

OPTIMISED WATER SOLUTIONS

Pumps and systems for today's water
supply and wastewater challenges





WE HAVE SAVED THE WORLD 1.8 BILLION KWH*

* Grundfos Sustainability Report 2012.

This figure represents the global energy savings generated by all Grundfos A-labelled pumps sold between 2005 and 2012. The estimate is based on the actual sales figures for the year and assumptions about which previous models the sold pumps replace. The figure is calculated as energy savings in kWh a year.

Every year, new Grundfos products increase **energy savings by 300 millions kWh**. As we introduce high efficiency motors into more and more of our products and integrate these with a wider focus on electrical, mechanical and of course hydraulic efficiency, this figure will rise and the cumulative effect of **energy savings will increase**, year on year.

Meeting challenges head-on

Grundfos develops and implements technologies that meet the challenges facing the water supply and wastewater industry. Owners are experiencing rising energy costs and increasing green taxation, and CO₂ emissions need to be reduced. Pressure is on the industry to lower operating costs for Water Utility business and strengthen the search for optimised water solutions.

Pumps account for no less than 10% of the world's electricity consumption, so it's essential that pump systems are optimised to their full potential. The long-standing experience that Grundfos has with energy optimisation specifically for pumps is a unique asset.

Optimised water solutions

We design lifecycle costs into solutions to make life easier for everyone. Grundfos Water Utility is a full-range supplier and all elements of our pump systems embrace a high degree of modularity. If you are looking for energy-efficient, intelligent solutions and worry-free processes, we offer products and services that can be tailored and optimised for any given water utility application using tried and tested technology, without compromising their superior performance. We optimise pump systems to provide maximum reliability and resource efficiency – and our expertise is part of any delivery.

Meet the
energy challenge
NOW
www.grundfos.com/energy

Meet the Energy Challenge

A Grundfos solution can make an immediate and substantial difference in the fight to reduce global electricity consumption.
Learn more at www.grundfos.com/energy

OPTIMISING LIFECYCLE COSTS AND BUILDING RESOURCE EFFICIENCY

At Grundfos, resource efficiency starts with the pump. We lower product lifecycle costs, ensure sustainable water management and build optimised equipment into the application. The measures we take for resource efficiency are from the outset designed for pumps and pump systems only, ensuring high reliability, continuous operation and superior performance.

We need to reduce costs without compromising the reliability demanded of critical water supply and wastewater operations. From new installations to refurbishment and replacement of vital components, optimising resource efficiency has a positive impact on the reliability, overall performance and lifecycle costs of water supply and wastewater operations.

Service products that add value

Grundfos is not only there for you in the unlikely event that something goes wrong. We can also offer you a long list of services that add a little bit extra to your business. We keep pace with your expectations and listen to what you have to say.

We deliver repair and maintenance solutions that simplify repair and rectify problems quickly and professionally. Remote monitoring solutions enable 24/7 management of pump installations, making preventative maintenance possible.

Our service solutions help reduce energy consumption and your carbon footprint, and we will even help you dispose of old pump equipment. Our focus is global, and so is our service organisation, ensuring a local partnership wherever your pump installation may be.

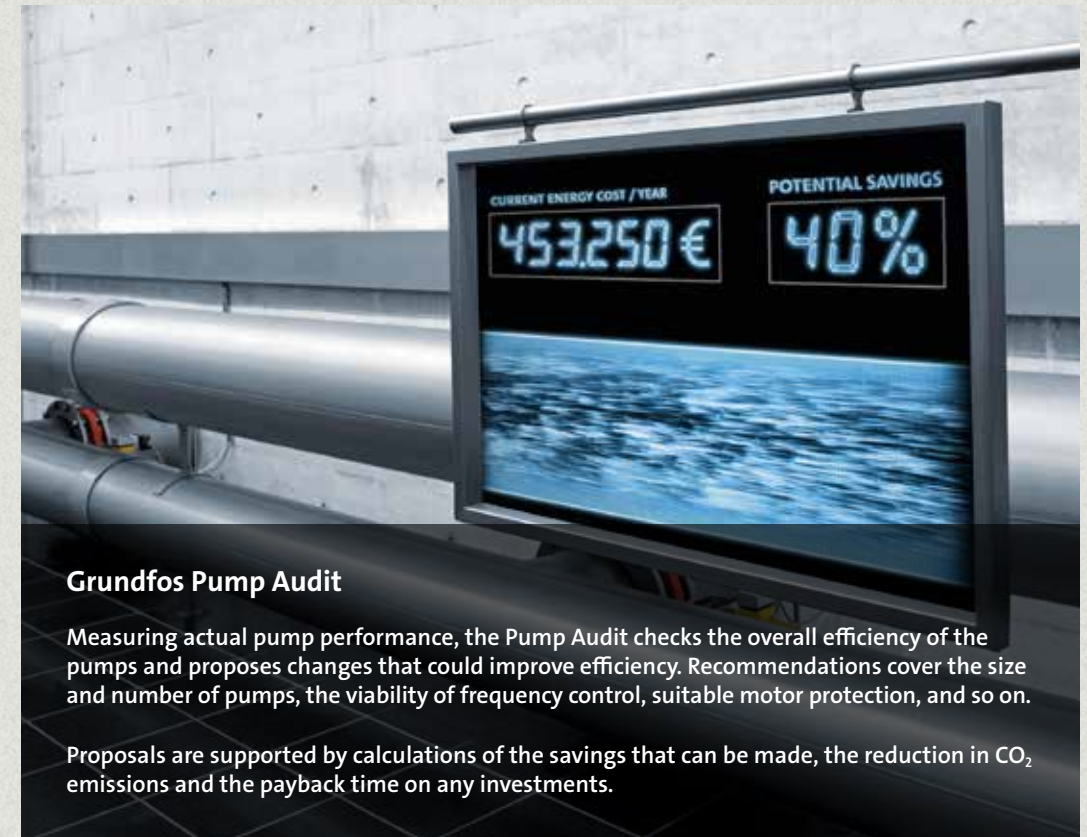


Calculating lifecycle costs (LCC)

We use LCC calculations to show the benefits of a fully optimised pump solution, from the design phase to disposal at the end of the product life.

When used as a comparison tool between possible design and refurbishment alternatives, the LCC process will show the most cost-effective solution and payback time based on the available data. LCC calculations are freely available as part of our online selection and design program, WebCAPS.

Visit www.grundfos.com for more information



Grundfos Pump Audit

Measuring actual pump performance, the Pump Audit checks the overall efficiency of the pumps and proposes changes that could improve efficiency. Recommendations cover the size and number of pumps, the viability of frequency control, suitable motor protection, and so on.

Proposals are supported by calculations of the savings that can be made, the reduction in CO₂ emissions and the payback time on any investments.



Refurbishment optimises performance

Pumping station refurbishment is a source of cost reductions and energy savings. Failure to refurbish in time could result in excessive costs from using too much energy, the increasing risk of breakage in the system, and health and environmental hazards to the community, the environment, to workers and end-users. Grundfos minimises the impact on the safe and reliable operation throughout the refurbishment period.

REDUCING YOUR LEAD TIMES AND SECURING YOUR PROJECT

Grundfos invests substantially more money in research and technology development than any other pump company and our innovative efforts result in optimised solutions for the customer.

Advanced solution tools for designing and validating system designs, worldwide test facilities geared to the precise applications for which our pump systems are manufactured, and a global focus on procurement, manufacturing, and distribution all contribute to delivery of your optimised water solution – on time and within budget.

Project management and supply chain

We are focused on where to produce and where to stock to ensure the highest flexibility, the best possible lead times and that your operations are constantly optimised. We manage

the entire Supply Chain and ensure alignment to your needs, matching our sales and consultancy activities, including complex Project Sales and Engineer-to-Order (ETO) pumps, to fit with your business.

If a pump or any equipment requires replacement, then this must be done in the shortest possible time to reduce costly downtime. Our global logistics and distribution setup ensure rapid supply and installation of pumps and equipment, whether for a single pump replacement or a full system refurbishment.

New projects and major refurbishments often require products that require customisation at the factory or delivery outside the usual distribution channels. We are a trusted partner for consultants, contractors and water utilities who are looking for security, flexibility and reliability for their water utility solution from a full-line supplier.

Product quality from worldwide testing

We guarantee unsurpassed product quality using stress, vibration, product lifetime, witness and environmental impact testing to meet or even surpass international standards. We also conduct performance tests tailored to your requirements, with certified test equipment.

Project execution an area of expertise

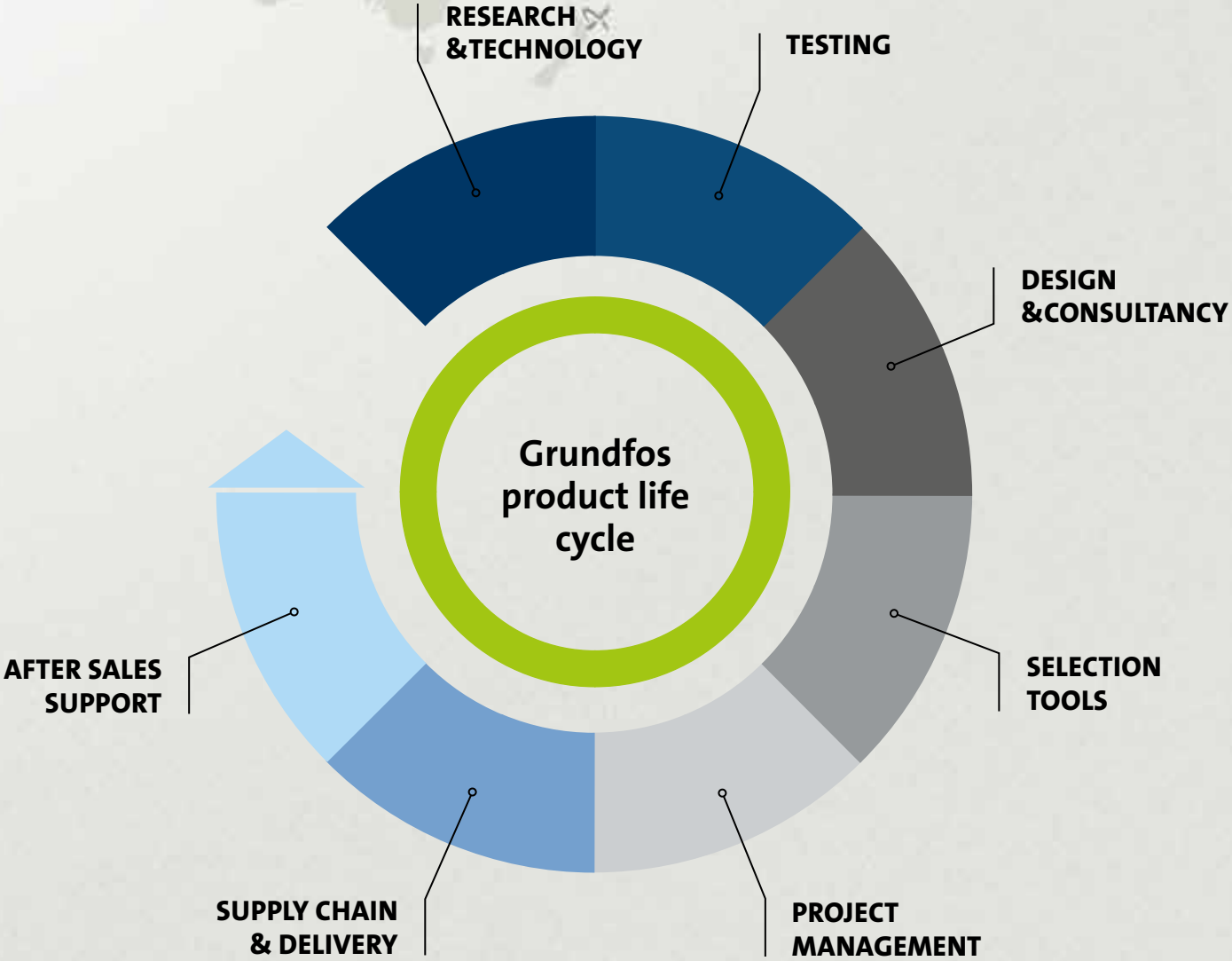
Grundfos has established a global Water Utility competency network, to ensure that complex projects get the expertise they require. In direct cooperation with market clusters around the world, one of the key functions of our competency network is to provide an optimised project execution, ensuring deliveries at all stages of the project are timely, correct and within budget.

Spare parts availability worldwide

Our global supply chain network includes dedicated warehouses for spare parts and after market products to ensure fast and efficient supply.

WebCAPS – your online resource

WebCAPS is your free library for technical information, literature and tools, including manuals, CAD drawings, service instructions and videos, spare parts, and effective sizing tools.



OPTIMISED SOLUTIONS FOR THE ENTIRE WATER CYCLE

OPTIMISED SOLUTIONS AND SERVICES THAT ARE MADE FOR EACH OTHER COMPLEMENT AN UNRIVALLED FOCUS ON RESOURCE EFFICIENCY, DESIGN VERIFICATION, AND PROJECT CONSULTANCY AND EXECUTION. THAT IS WHAT YOU GET FROM GRUNDFOS, A FULL-LINE SUPPLIER OF PRODUCTS AND SOLUTIONS FOR ALL WATER UTILITY APPLICATIONS.

RAW WATER INTAKE



DRINKING WATER TREATMENT



WATER DISTRIBUTION



WASTEWATER TRANSPORT & FLOOD CONTROL



WASTEWATER TREATMENT



Optimise, treat and pressure manage your water supply

From the raw water intake to the treatment regime and onwards through the distribution network to the end user, a water supply system must be fully integrated. Resource efficiency requires that the pumps, controls, dosing and disinfection solutions and pressure management regime are made for each other. Grundfos does precisely that.

Reliability and modularity for optimised wastewater handling

Collecting, transporting and treating wastewater is about keeping reliability high. Grundfos products and solutions for wastewater transport, flood control and the wastewater treatment plant build on operational reliability, energy efficiency through optimised pump systems and modular solutions.

ENSURING STABLE WATER SUPPLY

Sourcing raw water is the first step in any water supply system. Our cost effective, reliable and energy optimised raw water pumping solutions go further than most to bring water to life in a manner that is financially and environmentally sustainable.

In addition to pumps and pump systems optimised for performance and reliability, we supply the tools you need to guarantee the highest possible energy efficiency. We carry out energy audits at the water source, giving you the facts and figures you require to optimise your system for top efficiency and reliable operation.

As a full-line supplier with unsurpassed experience with groundwater, we have a proven track record of applying our extensive knowledge to all water sources and the entire water supply network.

Getting raw water moving

At Grundfos, we have decades of experience manufacturing pumps and motors and developing controller and monitoring systems for pumping solutions. This ensures a perfect match between hydraulics, motors, electrics, and all other mechanical components that make up a comprehensive pumping solution, ensuring the highest possible efficiency.

Grundfos pioneered the implementation of variable speed drives in pumping operations and has refined numerous functionalities that cater specifically to pumping conditions.

Experience from a huge installed base of stainless steel submersible pumps and motors is reflected in our surface water solutions. Grundfos can supply submersible, end-suction, split-case and propeller shaft pumps that effectively handle surface water, recycled water and seawater.

Optimisation at the well field

At the well field, the Grundfos Well Field Energy Audit (WFEA) is a practical tool for optimising groundwater intake, with a documented savings potential from reduced energy consumption. WFEA takes many operating issues into account, such as varying water quality from well to well, water drawdown, and requirements for peak demand situations.

Performance testing

All pumps leaving a Grundfos factory are performance tested in accordance with relevant international standards. Any pump can on customer demand also be tested to the strictest standards. All tests are carried out on test equipment that is certified by third-party inspectors. Tested performance data is stored by Grundfos for a minimum of 5 years.

Optimal groundwater intake

Our range of submersible multistage pumps (SP) along with variable frequency drives (VFD) is unmatched for well types. State-of-the-art hydraulic design delivers optimum efficiency during periods of high demand with high reliability, very long service intervals and low total cost of ownership. Using VFDs ensures more balanced water drawdown, protecting the water source.

Grundfos matches the stainless steel build quality of the SP pump to the groundwater conditions. Depending on the corrosion risk, high grade stainless steel variants are available.

Energy optimisation in practice

Grundfos in the Netherlands and Vitens, the largest drinking water supplier in the Netherlands, have a long-standing cooperation with energy optimisation and have worked extensively with Pump Audits and Well Field Energy Audits (WFEA). Vitens extracts and distributes 350 million m³ of water per year to 5.4 million customers along 47,500 km of distribution network.

Following a WFEA, Grundfos supplied SP pumps with MP 204 motor protection and Grundfos Remote Management at Vitens' Loosdrecht well field, one of a total of 110 well fields. This has resulted in 21% energy savings, or 55,000 kWh per year. Grundfos is helping Vitens achieve ambitious energy reduction targets and WFEA and Pump Audits are central to this strategy.



KEEPING DRINKING WATER QUALITY HIGH

Drinking water treatment is technology-driven and heavily regulated. That is why you need a partner who, in addition to supplying pumping, dosing and disinfection solutions for each stage of the water treatment cycle, is able to offer packaged solutions for the entire water treatment process.

Grundfos supplies a wide range of disinfection methods suitable for different disinfection tasks and requirements. These include innovative UV treatment for pre-treatment and in-line final treatment, effective chlorine and sodium hypochlorite treatment with required residual effect, and chlorine dioxide treatment for effective legionella and biofilm control.

Prior to dosing and disinfection, we ensure a uniform bulk-flow and oxygenation in the reservoir. We use computer simulations in the design to assess the need for mixing. All necessary mixing and aeration equipment is supplied, in accordance with the design requirements.

International project expertise

Pure product knowledge is not enough. Grundfos offers our expertise for your water treatment project and can provide consultancy from planning through to design, cost evaluation, commissioning and maintenance. Our dedicated, global project management services help you with the choices to be made, ensuring your customised water treatment solutions are certified according to local rules and regulations – wherever in the world you may be.

Process knowledge, engineering capability, precision components, and dosing and disinfection accuracy are all part of our delivery to you. From the outset every aspect of the water treatment solution is integrated into your water supply system.

Grundfos Water Treatment Solutions

To meet the unique specifications of each water treatment project, we assemble an International Project Management team from our experienced and highly qualified project engineers at our Water Treatment Competence centres around the world.

With the know-how and the resources to handle any application in the field of dosing and disinfection technology, no matter how complex, satisfactory project execution is assured.

Digital dosing pumps for desalination pre- and post-treatment in Minjur, Chennai Municipality

The seawater desalination plant in Minjur will each day draw over 230 million litres of seawater to produce 100 million litres of potable water, the equivalent of 100,000 m³ per day. With plant life estimated at 25 years, the municipality required a turnkey solution with service and support from Grundfos India.

Grundfos supplied 28 DME dosing pumps running on customised skids with 3 or 4 dosing pumps, a pulsation dampener, a flow meter, and a counter pressure valve on each skid. For the customer, the technical characteristics and capabilities of the Grundfos DME dosing pumps have proven to be excellent.

This met the requirements for the reverse osmosis pre-treatment, where seawater is filtered and chemically adjusted, and post-treatment, where treated water is chemically adjusted to make it drinkable, with varying flow rates.



SMART digital dosing™ solutions that redefine dosing

SMART Digital DDA, DDC and DDE diaphragm dosing pumps offer modularity, simplicity and flow intelligence and contribute to keeping lifecycle costs low. Processes where SMART Digital excels include disinfection, pH-adjustment, chemical dosing, cleaning-in-place, biocides, coagulation, precipitation/flocculation, filtration and reverse osmosis.

MANAGING PRESSURE FROM SOURCE TO TAP

To reduce water loss (non-revenue water – NRW) and cut distribution costs, Grundfos offers pump optimisation and proportional pressure control solutions that increase pump and system efficiency, ensure correct water pressure at the consumer, and deliver peace of mind from high reliability and intelligent surveillance of the water distribution system.

Pressure management is now well recognised as being essential to effective leakage management. We package pumps, intelligent components and system surveillance to build unique pressure management solutions that minimise water losses (NRW), reduce energy consumption and minimise operational costs for leaks and pipe maintenance.

System design using proportional flow

The highly variable flow rates that characterise water distribution networks are an important factor affecting cost-efficiency and water loss. A tendency in system design

has been to size pumps based on maximum demand, however far more time is spent pumping at low flows and the efficiency of such a single pump solution will fall quickly as flow decreases.

The optimal solution is to install more smaller pumps in parallel controlled by our multi-pump controller. Grundfos systems can be expected to deliver a hydraulic efficiency of more than 80%, and the multi-pump controller automatically maintains the best efficiency point by cascade operation and speed control.

To design systems based on this principle, Grundfos uses load profiles based on 24-hour consumption patterns. The load profile gives an overview of how much a pumping system operates at a specific flow rate on a daily basis, and the system can be designed or redesigned accordingly. Compared to traditional set-ups, the design principle we work by lowers the initial capital investment. When converting existing systems, payback time is typically within one to three years.



Grundfos Demand Driven Distribution

At the heart of the system is the Demand Driven Distribution controller, which automatically can adapt the setpoint of the pump to the actual flow required by the system and compensate for excessive system pressure.

Demand Driven Distribution minimises water losses, reduces energy consumption, and minimises operational expenditures for leaks and pipe maintenance. The system caters for all network sizes and ensures reliable, optimised and resource efficient distribution.

Non-revenue water (NRW)

The key issue of reducing and controlling non-revenue water (NRW) in distribution networks is to minimise losses through existing leaks and reduce the risk of new leaks. Pressure management is now well recognised as being essential to effective leakage management; reducing surplus pressure by 50% can reduce leakage loss by at least 20%. An important contributing factor behind pipe bursts that increases water losses due to leakage is water hammer, which is also reduced with a pressure management strategy.

In addition to pressure management, the International Water Association (IWA) also recommends active leak control, speed and quality of repairs, and infrastructure management.

Water conditioning

Grundfos supplies solutions for water conditioning in the water distribution network, including UV and Ozone, and we also provide repeater stations for the network, for example for renewing chlorine content.

Demand Driven Distribution in Ploiesti, Romania

The proportional pressure management of water supply was implemented at the Ploiesti Nord Gageni water supply zone, one of four such zones in this city of over 230,000 inhabitants.

Even though Ploiesti was already operating with a reduced night time pressure, the NRW (leakage) losses were reduced by a further 6.6% (approximately 146,000 M³/year) and specific energy (kWh/m³) was reduced by a further 7.4% (approximately 48,000 kWh/year). With these savings, costs were recovered within one year.



KEEPING RELIABILITY HIGH AND DOWNTIME LOW

Dependable, energy efficient solutions for your pumping stations and networks are essential for wastewater collection and transport. In an environment with continuous wastewater inflow, downtime is to be avoided at all costs. Your pumps need to work, and risk minimisation needs to be built into the system.

A pumping station is complex, and getting things right at the design stage is important to avoid issues such as blockages, odours, power outages and flooding. Grundfos takes the greatest risk factors out of the equation when designing or refurbishing a wastewater transport network, ensuring cost-effective and reliable operation.

We apply our technology and expertise to benefit the operation and reliability of your installation. Our technology-leading wastewater pumps offer the industry's highest total, wire-to-water efficiency. VFDs, wastewater control, and remote monitoring from Grundfos keep you always in complete control of your system.

Our prefabricated pumping stations offer a unique, customised solution where space is critical. We carry out advanced computer modelling of pressurised sewer systems, and for large pumping stations we use Computational Fluid Dynamics (CFD) flow simulation and model testing to optimise the design.

Prefabricated pumping stations

Grundfos offers a full range of functional modular pumping stations – complete with all necessary pumps, piping, valves and level controls. The pump pit, pumps and controls can be combined to suit specific requirements for each individual application.

Highest efficiency wastewater pumps

To reduce lifecycle costs in the wastewater transport network, Grundfos supplies the SE/SL wastewater pumps with the highest total, wire-to-water efficiency yet seen in the industry. S-tube impeller technology ensures no compromise between large free passage and high efficiency, reducing the risk of blockages, maintenance costs and downtime.

Dedicated Controls & Grundfos Remote Management

Dedicated Controls is an intelligent, user-friendly monitoring and control solution. Designed to control up to six pumps in sewage pumping stations, Dedicated Controls can be combined with Grundfos Remote Management or to any scada system for monitoring and managing pump installations from a remote location.

Grundfos Remote Management reduces the need for onsite inspections and in the event of an alarm or warning, the relevant people are notified directly. Initial investment is minimal, and a fixed low fee covers data traffic, hosting costs and system support, including back-up of all data.

A solution for the old city, Chongqing, China

A prefabricated pumping station installed for a sewage system reconstruction project in Fengzhong Road in Chongqing, China was the perfect solution for difficult sewage system reconstruction in the old city.

The solution satisfied requirements for 4,320 m³/d inflow in a 2 m tank diameter with 8.3 m depth. The pumping station footprint is minimal, and similarly the work area above ground for installation was small, causing limited disruption.



RESPONDING TO FLOOD AND STORMWATER RISK

Flood control pumping is characterised by a requirement for high flow and low head. As many flood scenarios are seasonal, flood control pumps may only run occasionally, placing heavy demands on the reliability of the pumping solution.

As part of our dependable, energy-efficient flood control solutions, we supply a complete range of products optimised for high total efficiency and low maintenance costs. Applying our design and flow simulation competencies means we can minimise the pumping station footprint, ensure safe pump operation and reduce the total cost of the pumping station.

Stormwater tanks are an effective way of reducing peak flow and equalising flow rates from stormwater runoffs in the sewer system. Computational Fluid Dynamics (CFD) flow simulation and model testing are used to optimise tank design and our pump and control solutions ensure reliable and automatic operation, regardless of the size. And once the hydraulic load is reduced and capacity is available, you can get stormwater moving again with perfect efficiency and reliability.

Reduce turbulence and increase efficiency

Our range of axial-flow propeller KPL pumps for flood control and other heavy-duty pumping applications offer the Turbulence Optimiser™, an innovative, patented solution for reducing turbulence in the gap between the pump volute and the column pipe, increasing efficiency by up to two percentage points.

Handbooks and guidelines available

Grundfos offers consultancy on every aspect of the flood control solution, and this is knowledge we are happy to share. Our handbooks for the design and optimisation of stormwater tanks and for flood control pumping stations are available for order or download from our website.

'Pump gate' – designed on site to solve local issues

To reduce the impact of flooding coinciding with high tides in Poglar, a suburb to Jakarta, Indonesia, we built an innovative solution where a floodgate was equipped with pumps. The 'pump gate' solution was developed in direct response to the challenges at the location.

Compared to a traditional pumping station, 'pump gate' required no additional land, no long and invasive construction period, costs were reduced, and there was an immediate benefit for the many residents in Poglar, living on the banks of the Angkwe River.



PEACE OF MIND FROM MODULAR, OPTIMISED SOLUTIONS

The efficient treatment of wastewater requires strong technical competencies. At the same time, wastewater treatment plants are required to meet increasingly stringent demands to reduce their impact on the environment and local communities. Wastewater goes through an increasing number of processes before being discharged into receiving waters, and each new process increases total energy costs.

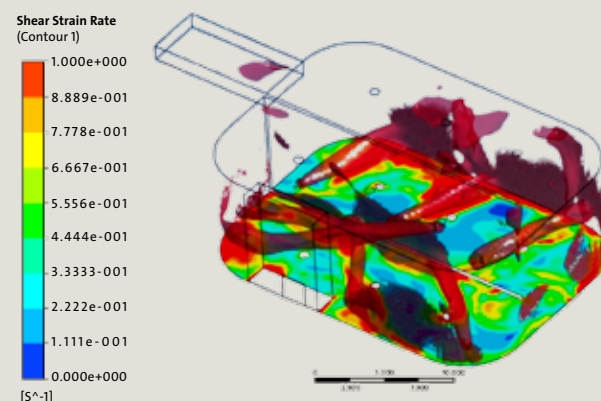
From solution design and proposal to project execution and handover and run-in, Grundfos offers one point of contact for all phases of the project. We are a trusted partner for design, verification, installation, operation and maintenance. We save you time, energy and costs.

Throughout the design stage Grundfos works with you to ensure low lifecycle costs and hydraulic stability for mechanical, biological and chemical treatment.

Modular solutions optimised from the design phase

Our contribution starts with the initial identification of needs. Through our design expertise we provide guidance in optimal selection and positioning of equipment. For complex installations this can include CFD flow simulations in the design and specification phase. Our pumping, mixing, dosing and aeration systems are optimised for each other, and we offer pre-engineered and optimised modules for treatment processes.

Biological treatment is the largest and most expensive element at a wastewater treatment plant. With our aeration systems, we can help optimise tank performance and minimise operating costs. In response to flow variations in the tank, variable speed pumps equalise flow and load to the plant so the capacity of the biological process is not exceeded. With our aeration systems, we can further optimise tank performance and minimise operating costs. If the recommendations of a Grundfos system and energy audit are followed, savings of up to 50% of the yearly energy consumption are possible.



Optimise tank design for increased efficiency

Correct configuration of submersible wastewater pumps, mixers, flowmakers, ejectors and aerators is assured by using Computational Fluid Dynamics (CFD) simulations to depict accurately fluid flows at any location in the tank.

The result will reveal any bottlenecks, vortexes and areas with high or low velocity of the wastewater.

Integrated dosing and disinfection systems

We ensure that the PLC-controlled, fully automatic systems for dosing chemicals and poly-electrolytes we provide are seamlessly integrated with local regulations and requirements. We can advise on the use of chemicals (either as concentrates or ready-to-use solutions) and also on chemical storage with relevant safety procedures.

Refurbishment of Kubratovo WWTP, Bulgaria

The wastewater treatment plant at Kubratovo treats the domestic wastewater, process water and rain water from Sofia, the capital of Bulgaria. Serving a population of 1,313,000 (90% of Sofia), 480,000 cubic metres wastewater is treated daily.

Grundfos was involved very early in the refurbishment project and worked closely together with both the designer and the contractor to build the optimal design for the process tanks, focusing on processes, hydraulics and cost of installation and operation. Several CFD simulations were carried out by Grundfos in order to fully optimise the system.



OPTIMISED SOLUTIONS FOR THE ENTIRE WATER CYCLE

WHATEVER THE WATER UTILITY APPLICATION, GRUNDFOS HAS A HIGH QUALITY, SUSTAINABLE AND OPTIMISED SOLUTION AVAILABLE.

Find your pump or system online

You can draw on a wide range of expert knowledge, documentation, installation and service information at our online selection and design program, WebCAPS.

Visit www.grundfos.com for more information



Grundfos Blueflux® guarantees the highest motor efficiency from Grundfos. The **Grundfos Blueflux®** label guarantees that the motor technology used is ahead of current market standards, and either meets or exceeds global legislative requirements for motor efficiency, where these apply.

GRUNDFOS ISOLUTIONS

A holistic approach to system intelligence: Customised interactive technologies allow your pump system to adapt dynamically and intelligently to current needs.



The **S-tube** impeller is the only impeller available in the wastewater market that does not compromise either hydraulic efficiency or free passage through the pump. Offering simplicity in design and operation, we expect the **S-tube** impeller will be the impeller of choice for wastewater applications in the future.

GRUNDFOS SMARTDESIGN

User-driven design: Trouble-free installation, operation and maintenance through functional design.

PRODUCT OVERVIEW

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MATCHING PUMPS AND PRODUCTS TO APPLICATIONS

OPTIMISED SOLUTIONS FROM GRUNDFOS DRAW ON A COMPREHENSIVE RANGE OF PRODUCTS. THE MATRICES BELOW MATCH OUR WIDE PRODUCT RANGE TO SPECIFIC WATER SUPPLY AND WASTEWATER APPLICATIONS.

RAW WATER INTAKE

	Ground-water	Seawater	Rivers & Lakes	Recycled Water	Transfer
SUBMERSIBLE PUMPS	✕	✕	✕	✕	
SINGLE-STAGE STANDARD PUMPS			✕	✕	✕
MULTI-STAGE CENTRIFUGAL PUMPS & SYSTEMS					
WASTEWATER PUMPS		✕	✕	✕	
FLOOD CONTROL PUMPS		✕	✕	✕	
MIXERS					
FLOWMAKERS					
AERATION					
EJECTORS					
PREFABRICATED PUMPING STATIONS					
CONTROLS & MONITORING	✕	✕	✕	✕	
DOSING & DISINFECTION					

DRINKING WATER TREATMENT

	Chemical Treatment	Desali-nation	Flocculation	Sedimen-tation	Filtration	Backwash	Disinfection	Water Reservoirs
SUBMERSIBLE PUMPS								
SINGLE-STAGE STANDARD PUMPS	✕			✕	✕	✕	✕	
MULTI-STAGE CENTRIFUGAL PUMPS & SYSTEMS	✕	✕		✕	✕	✕	✕	
WASTEWATER PUMPS			✕	✕				✕
FLOOD CONTROL PUMPS			✕					✕
MIXERS								
FLOWMAKERS								
AERATION								
EJECTORS								
PREFABRICATED PUMPING STATIONS								
CONTROLS & MONITORING	✕		✕	✕	✕	✕	✕	✕
DOSING & DISINFECTION	✕		✕	✕	✕	✕	✕	✕

WATER DISTRIBUTION

	Distribution	Local Stations	Boosting	Water Towers
SUBMERSIBLE PUMPS				
SINGLE-STAGE STANDARD PUMPS	✕	✕		
MULTI-STAGE CENTRIFUGAL PUMPS & SYSTEMS	✕	✕	✕	✕
WASTEWATER PUMPS				
FLOOD CONTROL PUMPS				
MIXERS				
FLOWMAKERS				
AERATION				
EJECTORS				
PREFABRICATED PUMPING STATIONS				
CONTROLS & MONITORING	✕	✕	✕	✕
DOSING & DISINFECTION	✕	✕	✕	✕

WASTEWATER TRANSPORT & FLOOD CONTROL

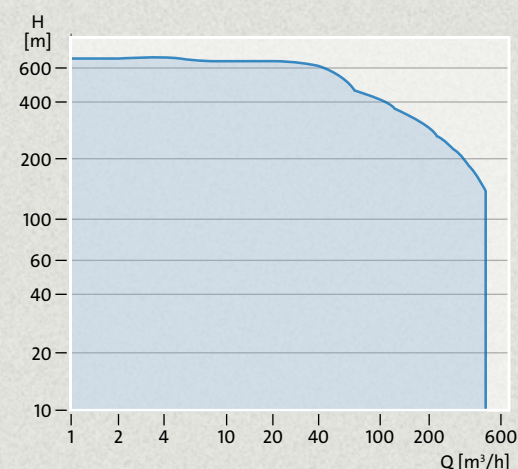
	Pumping from inside building	Main Pumping Station	Pressurised Pumping Station	Network Pumping Station	Flood Control
SUBMERSIBLE PUMPS					
SINGLE-STAGE STANDARD PUMPS					
MULTI-STAGE CENTRIFUGAL PUMPS & SYSTEMS					
WASTEWATER PUMPS	✕	✕	✕	✕	✕
FLOOD CONTROL PUMPS					✕
MIXERS		✕		✕	✕
FLOWMAKERS					
AERATION					
EJECTORS					✕
PREFABRICATED PUMPING STATIONS	✕	✕	✕	✕	✕
CONTROLS & MONITORING	✕	✕	✕	✕	✕
DOSING & DISINFECTION		✕	✕	✕	

WASTEWATER TREATMENT

	Inlet	Primary Treatment	Chemical Treatment	Biological Treatment	Tertiary Treatment	Sludge Treatment
SUBMERSIBLE PUMPS						
SINGLE-STAGE STANDARD PUMPS					✕	
MULTI-STAGE CENTRIFUGAL PUMPS & SYSTEMS					✕	
WASTEWATER PUMPS	✕	✕	✕	✕	✕	✕
FLOOD CONTROL PUMPS	✕			✕	✕	
MIXERS	✕		✕	✕	✕	✕
FLOWMAKERS				✕		
AERATION		✕		✕		
EJECTORS		✕		✕		
PREFABRICATED PUMPING STATIONS	✕					
CONTROLS & MONITORING	✕		✕	✕	✕	
DOSING & DISINFECTION		✕	✕	✕	✕	✕

SUBMERSIBLE PUMPS

Grundfos is a global market leader for submersible groundwater pumps, having perfected the match between the pump, motor and protection, with monitoring and controls available for system optimisation. Grundfos is one of the world's largest manufacturers of high-quality submersible motors, and our motors match the optimum duty points for our SP and SQ pumps.



SUBMERSIBLE PUMPS – SP

Complete range of submersible pumps for groundwater applications built to deliver optimum efficiency during periods of high demand, with long product life and easy maintenance.

BENEFITS

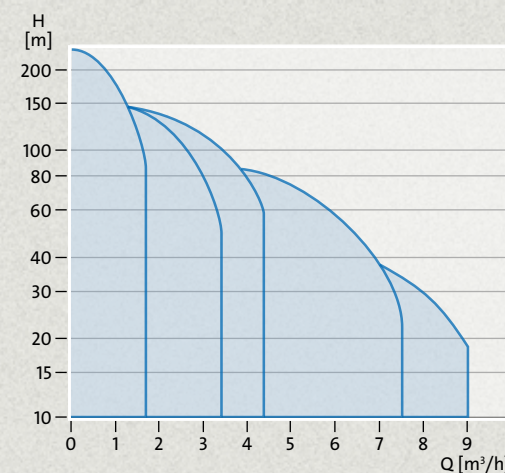
- State-of-the-art hydraulics provide high efficiency and low operating costs
- Made entirely of stainless steel to ensure high reliability and long lifetime, even in corrosive environments
- One supplier of the pump, motor and controls for an optimal pumping system.

TECHNICAL DATA

- Motor size: 0.37 kW - 250 kW
- Flow rate (Q): Maximum 470 m³/h
- Head (H): Maximum 670 m
- Liquid temperature: 0 °C to +60 °C
- Discharge diameter: 1" to 6"
- Diameter: 4, 6, 8, 10, 12 inch

APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT



SUBMERSIBLE PUMPS – SQ (E)

Compact light weight, 3" submersible multistage centrifugal pump with a wide performance range for groundwater applications

BENEFITS

- Built-in electronics provide multiple protection features for reliable water supply at all times
- Permanent magnet motors offer excellent efficiency levels and will supply pump heads up to 180 m at rated flow
- Constant pressure option for water supply if connected to the Grundfos CU 301 control box

TECHNICAL DATA

- Motor size: 0.70 - 1.85 kW
- Flow rate (Q): > 7 m³/h
- Head (H): > 180 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: 1" to 1½"
- Enclosure class: IP68
- Maximum system pressure: 240 m

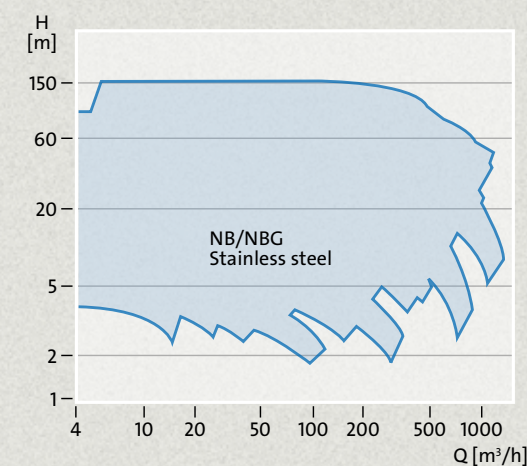
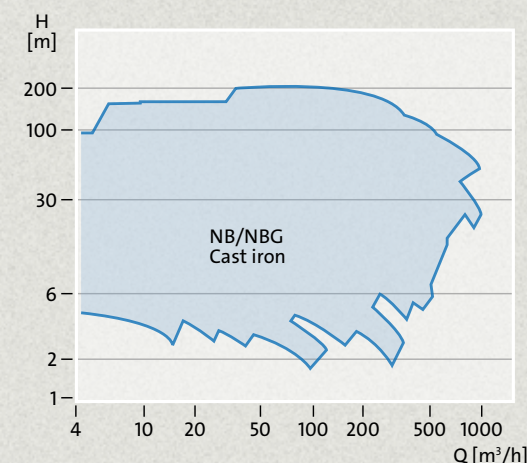
APPLICATIONS:

- RAW WATER INTAKE



SINGLE-STAGE STANDARD PUMPS

Grundfos single-stage pumps are available for a wide variety of applications, where reliability and cost-efficiency is required. In water utility, single-stage pumps are generally used in raw water or water supply applications where the requirement is for low head relative to the flow and are available in both a vertical and a horizontal design.



SINGLE-STAGE END-SUCTION STANDARD PUMPS

–NB/NBG/NBE/NBGE

Multi-purpose end-suction pumps for reliable and cost-efficient applications such as water supply. Non-self-priming, single-stage, centrifugal volute pumps with axial suction port, radial discharge port and horizontal shaft; these close-coupled pumps are following the same inlet and outlet dimensions as mentioned in EN733 (For NB), and ISO2858 (for NBG), that are normally used for long coupled pumps

BENEFITS

- Optimised hydraulics in housing and impeller for unimpeded liquid flow
- O-ring seal between pump housing and cover means no risk of leakage
- Housing, impeller and wear ring in different materials for improved corrosion resistance, no sticking elements

TECHNICAL DATA

- Motor size: 0.55 to 200 kW
- Flow rate (Q): Up to 1450 m³/h
- Head (H): 150 m
- Liquid temperature: -25 to +140 °C
- Discharge diameter: DN32 - DN250
- Maximum system pressure: 16/25 bar
- Maximum hydraulic efficiency: 88.5%

APPLICATIONS:

- RAW WATER INTAKE
- WATER DISTRIBUTION
- FLOOD CONTROL
- WASTEWATER TREATMENT



VARIANTS

- Available in a number of shaft seal and material variants



SINGLE-STAGE END-SUCTION STANDARD PUMPS – NK/NKG/NKE/NKGE

Multi-purpose end-suction pumps for reliable and cost-efficient applications such as water supply and irrigation. Back pull-out design enables removal of the motor, coupling, bearing bracket and impeller without disturbing the pump housing or pipework; these long-coupled pumps comply fully with either EN733 or ISO2858.

BENEFITS

- Optimised hydraulics in housing and impeller for unimpeded liquid flow
- O-ring seal between pump housing and cover means no risk of leakage
- Back pull-out design for easy dismantling for service

TECHNICAL DATA

- Motor size: 0.55 to 460 kW
- Flow rate (Q): Up to 1500
- Head (H): 150 m
- Liquid temperature: -25 to +200 °C
- Discharge diameter: DN32 - DN250
- Maximum system pressure: 16/25 bar
- Maximum hydraulic efficiency: 88.5 %

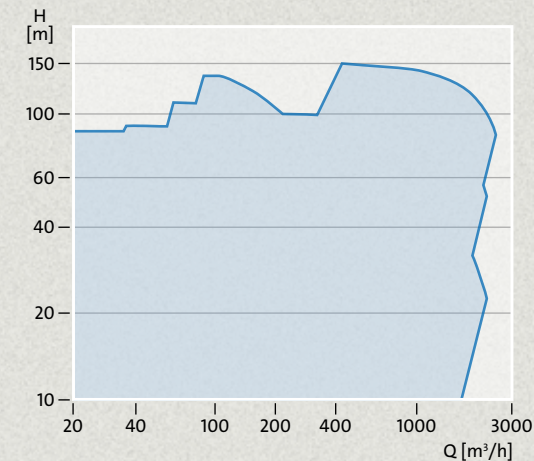
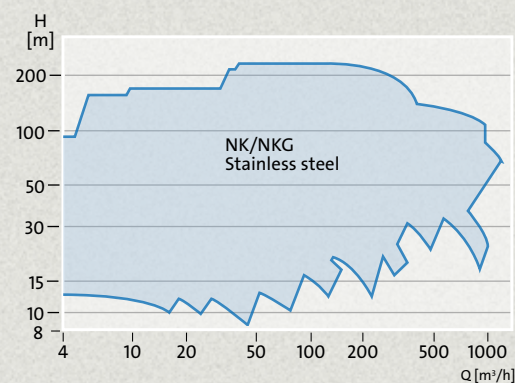
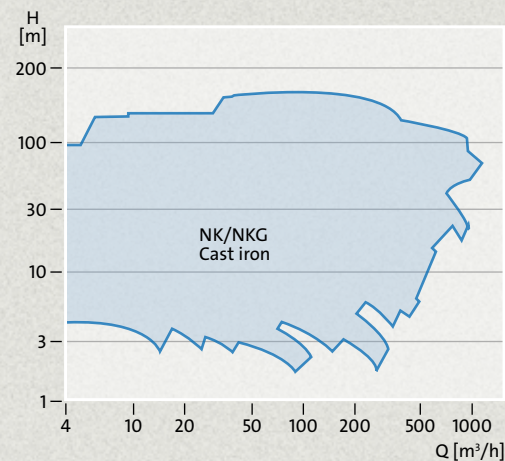
APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT
- WATER DISTRIBUTION
- FLOOD CONTROL
- WASTEWATER TREATMENT



VARIANTS

- Available in Cast iron with multiple impeller material choices
- Available in full stainless steel 1.4408
- Available in full Duplex stainless steel 1.4517
- Available with single and double seal arrangements
- Available with Grease for life or Heavy duty 100.000 hours bearing brackets



HORIZONTAL SPLIT CASE PUMPS – HS

This horizontal split case pump is a single-stage, non-self-priming, between bearing, centrifugal volute pump. The axially split design allows easy removal of the top casing and access to the pump components without disturbing the motor or pipework.

BENEFITS

- High energy efficiency and low life-cycle costs from the easy to service split case design
- Double suction minimises axial load, extending the life of the wear rings, shaft seals and bearings
- Double volute reduces radial forces and minimises noise and vibration

TECHNICAL DATA

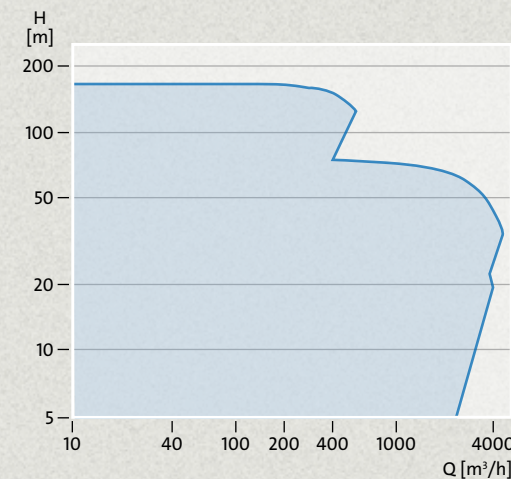
- Motor size: 1.5 - 630 kW
- Flow rate (Q): 3000 m³/h
- Head (H): 148 m
- Liquid temperature: 0 to +100 °C
- Discharge diameter: DN 50 - DN 400
- Maximum system pressure: 16 bar
- Maximum hydraulic efficiency: 90%

VARIANTS

- Available in three configurations – pump with motor and baseframe, pump with baseframe, and bare shaft pump only
- Many product variants available

APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT
- WATER DISTRIBUTION



VERTICAL INLINE VOLUTE PUMPS – TP, TPE

Single-stage, in-line centrifugal volute pumps with standard motors and mechanical shaft seals. Compared to end-suction pumps, in-line pumps allow a straight pipework and thus often reduced installation costs and space. TP pumps up to 22 kW are available as TPE pumps with built-in Variable Frequency Drive.

BENEFITS

- Optimised hydraulics for high efficiency
- Reduced power consumption
- High levels of reliability and efficiency from the quiet, highly-efficient IE3 motors

TECHNICAL DATA

- Motor size: 0.18 - 630 kW
- Flow rate (Q): 4600 m³/h
- Head (H): 168 m
- Liquid temperature: -25 to +150 °C
- Discharge diameter: DN 32 - DN 400
- Maximum system pressure: 25 bar
- Maximum hydraulic efficiency: 87%

APPLICATIONS:

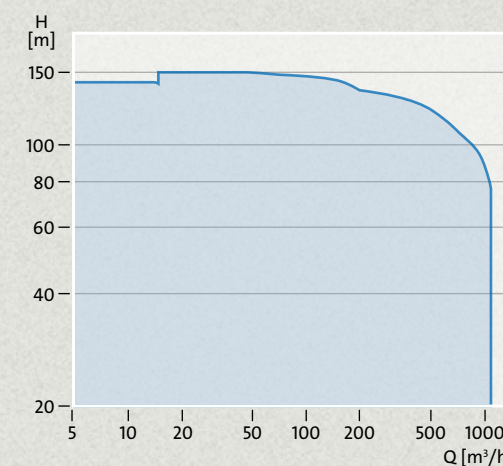
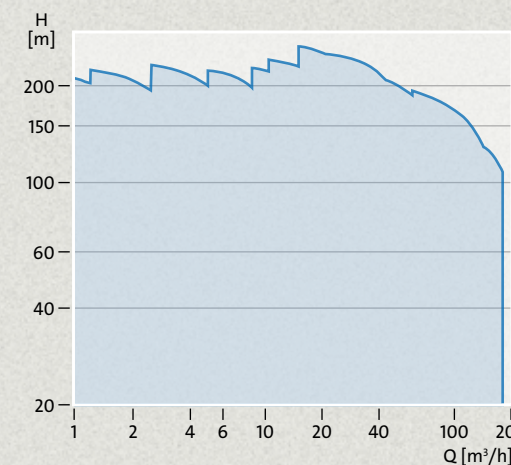
- RAW WATER INTAKE
- WATER DISTRIBUTION





MULTI-STAGE CENTRIFUGAL PUMPS AND SYSTEMS

In water utility applications where a high head relative to the flow is required, Grundfos supplies multistage pumps that can deliver this. Our CR pumps are one of our most recognised and successful products and are at the heart of our pressure boosting systems.



MULTI-STAGE CENTRIFUGAL PUMPS – CR (E)

Modularity for a complete range of pump solutions; from four material variants, thirteen flow sizes (up to almost 50 bar of pressure), a variety of shaft seals, rubber materials, and supply voltages. Pump parts can be optimised and designed for specific requirements.

BENEFITS

- Available with **Grundfos Blueflux** IE3 motor efficiency, reducing energy costs
- Multi-flange fits a variety of standard connections for a more flexible solution
- Uniquely designed cartridge shaft seal increases reliability, reducing downtime

TECHNICAL DATA

- Motor size: 0.37 - 75 kW
- Flow (Q): Maximum 180 m³/h
- Head (H): Maximum 500 m
- Liquid temp.: -40 °C to +180 ° (240 °C, Thermal oil)
- Operating pressure: Maximum 50 bar
- Discharge diameter: Up to DIN 150
- Maximum efficiency: 80%

- All-titanium

APPLICATIONS:

- **RAW WATER INTAKE**
- **WATER DISTRIBUTION**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**



AVAILABLE MATERIALS

- Cast iron
- Two grades of stainless steel

HYDRO BOOSTER

Booster systems built to last: sturdy, compact units with easy access to all service parts and can be used wherever additional pressure is required. Each booster model has been designed to meet specific customer demands for capacity and control.

BENEFITS

- Intelligent cascade control ensures that the optimum number of pumps required to meet the demand operate at any time
- CR pumps with IE3 motors for the most energy-efficient solution available for constant pressure during changing flow demands
- Grundfos MPC controller handles even the most difficult boosting jobs with ease and accuracy

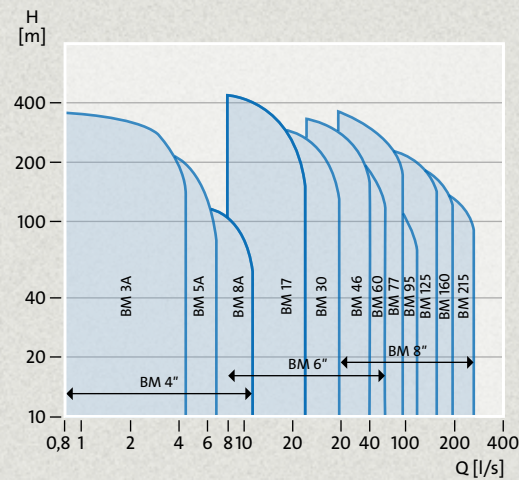
TECHNICAL DATA

- Motor size: 0.55 - 75 kW
- Flow rate (Q): 1080 m³/h
- Head (H): 155 m
- Liquid temperature: 0 to +70 °C
- Discharge diameter: Up to DN 350
- Enclosure class: IP 54
- Maximum system pressure: PN16 (standard) (up to PN 40 on request)
- Maximum hydraulic efficiency: 80%
- Ambient: 0 °C - +40

APPLICATIONS:

- **RAW WATER INTAKE**
- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**





BOOSTER MODULES

– BM

High-pressure booster modules for boosting, liquid transfer and circulation in systems under high static pressure and used in reverse osmosis and ultra-filtration applications in water supply, water treatment and industrial plants.

BENEFITS

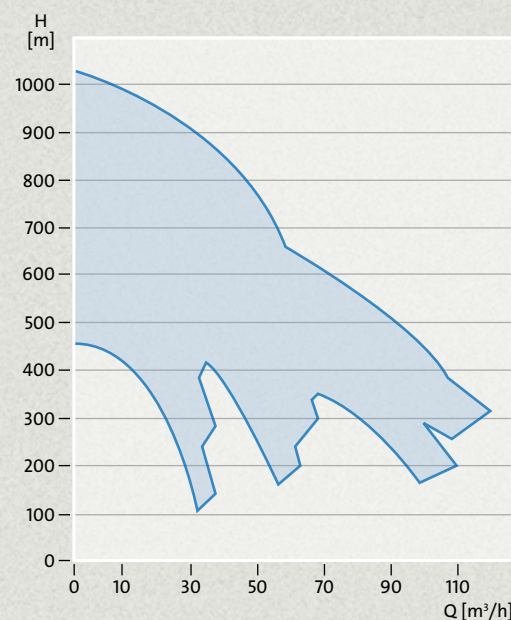
- All stainless steel construction, available in three qualities: SS 304, SS 316, SS 904 L
- Easy to install and low noise
- Compact and modular design that is leakage free

TECHNICAL DATA

- Motor size: 0.75 kW to 92 kW
- Flow rate (Q): Up to 260 m³/h
- Head (H): Up to 800 m (serial connection)
- Liquid temperature: 40 degree °C.
- Discharge diameter: Victaulic connection
- Maximum system pressure: Up to 60 bar.
- Maximum hydraulic efficiency: Up to 80%

APPLICATIONS:

- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**



BOOSTER MODULES

– BMS hs.

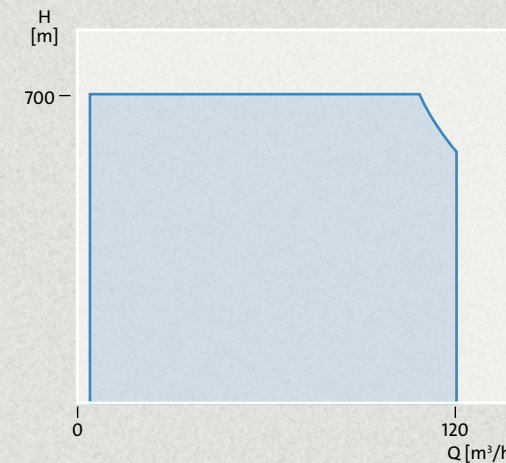
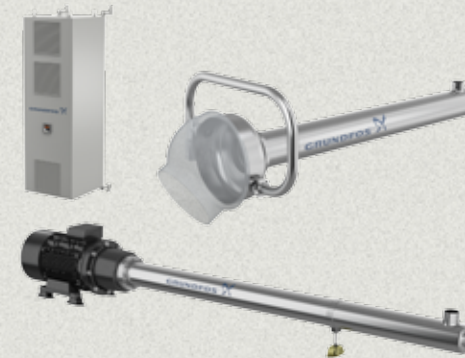
The BMS hs range is a completely new range of booster modules mainly used for reverse osmosis, ultra filtration, filtration and pressure boosting applications. It features a directly coupled pump powered by a permanent magnet motor. The axial thrust from the pump is absorbed by a water lubricated build in thrust bearing.

BENEFITS

- Improved design that makes service and maintenance easier than ever, and at the same time increases durability and reliability.
- The speed of the permanent magnet motor is controlled by a variable frequency drive, which features a an optional communication module and the possibility of various adaptations to the application. The permanent motor, together with the design improvement, is also increasing energy savings due to improved efficiency.
- The high-speed motor also gives the BMS hs range a smaller footprint and drastically reduces the weight of the pump.

TECHNICAL DATA

- Motor size: Up to 180 KW.
- Flow rate (Q): Up to 115 m³/h
- Head (H): Up to 827 m.
- Liquid temp: Up to 40 degree C
- Inlet/discharge: 3" Victaulic
- Insulation class (motor): IP 55
- Maximum system pressure: 350 m
- Maximum hydraulic efficiency: Up to 80%



BOOSTER MODULES

– BMST

Booster module consisting of a BMS hs and a BMT pump, connected in series designed for use in reverse osmosis system where the energy from the resulting high pressure concentrate is recovered by the Pelton turbine build into the BMT pump.

BENEFITS

- Energy savings of up to 34 % compared to conventional systems
- Both pumps have water lubricated axial thrust bearings build in to absorb the axial thrust from the pump.

TECHNICAL DATA

- Motor size: Up to 180 KW
- Flow rate (Q): Up to 120 m³/h
- Head (H): 700 m
- Liquid temperature: Up to 40 degree C
- Inlet/ discharge: Victaulic couplings
- Insulation class(motor): IP 55



BOOSTER MODULES

– BMSX

The new BMSX is a booster system consisting of a BMS hs pump, a BMS hp pump and an isobaric pressure exchanger. The BMSX is designed for sea water and brackish water desalination. Variable frequency drives on both motors ensures optimised operation and efficiency.

BENEFITS

- Capable of delivering 1500 m³ permeate per day with an energy recovery of up to 60%
- Critical components made of super duplex stainless steel, polymer and ceramic, making the module extremely resistant to its operating environment.
- Compact design and very small footprint

TECHNICAL DATA

- Motor size: Up to 180 KW
- Head (H): Up to 82.7 bar
- Liquid temperature: Up to 40 degree C
- Inlet/discharge connections: Victaulic couplings
- Insulation class (motor): IP 55

WASTEWATER PUMPS

Grundfos offers a complete range of wastewater pumps for collecting and transporting wastewater, offering reliability and energy efficiency. These pumps are enclosed units with a pump and motor, making them suitable for submersible operation; however their construction means that service can be carried out without entering the pit, and they can also be dry-installed horizontally or vertically.



SUBMERSIBLE WASTEWATER PUMPS – SE/SL

Designed for the handling of wastewater, process water and unscreened raw sewage. The pumps can be installed submerged and/or dry.

BENEFITS

- SE/SL pumps offer you the best level of reliability due to optimised hydraulics designed with large free passage
- Highest wire-to-water efficiency available, reducing your total costs
- Highest level of service friendliness, making service of the pump trouble-free and time saving
- Plug and pump – all necessary control and protection built into the pump, eliminating complexity (For the SL 0.9-1.5kW AUTOADAPT version)

TECHNICAL DATA

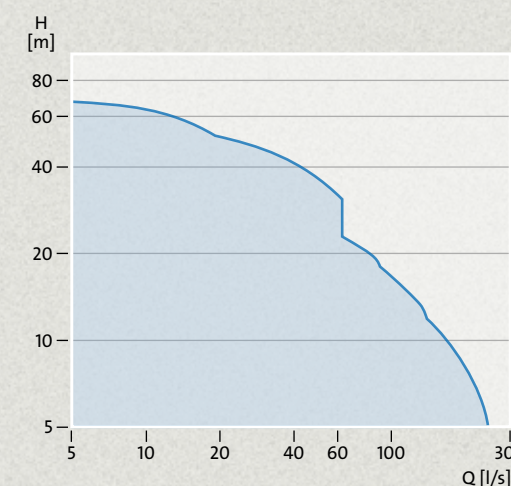
- Motor size: 0.9 to 30 kW
- Flow rate (Q): Maximum 280 l/s (1008 m³/h)
- Head (H): Maximum 71.3 m
- Liquid temperature: 0 to +40°C
- Discharge diameter: DN 65 to DN 300
- Free passage: Up to 160 mm
- Insulation class: H
- Maximum efficiency: 83.7%
- Maximum system pressure: PN10

AVAILABLE MATERIALS

- Stainless steel impeller (SE, SL)
- Stainless steel variants for standards EN 1.4408 and EN 1.4517/1.4539 (SE)

APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT





SEWAGE PUMPS – S RANGE

Highly dependable, powerful sewage pumps, designed for handling unscreened raw sewage, acknowledged for their strength, their durability, and for innovative features such as SmartTrim impeller clearance adjustment system and SmartSeal for leakage prevention.

BENEFITS

- High efficiency and excellent non-clogging capabilities with large free passage of 80 - 145 mm
- Patented SmartTrim system for extremely easy impeller adjustment without dismantling the pump, to maintain peak performance and keep lifecycle costs low.
- The SmartSeal auto-coupling gasket provides a completely leak-proof connection between the pump and the base unit of the auto-coupling system

TECHNICAL DATA

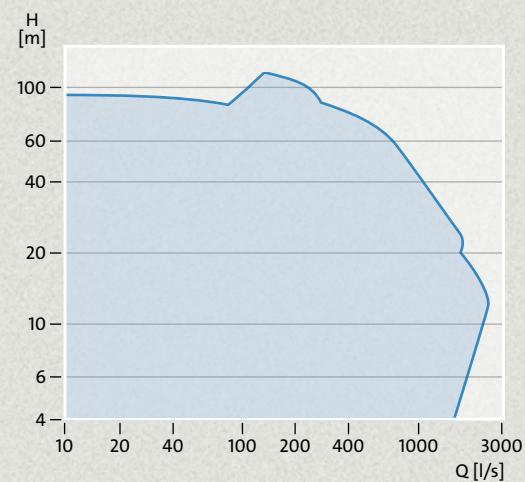
- Motor size: Up to 520 kW
- Flow rate (Q): 2500 l/s (9000 m³/h)
- Head (H): 116 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: 80 to 600
- Free passage: Up to 145 mm
- Insulation class: F (H on request)
- Maximum system pressure: PN 10
- Maximum hydraulic efficiency: 85 %

VARIANTS

- Stainless steel variants to EN 1.4408
- Sensors available for monitoring the pump: bearing and winding temperature, vibrations and water in oil
- A wide range of possibilities for customising to customers requirements

APPLICATIONS:

- RAW WATER INTAKE
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



GRINDER PUMPS – SEG/SEG AUTOADAPT

Submersible sewage grinder pumps for pressurised wastewater pumping designed to optimise performance in your system. The adaptive intelligence built into the AUTOADAPT versions minimises risk factors and reduces costs for installation, commissioning and maintenance.

BENEFITS

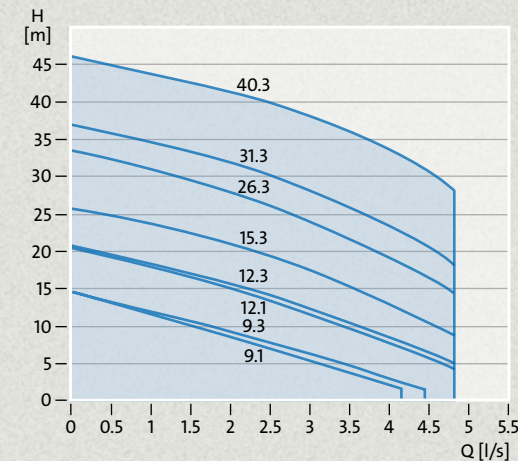
- High discharge pressure enables transfer of wastewater over longer distances
- Plug and pump – all necessary control and protection built into the pump, eliminating complexity (AUTOADAPT version)
- Wear resistant grinder system which grinds solids into small pieces, so they can be pumped away through discharge pipes of a small diameter

TECHNICAL DATA

- Motor size: 0.9 – 4 kW
- Flow rate (Q): 4.75 l/s (17 m³/h)
- Head (H): 45.7 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: DN 40/50
- Insulation class: F
- Free passage: Grinder
- Insulation Class: IP68

APPLICATIONS:

- WASTEWATER TRANSPORT



DRAINAGE SEWAGE PUMPS – DP AUTOADAPT

Transportable multi-vane, semi-open impeller pumps specifically designed for a range of drainage applications with solids handling up to 10 mm. The pumps are made of wear-resistant materials, such as cast iron and stainless steel to ensure reliable operation. The adaptive intelligence built into the AUTOADAPT versions minimises risk factors and reduces costs for installation, commissioning and maintenance

BENEFITS

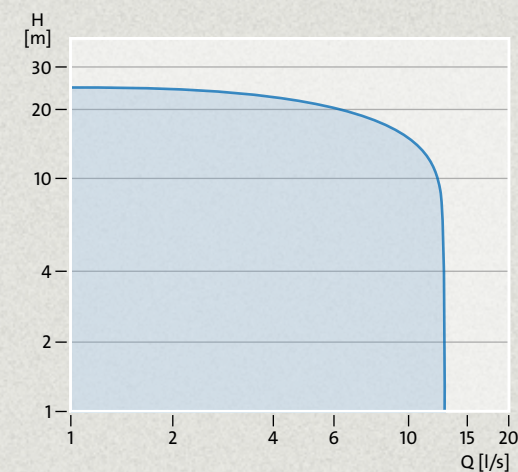
- For use free-standing or for installation on an auto-coupling system with an integrated three-leg stand that keeps the suction inlet clear of the pit bottom
- Patented SmartTrim system for extremely easy impeller adjustment without dismantling the pump, to maintain peak performance; no special tools are required
- Plug and pump – all necessary control and protection built into the pump, eliminating complexity (AUTOADAPT version)

TECHNICAL DATA

- Max flow 12.5 l/s (45 m³/h)
- Max head: 25 m
- Motor size: 0.9-2.6 kW
- Discharge diameter: R2" + DN65
- Free passage: 10 mm
- Insulation class: F

APPLICATIONS:

- FLOOD CONTROL
- WASTEWATER TRANSPORT





EFFLUENT SEWAGE PUMPS – EF AUTOADAPT

Suitable for pumping effluent and other liquids such as drainage and surface water with small impurities and solids handling up to 30 mm size, with a rigid or flexible discharge pipe mounted on the discharge port. The adaptive intelligence built into the AUTOADAPT versions minimises risk factors and reduces costs for installation, commissioning and maintenance

BENEFITS

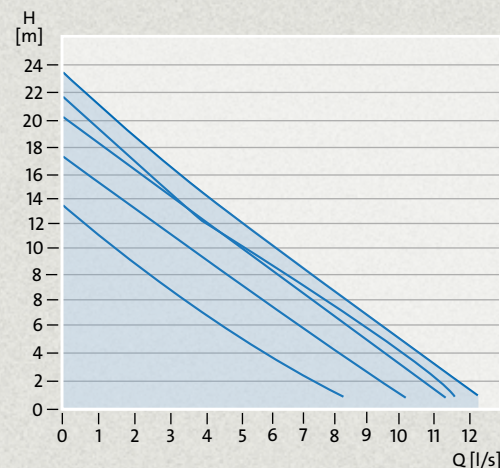
- For use free-standing or for installation on an auto-coupling system with an integrated three-leg stand that keeps the suction inlet clear of the pit bottom
- Patented SmartTrim system for extremely easy impeller adjustment without dismantling the pump, to maintain peak performance; no special tools are required
- Plug and pump – all necessary control and protection built into the pump, eliminating complexity (AUTOADAPT version)

TECHNICAL DATA

- Max flow 12.9 l/s (46 m³/h)
- Max head: 22.5 m
- Motor size: 0.6 - 1.5 kW
- Discharge diameter: R2"
- Free passage: 30 mm
- Insulation class: F

APPLICATIONS:

- FLOOD CONTROL
- WASTEWATER TRANSPORT



CONTRACTOR PUMPS – DW

Contractor pumps for construction dewatering in building and infrastructure sites. The aluminium materials for the main parts contribute to a light weight construction.

BENEFITS

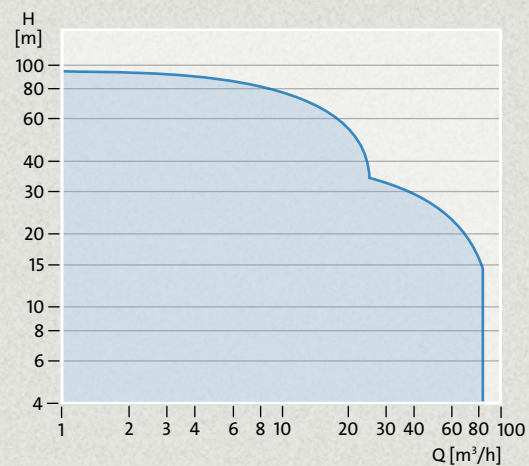
- Rubber lined hydraulic parts and high-chromium stainless steel impeller for extreme high wear resistance
- Integrated level control automatically starts and stops the pump when the built-in electrodes come into contact with water
- Top-discharge with different connection types available for multiple use of the pump, depending on conditions and specific needs

TECHNICAL DATA

- Motor size: 0.7 - 20 kW
- Flow rate (Q): 83 l/s (300 m³/h)
- Head (H): 98 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: 2" - 6"
- Free passage: Strainer
- Insulation class: F
- Maximum hydraulic efficiency: 55%

APPLICATIONS:

- FLOOD CONTROL



HEAVY-DUTY DEWATERING PUMPS – DWK

Contractor pumps for construction dewatering in building and infrastructure sites, designed with semi-open or enclosed impeller. Made of corrosion-resistant materials such as cast iron and high-chrome stainless steel, for harsh environments.

BENEFITS

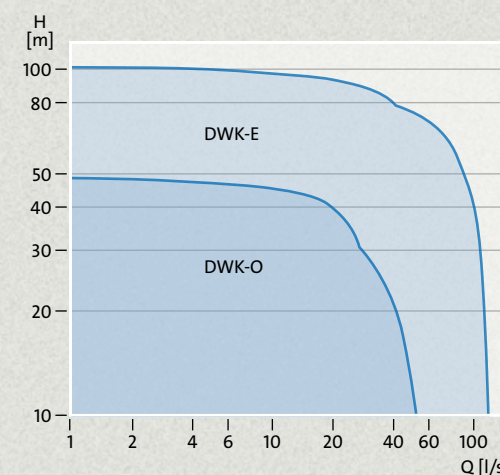
- High reliability and flexibility pumps with protection features for harsh operating environments
- Top-discharge with different connection types available for multiple use of the pump, depending on conditions and specific needs
- Pumps up to 15 kW have a double mechanical seal and pumps from 22 kW to 90 kW have a triple-seal system, for longer operation and less downtime

TECHNICAL DATA

- Motor size: 0.75 - 90 kW
- Flow rate (Q): 120 l/s (430 m³/h)
- Head (H): 89 m
- Liquid temperature: 0 to +40°C
- Discharge diameter: 2" - 6"
- Free passage: Strainer
- Insulation class: F
- Maximum hydraulic efficiency: 75%

APPLICATIONS:

- FLOOD CONTROL



SUBMERSIBLE DRAINAGE PUMPS – DPK

Drainage pumps designed with semi-open or enclosed impeller for pumping water in a wide range of applications. The pumps are made of robust cast iron, ensuring durable operation.

BENEFITS

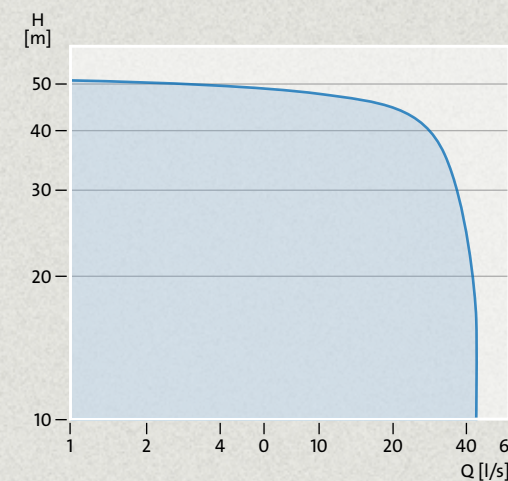
- Semi-open ductile cast iron impeller maintains its performance, ensuring an increased lifetime
- Submerged free-standing installation, or submerged installation on an auto-coupling system
- The double mechanical seal is positioned in the oil chamber and ensures trouble-free operation

TECHNICAL DATA

- Motor size: 0.75 - 22 kW
- Flow rate (Q): 45 l/s (165 m³/h)
- Head (H): 56 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: DN 50 - DN 150
- Free passage: 10 to 20 mm
- Insulation class: F
- Maximum hydraulic efficiency: 74%

APPLICATIONS:

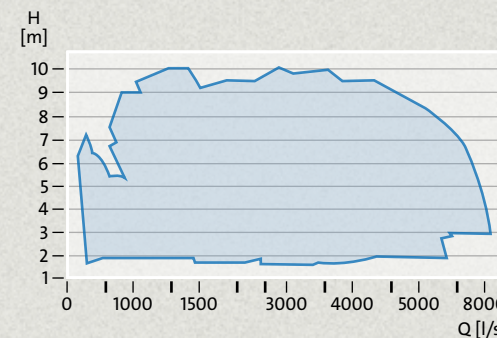
- FLOOD CONTROL



FLOOD CONTROL

Flood control pumping is characterised by a requirement for pump solutions with high flow and low head. The powerful Grundfos range of axial and mixed-flow pumps for flood control are specifically designed for durable use in pumping stations, harbour management and stormwater tank solutions.

Flood control pumps are individually engineered to suit your requirements, ensuring cost-efficient performance. Including Grundfos during the planning stages of the flood control solution ensures that all aspects are considered, such as pumping station design, retention tank design, pump selection, future requirements, and the total life cycle costs.



AXIAL FLOW PROPELLER PUMP – KPL

Axial flow propeller pump designed for the high flow at low head requirements of flood control and other similar duty applications. The Turbulence Optimiser™ reduces turbulence in the gap between the pump volute and the column pipe, increasing efficiency by up to two percentage points.

BENEFITS

- With the Turbulence Optimiser™, for best-in-class hydraulic efficiency of up to 86%
- High-voltage motors for low installation costs
- High-precision one piece propeller with back-swept design reduces clogging

TECHNICAL DATA

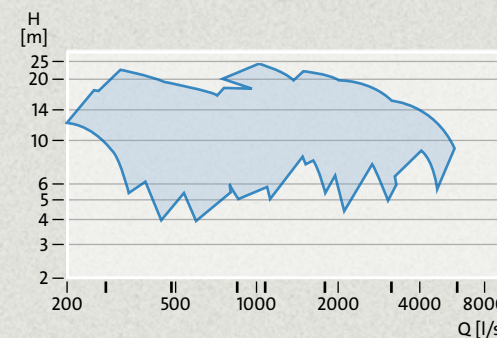
- Motor size: 11 - 700 kW (Up to 850 kW on request)
- Flow rate (Q): 9,200 l/s (33,120 m³/h)
- Head (H): 10 m
- Liquid temperature: 0 to +40 °C
- Discharge diameter: Up to 2200 mm
- Insulation class: F
- Maximum installation depth: 20 m
- Maximum hydraulic efficiency: 86%

VARIANTS

- Propeller in stainless steel is standard; other materials available on request
- Sensors for monitoring the pump: bearing and winding temperature, vibrations and water in oil

APPLICATIONS:

- RAW WATER INTAKE
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



MIXED FLOW PUMP – KWM

Mixed flow pump designed for the high flow at low head requirements of, wastewater treatment recirculation control and other heavy-duty pumping applications.

BENEFITS

- Simple pump design for long lifetime
- Robust, reliable and efficient, offering maximum value for money
- High-voltage motors for low installation costs

TECHNICAL DATA

- Motor size: 11 - 700 kW (Up to 850 kW on request)
- Flow rate (Q): 5,555 l/s (20,000 m³/h)
- Head (H): 20 m (Up to 40 m on request)
- Liquid temperature: 0 to +40 °C
- Discharge diameter: column (FPV upto DN 2,200)
- Insulation class: F
- Maximum installation depth: 20 m
- Maximum hydraulic efficiency: 85%

VARIANTS

- Impeller in cast iron is standard; stainless steel available on request
- Sensors for monitoring the pump: bearing and winding temperature, vibrations and water in oil

APPLICATIONS:

- RAW WATER INTAKE
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



MIXERS, FLOWMAKERS, AERATION, EJECTORS AND DIFFUSERS

Mixers, flowmakers and recirculation pumps available from Grundfos cover everything from small-scale mixers, ideal for prefabricated pumping stations, to large-scale flowmakers created for large tanks and basins and recirculation pumps for moving large flows at low head – a requirement often seen at treatment plants, for recirculation between process tanks.



MIXERS – AMD/AMG

Mixers for keeping particles evenly distributed in wastewater and sludge, preventing sedimentation and supporting treatment processes, available direct-driven (AMD) in 8-pole versions from 1.5-4.5 kW, or planetary gear-driven with (AMG) stainless steel propellers from 1.5-18.5 kW.

BENEFITS

- Hydrodynamic 2 or 3 blade propellers help ensure high efficiency and non-clogging operation
- Full range of high-quality installation accessories
- Suitable for continuous and variable speed (CUE) operation

TECHNICAL DATA

- Motor size: 1.5 - 18.5 kW
- Liquid temperature: 5 to 40 °C
- Thrust to power ratio:
AMD: 0.17 to 0.22 N/W
AMG: 0.24 to 0.33 N/W
- Propeller diameter: 450 - 910 mm
- Propeller speed: 330 - 710 rpm
- Axial Thrust: 434 - 4350 N

APPLICATIONS:

- WASTEWATER TRANSPORT
- WASTEWATER TREATMENT



FLOWMAKERS – AFG

Flowmakers for keeping particles evenly distributed in even the largest wastewater tanks and basins, preventing sedimentation and supporting treatment processes. Gear-driven flowmakers are available from 1.3-7.5 kW.

BENEFITS

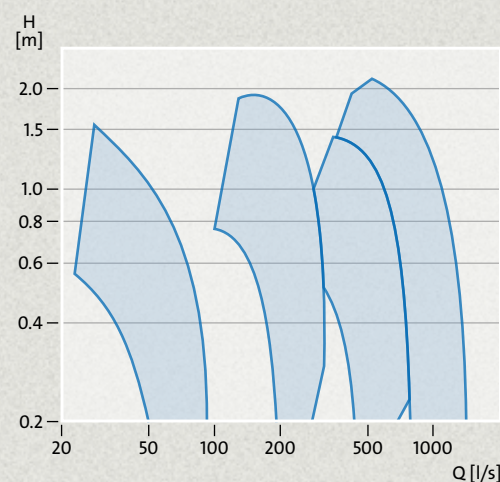
- Hydrodynamic 2 or 3 blade propellers help ensure high efficiency and non-clogging operation
- Full range of high quality installation accessories
- Suitable for continuous and variable speed (CUE) operation

TECHNICAL DATA

- Motor size: 0.8 - 7.5 kW
- Liquid temperature: 5 to 40 °C
- Thrust to power ratio: 0.52 to 0.97 N/W
- Propeller diameter: 1300 - 2660 mm
- Propeller speed: 23 - 95 rpm
- Axial Thrust: 770 - 6440 N

APPLICATIONS:

- WASTEWATER TREATMENT



SUBMERSIBLE RECIRCULATION PUMPS – SRP

Submersible recirculation pumps to handle large flows with low heads that are equally suitable for wastewater treatment plants and flood control. The triple sealing system ensures maximum protection of the mechanical shaft seal, and the bracket makes installation very easy.

BENEFITS

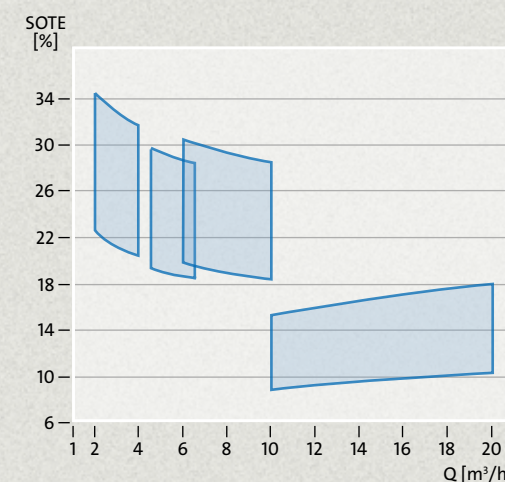
- High efficiency stainless steel propeller with self-cleaning properties
- Wide performance range
- Electronic leak sensor in gearbox/shaft seal housing

TECHNICAL DATA

- Motor size: 0.8 - 24 kW
- Flow rate (Q): 1450 l/sec (5250 m³/h)
- Head (H): 2.1 m
- Liquid temperature: 5 to 40 °C
- Discharge diameter: 300 - 800
- Insulation class: F
- Maximum hydraulic efficiency: 68 %

APPLICATIONS:

- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**



SEWAGE AERATION DIFFUSERS – SAD

A large range of energy efficient, sturdy and flexible membrane disc and tube fine bubble diffusers for process tanks and other wastewater treatment applications. For new build or refurbishment, systems include pipes and fittings, manifold, anchors and diffusers.

BENEFITS

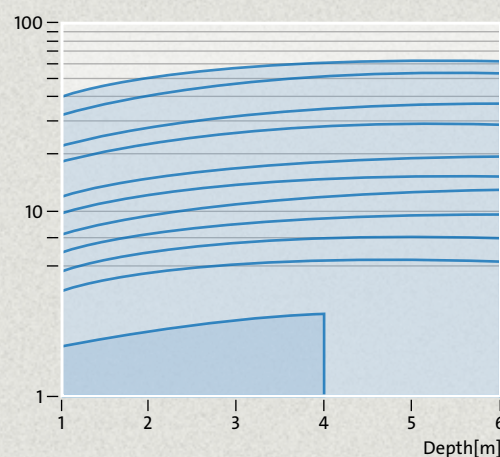
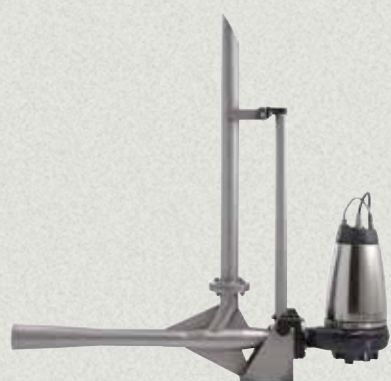
- Customised energy efficient, fine bubbled diffuser systems delivered with complete working layout drawings and a calculation of system performance
- Diffuser systems are delivered pre-assembled, with fast and easy one-bolt on-site installation of the air distribution pipes
- A large range of disc and tubular diffusers, with system components available in a range of materials for different wastewater types

TECHNICAL DATA

- Disc diffusers 9" & 12" Maximum Qnominal 8.0 Nm³/h
- Tube diffusers 2" & 3" Maximum Qnominal 34.0 Nm³/h

APPLICATIONS:

- **DRINKING WATER TREATMENT**
- **WASTEWATER TREATMENT**



EJECTORS – AEROJET

Self-aspirating aerator that keeps aerobic treatment processes running and also helps to avoid odour problems in wastewater storage, as anaerobic zones can be eliminated providing mixing and aeration in the same device.

BENEFITS

- Robust industrial design for continuous operation, made completely in stainless steel for strength
- Easy to install, operate and maintain, as they do not require any blowers, air distribution piping or control valves
- Submerged aerator increases oxygen transfer time, and the submerged installation reduces noise and limits aerosol formation at the tank

TECHNICAL DATA

- Motor size: 4 - 50 kW
- Liquid temperature: 0 to 40 °C
- Standard Oxygen Transfer Rate at 4 m submersion: SOTR 61 [kgO₂/h]

APPLICATIONS:

- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**



PREFABRICATED PUMPING STATIONS

Grundfos offers a full range of functional modular pumping stations – complete with all necessary pumps, piping, valves and level controls. The pump pit, pumps and controls can be combined to suit specific requirements for each individual application.

The Grundfos prefabricated pumping stations are available in a variety of sizes and heights. Depending on the selected pump, applications can be for drainage, effluent, stormwater and wastewater. The pumping stations are made either from polyethylene (PEHD) or Glass Reinforced Plastic (GRP). All pre-installed piping is stainless steel or PEHD.



PREFABRICATED PUMPING STATIONS

Sturdy and well-designed pump pit sized to suit requirements, with up to three wastewater pumps easily installed on auto couplings.

All necessary components such as piping and valves are built in or placed in a separate valve chamber. Grundfos Dedicated Control offer operational reliability, integration and automatic optimisation.

BENEFITS

- Sturdy construction from high quality corrosion-free materials;
- Designed for easy and fast installation
- The design of the pit sump limits sludge and odour problems and is for unattended operation and remote control

PRODUCT DATA:

- Maximum diameter: 400 - 4000 mm
- Maximum length: 12 m
- Material of tank: PEHD / GRP

APPLICATIONS:

- WASTEWATER TRANSPORT
- FLOOD CONTROL

COMPONENTS

- Primarily designed for up to three Grundfos wastewater pumps
- Grundfos controllers offer a full range of options for monitoring, control, communication and optimisation.
- Options for level sensors, external control units and valves

CONTROLS & MONITORING

Grundfos can supply dedicated communication modules and controls for every eventuality, ensuring trouble-free and continuous operation of complex pumping solutions, offering open protocols, control and monitoring with data collection options, all fully compatible with your management system.

For many of our monitoring and control solutions, the packaged software Grundfos PC Tool is used for commissioning, monitoring pump status, adjusting the settings, start/stop of the pumps, query data, generating reports on the operation, and establishing service reports. A huge range of main functions and specialised functions, depending on the application, is also easily accessible via the PC tool, or from the user interface.



REMOTE MANAGEMENT – GRM

Grundfos Remote Management is a cost-effective and straightforward way to monitor and manage pump installations in water supply and wastewater infrastructure and irrigation. It reduces the need for onsite inspections and in the event of an alarm or warning, the relevant people are notified directly.

COMMUNICATION:

- CIU271 communication interface enables data transmission via GPRS / SMS from Grundfos pumps and controllers
- Built-in multi-purpose I/O board allows the connection of sensors and switches
- A fixed low fee covers data traffic, hosting costs and system support, including back-up of all data

- Live monitoring, analysis and adjustments, monitoring of energy consumption, and optimisation of system performance.
- Manage service & maintenance; plan service work on the basis of actual operating data and get notification when service is due

BENEFITS:

- A full overview of the operation, performance and trends and see the status of your entire system on your own map or aerial photo

APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT
- WATER DISTRIBUTION
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



MOBILE PUMP CONTROL – GRUNDFOS GO REMOTE

Designed to save time and effort for the pump owner, this is the most comprehensive platform for mobile pump on the market, offering intuitive, handheld assistance and access to the Grundfos online tools, saving valuable time in reporting and data collection.

COMMUNICATION:

- Wink function, live data feed, frequently needed shortcuts (wizard), and improved alarm logging
- User-friendly interface
- Infrared, radio, or universal MI 301 dongle
- MI 201 is a complete box product including an iPod
- Supports infrared connection to existing products, and radio communication to newer products.

BENEFITS

- Group pumps, change configuration parameters and monitor pump data
- Descriptive error codes make trouble shooting easy and intuitive
- Time saving, with quick links to documentation, replacement tool, and automatic updates

APPLICATIONS:

- WATER DISTRIBUTION
- WASTEWATER TRANSPORT



FIELD BUS COMMUNICATION INTERFACES – CIM/CIU

The Grundfos fieldbus concept is the ideal solution for complete control of pumps and pump systems. The Communication Interface Module (CIM) and the Communication Interface Unit (CIU) enable data communication via open and interoperable networks.

COMMUNICATION

- Available with GENIbus, BACnet MS/TP, LON, Modbus RTU, PROFIBUS DP and GSM/GPRS/SMS

APPLICATIONS:

- **RAW WATER INTAKE**
- **WATER DISTRIBUTION**
- **WASTEWATER TRANSPORT**

BENEFITS

- Ease of installation and commissioning, user-friendliness, and great value for money
- All modules are based on standard functional profiles for easy integration into the network and easy understanding of data points
- Supports a wide range of Grundfos products

COMPONENTS

- CIM/CIU 100/110 LON is mainly used for HVAC applications
- CIM/CIU 150 Profibus DP is mainly used for factory and process automation
- CIM/CIU 200 Modbus RTU is used for versatile automation e.g. HVAC and wastewater applications
- CIM/CIU 250 GSM is mainly used for water supply and wastewater applications
- CIM/CIU 270 GRM is used together with Grundfos Remote Management
- CIM/CIU 300 BACnet is used for building automation



MOTOR PROTECTION UNIT – MP 204

Reliable, easy to set up and easy to use motor protection for all Grundfos pumps and applications, for motors ranging from 3 to 999 amps and voltages from 100 to 480 VAC that protects pump motors against under-voltage, overvoltage and other variations in power supply and overheating.

COMMUNICATION

- Supports communication with monitoring equipment or other external units via a number of different fieldbus protocols using the Communication Interface Unit (CIU)
- Compatible with Grundfos Remote Management
- Connect to any SCADA system, allowing remote access to pump data anywhere

APPLICATIONS:

- **RAW WATER INTAKE**
- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**
- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**

BENEFITS

- Power factor measurement, giving an indication of clogging in the intake or impeller wear
- Motor power consumption continually checked with precision, stopping the pump before dry-running and preventing pump damage
- Alerts for ground failure/insulation resistance, allowing preventive maintenance of the motor, cables, or cable joints

COMPONENTS

- The Control MP204 cabinet is also available with DOL (Direct on-line), SD (Star delta) and SS (Soft starter) starting methods.



MULTI-PUMP CONTROLLER – MPC

Pressure boosting permits monitoring and control of up to six identical pumps connected in parallel and will minimise energy consumption and cut energy costs straight out of the box for the highest possible system energy efficiency.

COMMUNICATION

- Supports communication with monitoring equipment or other external units using the Communication Interface Module (CIM) via a number of different fieldbus protocols
- Compatible with Grundfos Remote Management

BENEFITS

- Easy to install and configure; Wizard helps the user to configure the system when you first start, ensuring the desired parameters are set up in the correct sequence
- Standby pump allocation, forced pump changeover and dry-running protection help to increase system reliability and decrease downtime and costly maintenance

- Soft pressure build-up function minimises risk of water hammer, reducing the risk of water loss and costs of pipe maintenance

COMPONENTS

The basic components of the Control MPC are:

- CU 352 – control unit
- IO 351 – primary I/O unit

The Control MPC comes in variants for mains operation, for external VFD speed control, or with speed control built in.

APPLICATIONS:

- **WATER DISTRIBUTION**



WASTEWATER CONTROLS – DEDICATED CONTROLS

Control up to six pumps in wastewater applications in main, network and pressurised pumping stations. A range of advanced features allow for system measurement and calculation, and integration with other monitoring, control and energy optimising equipment.

COMMUNICATION

- Supports communication with monitoring equipment or other external units Communication Interface Module (CIM) via a number of different fieldbus protocols
- Compatible with Grundfos Remote Management
- Communication using wired or wireless (GPRS/GSM) networks to SCADA and BMS systems.

BENEFITS

- The anti-clogging attributes of the flush and reverse function are unique to Dedicated Controls, as is the ability for continuous energy optimisation according to duty condition
- User-friendly display interface with an intuitive and easy-to-follow installation wizard and you can also choose your language

- In addition to a comprehensive range of basic features, defined inputs/outputs can be added for system functions specific for the pumping station

COMPONENTS

- The main components of the system Dedicated Controls are:
- CU 362 – control unit
- IO 351 – basic I/O module
- IO 113 – protection module for pumps sensors
- SM 113 – sensor module

APPLICATIONS:

- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**



EXTERNAL FREQUENCY CONVERTERS – CUE

A complete range of external frequency converters designed for speed control of a wide range of Grundfos pumps for water supply, wastewater and irrigation applications. A special start-up guide will lead you through the set-up of the CUE.

COMMUNICATION

- Supports communication with monitoring equipment or other external units via a number of different fieldbus protocols using the Communication Interface Unit (CIU)
- Compatible with Grundfos Remote Management.

BENEFITS

- Predefined control modes, sensor range and pump family data make it very easy to set up a system in only a few steps
- Shares the unique Grundfos intuitive interface with Grundfos control equipment
- Very easy installation and set-up – just 16 steps to get a system up and running

COMPONENTS

- Additional functions available that for example provide better application support and system optimisation
- Additional analog input/output board, providing for additional inputs, for example temperature sensors for monitoring bearings
- A range of motor filters available

APPLICATIONS:

- **RAW WATER INTAKE**
- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**
- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**



LEVEL CONTROLLERS – LC/LCD

Single or two-pump controllers designed for level control and for monitoring and protection of pumps in wastewater, water supply and drainage systems that offer effective and reliable control functions, offering basic control for basic needs with easy commissioning and maintenance.

COMMUNICATION

- The cabinet can be fitted with a Communication Interface Unit (CIU) to transmit the data collected via GPRS/GSM networks
- Compatible with Grundfos Remote Management.

BENEFITS

- A perfect match for Grundfos pumps, supplied as a complete controller incorporating motor protection relay and control unit and offering protection against water hammer
- Automatic pump changeover, ensuring even distribution of operating hours on both pumps
- Selection of automatic test run (every 24 hours) during long periods of inactivity, and of alarms and alarm resetting, automatic restart and more

COMPONENTS

- Three series with a total of six versions are available, operated by level bells, float switches or electrodes
- A comprehensive range of accessories is also available for the LC/LCD series
- Use with direct on-line start motors up to 11 kW, or the LC/LCD range can also be supplied with an integrated star-delta starter for applications requiring larger motors, up to 30 kW.

APPLICATIONS:

- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**



SAFETY EQUIPMENT, GAS WARNING SYSTEMS – CONEX® DIA-G AND DIS-G

The Conex® DIA-G (Dosing Instrumentation Advanced-Gas) and DIS-G (Dosing Instrumentation Standard-Gas) safety system monitors chlorine dioxide systems, gas dosing installations and gas storage rooms. Gas warning parameters monitored are Cl₂, ClO₂ and O₃, DIA-G can additionally monitor NH₃ and HCl.

BENEFITS

- Monitoring of two different gas storage rooms or two different gases at the same time
- Simultaneous display of both measured values
- Optimum safety due to permanent sensor monitoring, alarm relay and optional backup operation by connection of an external buffer battery

TECHNICAL DATA

- Display: High resolution, plain-text LCD (DIA-G) LCD, 2 lines, 2x 16 characters (DIS-G)
- Indication mode: Measured value as a physical variable
- Permissible operating temperature: 0 to +50 °C (DIA-G) 0 to +45 °C (DIS-G)
- Permissible relative humidity: Maximum 90 % (non condensing)
- Mains voltage: 110-240 V, 50/60 Hz or 24 VDC (DIA-G) 115/120 V, 50/60 Hz or 230/240 V, 50/60Hz (DIS-G)
- Power consumption: Approximately 20 VA (DIA-G) Approximately 5 VA (DIS-G)
- Enclosure class: IP 65

APPLICATIONS:

- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**
- **WASTEWATER TREATMENT**



MEASUREMENT AND CONTROL SYSTEMS – CONEX® DIA

The Conex® DIA (Dosing Instrumentation Advanced) series of measuring amplifiers and controllers for one or two parameters – Cl₂, ClO₂, O₃, H₂O₂, PAA, pH, redox (ORP) – is designed for users without previous knowledge. Conex® units monitor themselves, ensuring high water quality at all time and come in three versions. DIA preassembled systems combine controllers and tried-and-tested electrodes on a plate ready for quick installation.

BENEFITS

- The calibration function carries out a plausibility check to prevent mishaps
- The logbook function records sensor data and calibration values complete with date and time
- The units also keep an eye on the temperature and make adjustments as necessary

TECHNICAL DATA

- Display: High resolution, plain-text LCD
- Indication mode: Measured value as a physical variable
- Controller: PI / PID-controller
- Temperature compensation: Manually or automatically by Pt 100 sensor
- pH-compensation: Chlorine (Cl₂) measurement: automatically by pH measurement
- Permissible operating temperature: 0 to +50 °C (DIA-G)
- Permissible relative humidity: Maximum 90 % (non condensing)
- Mains voltage: 230/240 V, 50/60 Hz or 115/120 V, 50/60 Hz or 24 VDC
- Power consumption: Approx. 15 VA
- Enclosure class: IP 65 (wall-mounted) IP 54 (panel-mounted)

APPLICATIONS:

- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**



PHOTOMETRIC WATER ANALYSIS – DIT-M PHOTOMETER AND DIT-L COMPACT PHOTOMETER

The DIT-M photometer and DIT-L compact photometer with the DIT-IR interface module offer water analysis from a state-of-the-art measuring unit of up to 15 parameters in water treatment. Long-term stable reagents in tablet form are used.

BENEFITS

- The DIT-M photometer operates with 6 interference filters and long-term stable LEDs as light sources without moving parts
- Up to 1000 (DIT-M) or up to 16 (DIT-L compact) data sets can be saved
- Data transfer to a PC or a printer is possible with an infrared interface via the optional DIT-IR module

TECHNICAL DATA

- DIT-M: Aluminium, bromine, chlorine, (free, total, combined), chlorine dioxide, chloride, chlorite, cyanuric acid, iron, fluoride, manganese, ozone, phosphate, pH, acid capacity KS 4.3., hydrogen peroxide
- DIT-L: Chlorine, chlorine dioxide, chlorite or ozone as well as the pH value.

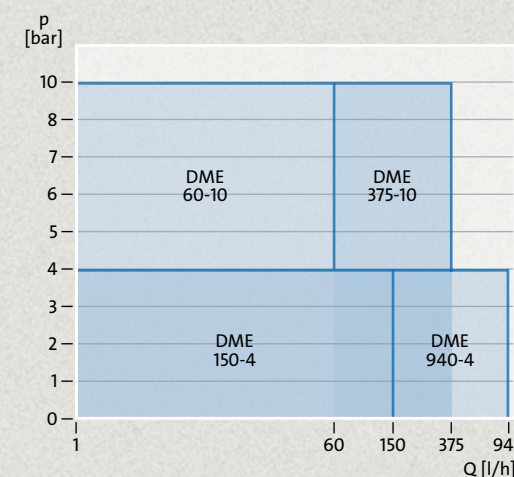
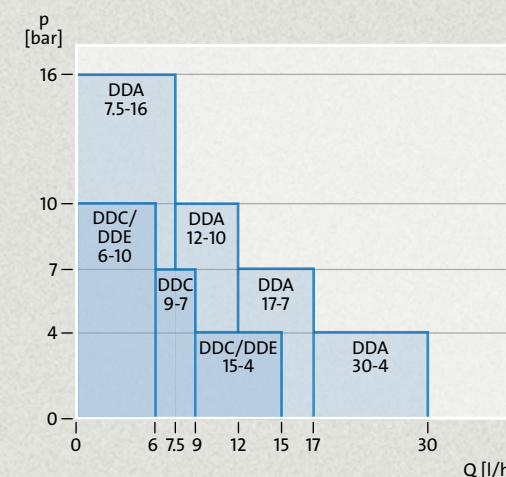
APPLICATIONS:

- **WATER DISTRIBUTION**
- **WASTEWATER TREATMENT**

DOSING AND DISINFECTION

Grundfos offers one of the most extensive product ranges in the market for dosing and disinfection, covering everything from disinfection of drinking water to water treatment in highly sensitive industrial processes.

Grundfos can supply complete dosing pump systems for large or small volumes and based on different technologies for flocculation, disinfection, and pH adjustment. Moreover, the Grundfos range of electronic and electrochemical accessories offers complete control of your dosing and disinfection processes and can be seamlessly integrated into your system. We can also advise and supply disinfection solutions using chlorine compounds such as chlorine gas (Cl_2), sodium hypochlorite (NaOCl), and chlorine dioxide (ClO_2).



SMART DIGITAL – DDA, DDC AND DDE

Diaphragm dosing pumps with powerful variable-speed stepper motors offer high dosing accuracy and flow control, longer maintenance intervals due to the universal chemical resistance of the full-PTFE diaphragm, and reduced energy consumption from the state-of-the-art drive technology.

BENEFITS

- **Modularity:** The included click-stop mounting plate is an example of the unique flexibility offered, with only a few variants.
- **Simplicity:** Easy handling and perfect overview and control ensure simple installation, commissioning and operation.
- **Flow intelligence:** The pump monitors the dosing process of liquids when the FlowControl function is activated, for advanced process reliability.

TECHNICAL DATA

- Flow (Q): 0.0025 to 30 l/h
- Operating pressure: 16 - 4 bar
- Setting range: Up to 3000

APPLICATIONS:

- RAW WATER INTAKE
- WATER DISTRIBUTION
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT

DIGITAL DOSING – DME

Digital Dosing pumps that combine perfect precision and user-friendliness for large dosing quantities from 60 l/h to 940 l/h, offering all the benefits of the highly acclaimed smaller Digital Dosing range, making accurate dosing is easier than ever.

BENEFITS

- Wide dosing range with a turndown ratio of 1:800 for a range of water supply, wastewater and water treatment applications
- Easy to install, the operator can set the pump to discharge exactly the quantity of dosing liquid required in the application
- Available with Profibus interface to supply performance data and status information for quality control, preventive maintenance and future reference.

TECHNICAL DATA:

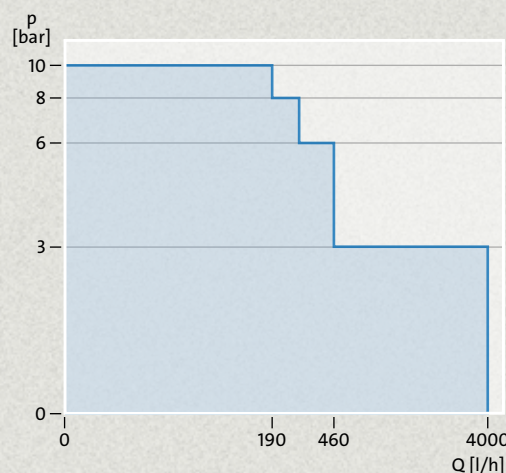
- Flow (Q): 0.075 - 940 l/h
- Operating pressure: 10 - 4 bar
- Setting range: up to 1:800

APPLICATIONS:

- RAW WATER INTAKE
- DRINKING WATER TREATMENT
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT

VARIANTS:

- The dosing heads of DME pumps are available in stainless steel, PVDF, and environmentally friendly, cost-efficient polypropylene.



MECHANICAL DIAPHRAGM DOSING PUMPS

– DMX

Robust diaphragm-based design with high-quality motors for many dosing applications, they require minimum maintenance and are highly versatile, covering a wide flow range and offering a variety of dosing head sizes, materials and accessories.

BENEFITS

- Dosing from 0.4 up to 2 x 4000 l/h
- Compact design – saves money and space
- Smooth and low-pulsation dosing, proven technology

TECHNICAL DATA

- Motor size: 0.09 - 2.2 kW
- Flow rate (Q): 0.4 - 2 x 4000 l/h
- Maximum system pressure: 10 bar
- Liquid temperature: Up to +70 °C
- Discharge diameter: DN 8 to DN 65
- Enclosure class: IP 55 or IP 65 (depends on motor)
- Dosing flow variation: below +/- 1,5 %
- Dosing linearity: below +/- 4 %

APPLICATIONS:

- RAW WATER INTAKE
- WATER DISTRIBUTION
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



FULL-VACUUM CHLORINE GAS DOSING SYSTEMS

– VACCUPERM

Gas dosing systems that work in accordance with the tried-and-tested full-vacuum principle with the addition of gaseous chlorine regulated reliably and precisely.

BENEFITS

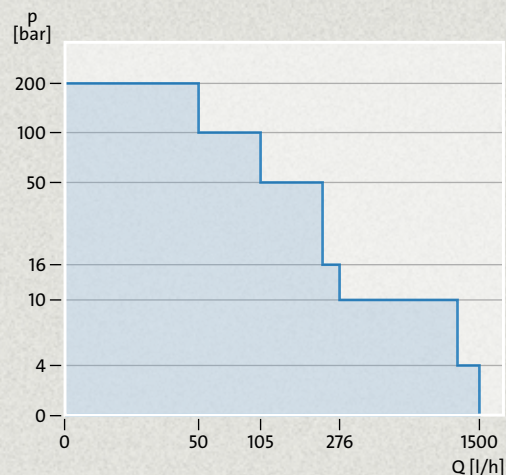
- Safe operation due to the vacuum principle and easy handling
- Reliable full-vacuum method with chlorine gas for a reliable disinfection process
- Very straightforward handling for an operation, saving time and therefore running costs

TECHNICAL DATA

- VGB: up to 2 kg/h
- VGA: up to 10 kg/h
- VGS: up to 200 kg/h

APPLICATIONS:

- DRINKING WATER TREATMENT
- WATER DISTRIBUTION
- FLOOD CONTROL
- WASTEWATER TREATMENT



HYDRAULIC PISTON DIAPHRAGM DOSING PUMPS

– DMH

Extremely strong, robust pumps for applications requiring a reliable dosing and high-pressure capability for high-pressure applications from 50 up to 200 bar. Highly versatile for a wide flow range and offering a variety of dosing head sizes, materials and accessories.

BENEFITS

- EX/ATEX and API 675 versions available
- Very accurate dosing
- Dosing of flammable liquids
- Full PTFE membrane as a standard

TECHNICAL DATA

- Motor size: 0.09 - 2.2 kW
- Flow rate (Q): 0.15 - 2 x 1500 l/h
- Maximum system pressure: 200 bar
- Discharge diameter: DN 4 to DN 32
- Enclosure class: IP 65
- Dosing flow variation: Below +/- 1 % (DMH 28x)
- Dosing flow linearity: Below +/- 1 % (DMH 28x)

APPLICATIONS:

- RAW WATER INTAKE
- WATER DISTRIBUTION
- WASTEWATER TRANSPORT
- FLOOD CONTROL
- WASTEWATER TREATMENT



ELECTRO-CHLORINATION SYSTEMS

– SELCOPERM

Selcoperm electrolyzers produce sodium hypochlorite electrolytically, directly from a solution of common salt using electricity, offering health and safety benefits for operators and savings on transport and handling.

BENEFITS

- Requires only salt, water and electricity for low-cost generation of your disinfectant
- Generates chlorine on site according to your requirements, saving you transportation and storage costs
- Common salt is non-toxic and easy to store
- Customised solutions on request

TECHNICAL DATA

- Undivided cells
- 110 g/hour -> 1.8 kg/hour
- NaOCl conc. up to 7 g/l

APPLICATIONS:

- DRINKING WATER TREATMENT
- WATER DISTRIBUTION
- FLOOD CONTROL
- WASTEWATER TREATMENT



CHLORINE DIOXIDE PREPARATION AND DOSING SYSTEMS – OXIPERM

Chlorine dioxide generators that are extremely easy to use, bringing together precise dosing technology, an ideal mixture of components, quick chemical reactions with Maximum conversion rates, and outstanding reliability for effective disinfection

BENEFITS

- Compact design, also for confined spaces, offering easy installation
- Low operating costs from a solution that saves time
- Innovative dosing and calibration technology; always the optimum solution for your specific application

TECHNICAL DATA

- Oxiperm Pro 162 OCD - 5/10/30/60 g/hour
- Oxiperm 164 C 450 g/hour -> 2.5 kg/hour
- Oxiperm 164 D 120 g/hour -> 750 g/hour
- Oxiperm 166 up to 10 kg/hour

APPLICATIONS:

- **DRINKING WATER** TREATMENT
- **WATER** DISTRIBUTION
- **FLOOD** CONTROL
- **WASTEWATER** TREATMENT



PREPARATION AND DOSING INSTALLATIONS – POLYDOS

The Polydos series are flexible, environmentally friendly and economic dosing and preparation systems that range from three chamber installations for preparation of dry or liquid polymers. We customise the system to match the application.

BENEFITS

- Compact, yet flexible installation of fully integrated system, including material handling, preparation and maturing and solution dosing
- Environmentally friendly and economical to use with precise prepared, precise dosing and water metering and with variants that meet the customers' exact needs
- Configured according to the required polymer quantity in kg/h or require volume of prepared solution, the concentration of the preparation polymer, and the maturation time in minutes

VARIANTS

- **Polydos 412** fully automatic three-chamber preparation system for liquid and dry polymers with PLC and graphic display for convenient preparation and dosing of dry or liquid flocculents and coagulents in a broad capacity spectrum.
- **Polydos 412 ECO** preparation system for liquid and dry polymers.
- **TD423** dry material feeding system for feeding of constant or varying quantities of powders or granules, such as lime hydrate, aluminium sulphate, diatomite, phosphates, activated carbon or polymers.
- **Polydos 460** fully automatic two-chamber preparation system for liquid polymers with PLC and graphic display for convenient preparation and dosing
- **KD 440** fully automatic one-chamber dry material preparation system with PLC and graphic display for preparation and dosing of solutions out of dry materials.

TECHNICAL DATA

- Capacity range: Up to 10 m³/h of prepared solution with 60 minutes maturation time
- Concentration range: 0,05 to 0,5%
- Water inlet: Shut-off valve, solenoid valve , pressure reducing valve and contact water meter.
- Maximum viscosity of the polymer solution: 2500 mPas
- Protection control panel: IP 65
- Protection agitators: IP 55
- Ultra-sonic level sensor to enable flow proportional preparation

MATERIAL:

- Dry material feeder and feeding worm, agitator shaft and stainless steel propeller
- Tank material: PPH or SS
- Lines and connections: PVC-U

APPLICATIONS:

- **DRINKING WATER** TREATMENT
- **WASTEWATER** TREATMENT

NOTES

Grundfos Water Utility – optimised water solutions

Grundfos Water Utility is a full-range supplier of intelligent pumps and systems for all water supply and wastewater applications. We optimise pumping solutions to provide maximum reliability and resource efficiency for our customers. Our solutions are made with tried and tested technology and our expertise is part of any delivery.

We offer solutions and expertise within the following applications:

- **RAW WATER INTAKE**
- **DRINKING WATER TREATMENT**
- **WATER DISTRIBUTION**
- **WASTEWATER TRANSPORT**
- **FLOOD CONTROL**
- **WASTEWATER TREATMENT**