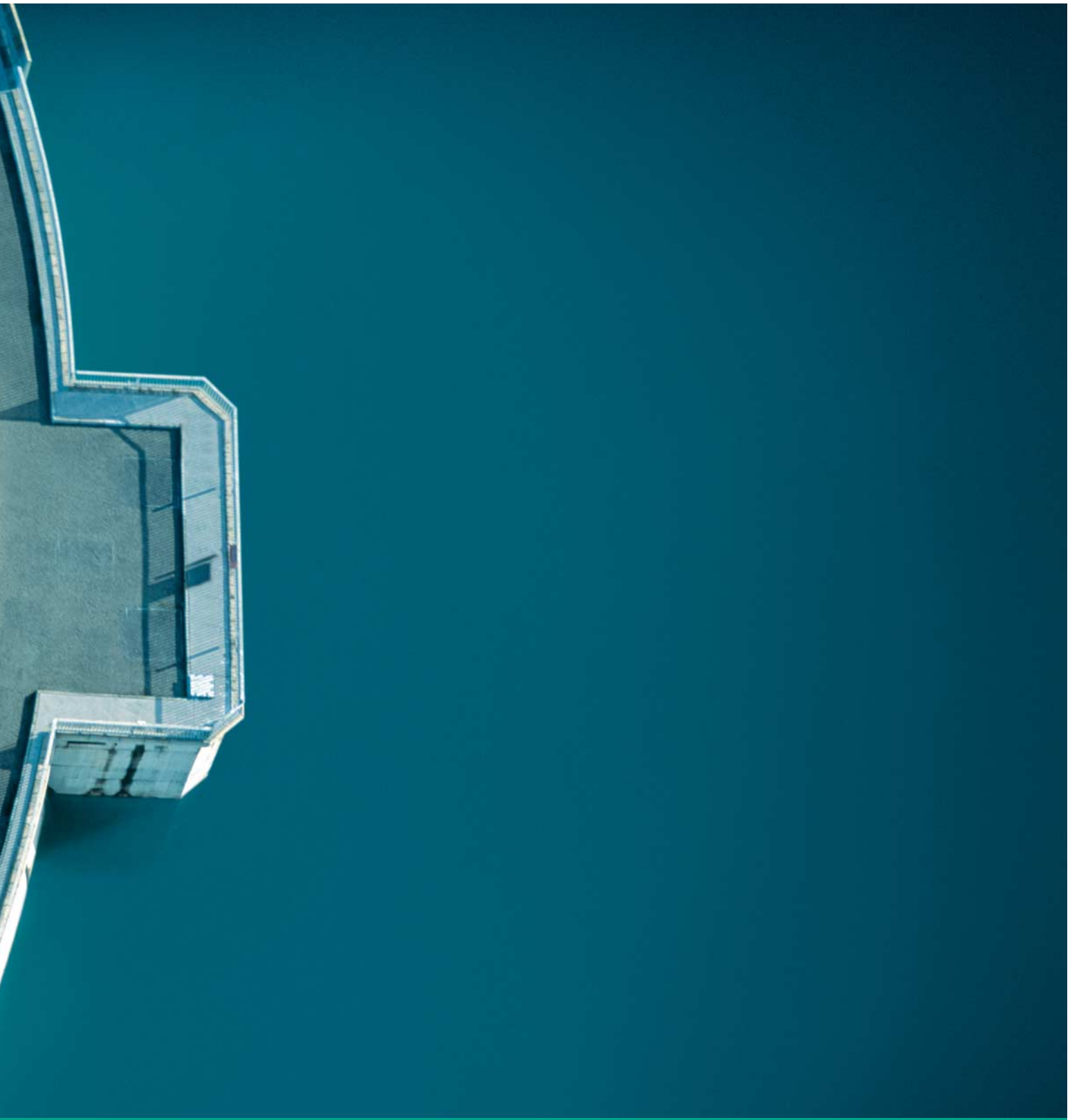
Mixer with Ceram coating
- Installation in active sludge basin

Wilo-EMU Maxiprop TR 215

Slow running mixer
- Installation in denitrification and Bio-P basins



Intelligent control with Wilo.



In today's fast-moving world, implementing sound management decisions requires fast and simple access to precise information. In all fields where pumping systems are used, the operation of the various components is supported by intelligent control systems. These allow remote control, as well as the communication of comprehensive system data over immense distances. This becomes essential when taking the often distant locations of many pumps into account. In this manner, system performance monitoring and maintenance planning can be significantly improved. The resulting increase in efficiency is not only achieved by improved operation of the individual components, but above all by optimum control over the integrated system as a whole.

Wilo-EMU control system
Tailor-made control unit
• For all requirements
• Precise remote control
• Safe and efficient operations

Electronics from Wilo.
Everything under control.

Wilo-EMU control systems.
Custom-built control units.
The tailor-made control units from Wilo provide an enormous variety of options for control, monitoring, communication and diagnosis at an extremely high technological level and with the highest possible safety and efficiency factors. These can be configured for the most diverse demands: beginning with small-scale basic requirements and continuing up to vibration controllers, inverters and remote communication systems. The display of appropriate data such as malfunction reports or current pressure status, as well as remote control and data transmission via GSM, GPRS, radio or the Internet, is particularly important. The tried-and-tested Red Button Technology guarantees optimum operability. With only one hand, it is possible to access all significant system data and carry out adjustments to individual components or the entire system. In short, Wilo offers the latest technologies for the best system solutions.

Wilo-CC-System.
Systematic versatility.
The intelligent control unit, Wilo-CC-System, is convincing in its enormous flexibility and a multitude of different functions that noticeably optimise both installation and operations. The user-friendly touchscreen display provides outstanding simplicity with its clearly structured menu navigation for control and configuration during system initiation, as well as also displaying intelligent malfunction diagnosis. All data for adjustments, modifications or upgrades are electronically communicated to the building management system.

Wilo-VR-System.
Systematic precision.
Extreme control precision is the characteristic feature of Wilo-VR-System. Thanks to seamless coordination between all pumps in a system, pressure surges in water piping are effectively prevented. Moreover, the pressure is maintained at a constant level even during fast changes in the flow rate. All functions are visible on the LCD screen. Five additional LCD warning lights indicate specific system malfunctions.

Wilo-EC-System.
Systematic reliability.
The most outstanding features of the Wilo-EC-System are its convenience and safety. This control unit is constructed from polycarbonates, ingress protection coded IP 65, and controls sewage pumps by means of a floating switch.

Wilo-CC-System

Control unit
- Extremely flexible with versatile features
- Secure data transmission
- Sophisticated remote transmission

Wilo-VR-System

Control unit
- Extremely precise control
- Guaranteed constant pressure
- Simple operation with Red Button Technology

Wilo-EC-System

Control unit
- Easy to use
- Extremely reliable
- Multifunction unit


DigiCon-A
0-10V
disable
0-10V
disable
WILO
set point
100%
0%
WILO
0-10V
off
max
min
on
24V
ssm
ebm-ma
ebm-sl
Baud
data out
mode
WILO
Alarm Modem 56k
service
power
process
line
data out

Electronics from Wilo.
In operation throughout the world.

Bucharest, Romania.
Highly sophisticated remote control and monitoring.
One of the greatest challenges in Romania was the modernisation of a 40 year-old municipal heating network run by the regional heating provider RADET. With close to 600,000 apartments for almost 1.3 million residents, 5,400 public buildings, as well as 100 hectares of greenhousing, this is one of the largest networks in Europe. During the tendering phase, the RADET management particularly emphasised the installation of modern communication systems for remote control and monitoring, in addition to pumping performance and the entire lifecycle investment concept. Thanks to their cutting-edge technologies and expertise in the construction of state-of-the art centralised control systems, Wilo eventually won the 4.2 million euro contract.

As part of this project, Wilo will supply 2,000 electronic pumps for the supply of water and heat along with the electronic communication systems for pumping control and monitoring. Wilo "intelligent" pumps are suitable for integration into various bus systems, interfaces and protocols, for instance in the Modbus protocol preferred by RADET. The Modbus technology allows a bidirectional communication between pumping stations and substations. Immediate access to extensive data relating to pressures and other factors relevant to maintenance is possible at any time. In the case of a system malfunction, pumps report the malfunction type and allow the system administrator/operator to initiate appropriate remedial action.

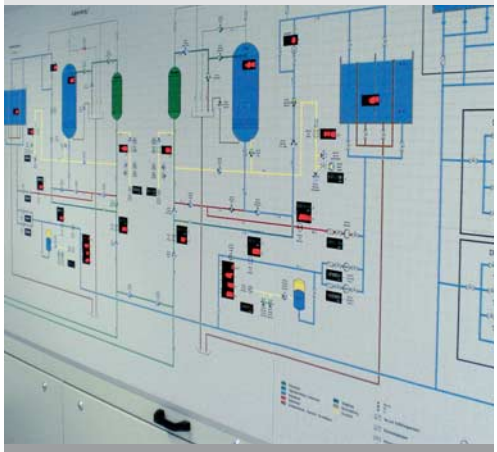
- **Belarus**
  Sewage treatment plant in Brest with 3 pumps, type FA 35.54, automatically regulated for base and peak demand
- **Czech Republic**
  Pumping station for sewage inflow in Hradec Králové, with remote control system for 9 pumps, types FA 30 and FA 50 – special motor protection with high-speed switching
- **Estonia**
  Sewage treatment plant in Kohtla-Jarve with 2 electronically controlled axial machines, types KPR 500-12
- **Germany**
  Water purification plant in Wenzenbach with 7 pumps, types 86-4, K 85-3, KD 25-8 and K 126S-2, and custom built remote control system with PLC (Programmable Logic Controller)
- **Georgia**
  Reconstruction of a water supply facility in Tbilisi with 2 split-case pumps, type ASP 150, automatically controlled for base and peak demand: with frequency converter and modem
- **Kazakhstan**
  Sewage treatment plant in Astana with 9 pumps, type FA 25.93, controlled by 2 custom built control boards for pumping operations with automatic level monitoring and optional communications system
- **Poland**
  High-pressure sewage pipes in Tczow – 140 pumping stations, type WS 900 with MTS 40/27 pumps, and control units for performance analysis and control of each individual pumping station
- **Serbia**
  Sewage treatment plant in Gornji Milanovac with 5 pumps, types FA 05.32 and FA 05.11, and 3 control units for performance analysis and control of each individual pump

Custom-built control unit

Pumping station control system
• Installation in sewage treatment plant

Wilo-CC-Drain

Control unit
• Part of the tailor-made control system

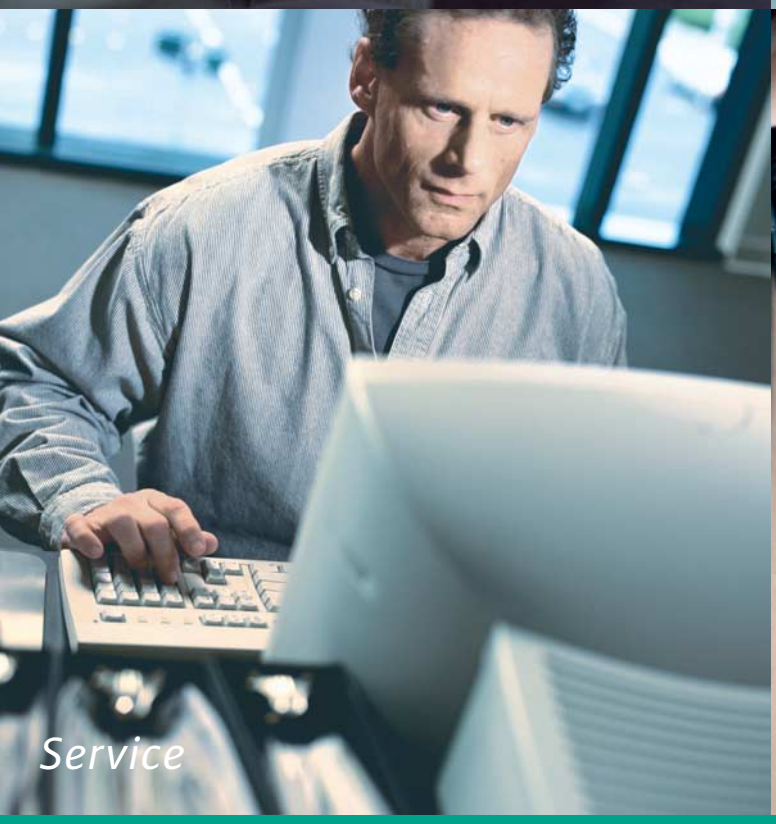


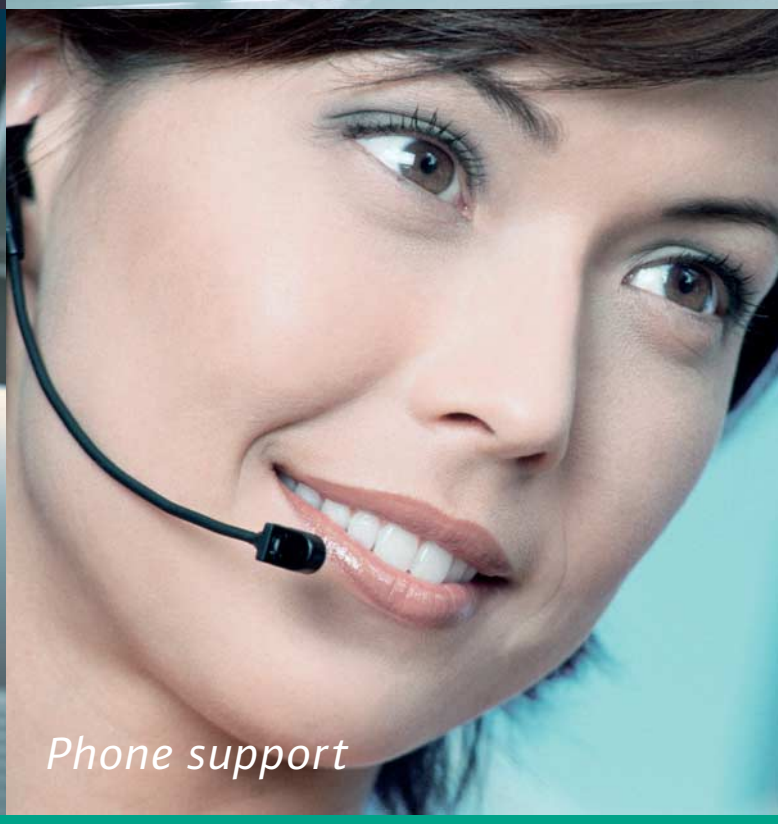
Individual control system

Control system display
• Operating and malfunction reports

Optimum support.

Wilo Support					
	PreSales	Catalogues	Wilo-EMU-Select	Seminars	Personal contact
	AfterSales	Start-up	Maintenance service	Service	Phone support





Customer service begins with the precise determination of our customers' requirements in a personal discussion. On the basis of the results, our specialists subsequently develop custom solutions to match any requirements. When fundamental planning data, flow volumes and heads are known, our special software package, Wilo-EMU-Select determines the optimum pump for the purpose. With the help of specially developed software, we are able to simulate the flow in impellers, parts, intake structures and pressure pipes. The configuration of machine technologies can also be determined under consideration of all essential process parameters relevant for sewage treatment plants. Installation and complete connection work for our pumps are carried out by highly qualified engineers with extensive experience in plant construction. Even after the completion of your project, we are always there to assist you with fast and dependable maintenance and repairs, guaranteed availability and provision of spares and replacements at short notice.

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Pumpen Intelligenz.

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