

# FOOD APPLICATION PUMPS

Nourish your business with Grundfos





## GRUNDFOS AND THE FOOD INDUSTRY

For every conceivable pump application in food processing and manufacturing, the full-line Grundfos range gives you better peace of mind and optimal compatibility.

### Dairy

Full of life and goodness, milk is synonymous with good health and nutrition. Hygienic pump design and gentle handling keep your fresh milk and dairy products just the way you want them.

### Confectionery and chocolate

A taste of the good life starts with stable temperature control, precise solids handling and process control. Grundfos pumps are robust for reliability and easily cleaned for consistent quality.

### Processed foods

When you make something for every taste and need, we have a pump to keep the process moving. Extremely viscous mixtures, crystallines and corrosive or abrasive media, there's nothing we can't handle gently.

### 150 years of service

Grundfos is the world's largest pump manufacturer with pump ranges covering every end of the industrial spectrum. The food industry is no exception. We are certainly no stranger to food production; our expertise and heritage in this quality-driven industry go back 150 years through our Hilge subsidiary.

### Quality products need quality pumps

Our pumps are installed in food processing plants, confectionery and chocolate factories and dairies around the world. Grundfos pumps are ideal for this kind of work because they are designed specifically to maintain product integrity and consistency, as well as to be CIP and SIP compatible. And then there's peace of mind: Grundfos

pumps are synonymous with reliability and are backed by a global network complete with service partners in more than 50 countries. With Grundfos pumps you really can ensure that your product lives up to your standards – batch after batch.

### The sign of top industrial quality

The characteristic stainless steel Grundfos Industrial Solutions sign symbolises our commitment to industrial professionals. Our pump ranges cover it all: cleaning, dosing, water treatment, water supply, wastewater, cooling, boiler feeding, heating, fire protection and general or sanitary processing. Grundfos Industrial Solutions is determined to become your preferred pump supplier. Read on and let us convince you.



# WE HAVE YOUR PRODUCTION FLOOR COVERED

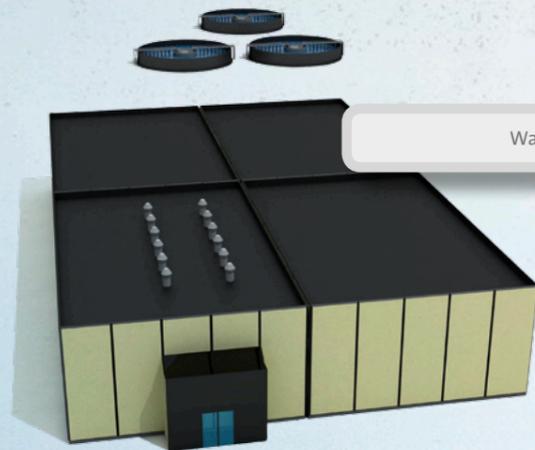
Grundfos is a full-line supplier of pumps for plant service systems and processes. We produce pumps for every facility in the industrial water circuit: Delivering water to the plant, moving the water inside the plant to where it's

needed, e.g. for boiler feeding or cooling systems. Finally, we have the pumps for leading the wastewater out of the plant to a treatment facility..



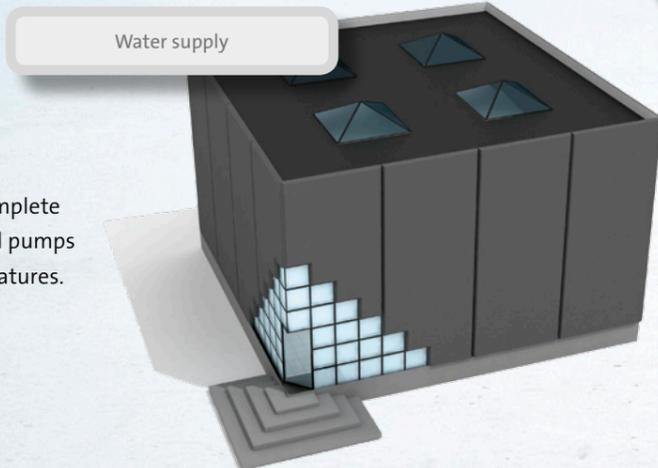
Heating

**Heating**  
Our complete range of reliable, energy-optimised circulators ensures stable heating and cooling.



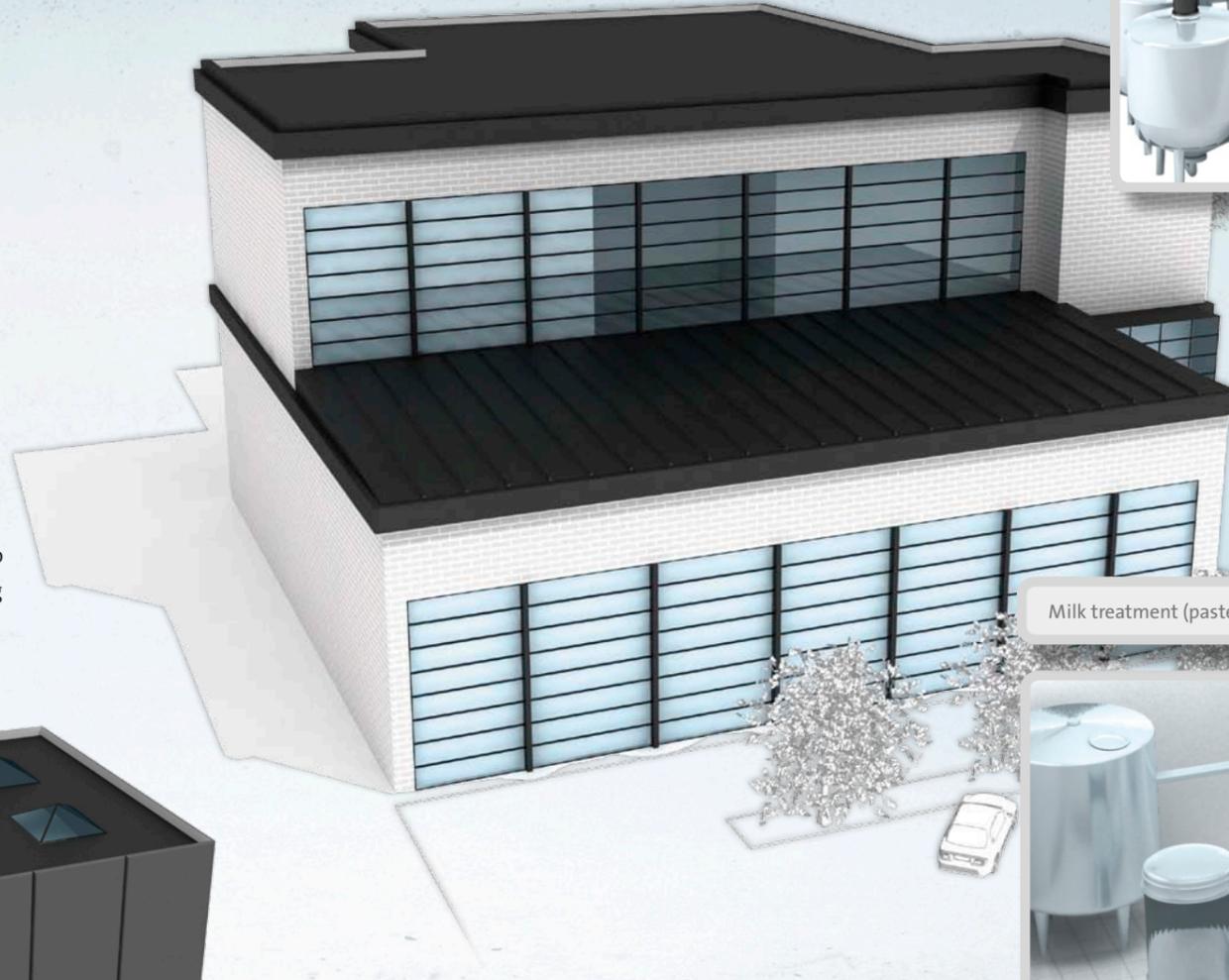
Wastewater

**Wastewater**  
Our complete range of corrosion-resistant, submersible and dry-mounted wastewater pumps also comes with advanced monitoring and control features.



Water supply

**Water supply**  
Ensure a stable water supply with our complete range of highly reliable, energy-optimised pumps with advanced monitoring and control features.



Yoghurt production



**Yoghurt production**  
Both the yoghurt and solid ingredients receive the gentlest handling by Grundfos sanitary pumps.

Milk treatment (pasteurisation)



**Milk treatment (pasteurisation)**  
Grundfos sanitary pumps offer 100% safe production, completely avoiding bacterial contamination.

# ONE TRUSTED NAME DESERVES ANOTHER

People trust your brand enough to eat it, drink it and give it to their children. Grundfos has a range of renowned pumps that can take care of a food's quality and reputation. And this is how:

## HiGenix™

HiGenix™ is the design philosophy behind Grundfos sanitary pumps. It encapsulates the unique manufacturing techniques and dedication to quality that make Grundfos pumps the most hygienic and competitive options available for food applications.

## Unique hygienic design

A food product that needs very gentle handling needs NOVALobe. Many unique design features enable you to customise a NOVALobe solution that suits your product and process. The NOVALobe can also handle solids.

## Hygienic shaft seal solutions

Compared to ordinary lobe pumps, the NOVALobe shaft seal is placed in a forward position directly in the path of the product flow. This not only improves seal lubrication, the seal is also far more easily cleaned.

## Gap-free seal areas

The HiGenix™ design philosophy means Grundfos sanitary pumps are free of the edges, seams, screw heads and dead-ends where bacteria particles can accumulate.

## Smooth surface

Grundfos NOVALobe has a 0.8 µm surface finish as standard, ensuring very easy cleaning and safe food processing.

## Fully drainable

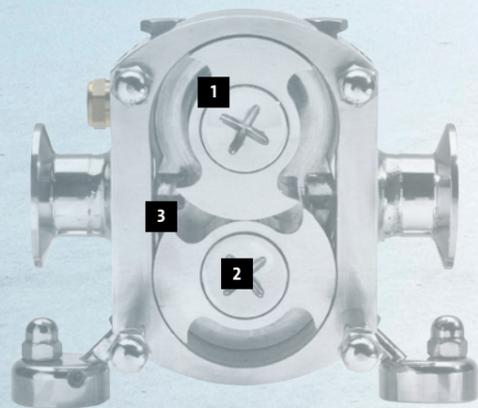
A specially designed angle in the pump housing ensures that the NOVALobe is fully drainable when installed with vertical ports. Pipe connections can easily be fitted vertically to make an upright installation possible.

## Made to work

Reliable operation is ensured by a solid design based on quality materials and durable surface finishes. The robust construction keeps the pumps running despite rigorous operating conditions and difficult media.

For fast service and maintenance we have designed the pumps for easy access using standard tools. The components most susceptible to wear are designed to be removed and replaced for a fast turnaround.

We can combine our flexible range of component and material variants to offer customised solutions to your specific situation. To be sure Grundfos solutions meet your expectations, each part is specifically optimised to work in your production process.



- 1 Gap-free seal areas**  
Rounded corners and edges. No gaps, embossing or socket head screws.
- 2 Shaft seal**  
Mounted to ensure optimum lubrication, cooling, CIP/SIP capability.
- 3 Fully drainable/in vertical installation.**



- A Certifications**  
European Hygienic Engineering Design Group
- B Sanitary Standards**
- C Qualified Hygienic Design**

# NOVALOBE – UNMATCHED FLEXIBILITY

With Grundfos, you always get a solution to match your needs. And Grundfos NOVALobe® remains unmatched in terms of flexibility. For instance, you have a choice of types

and installations, rotors, shaft seals, gearboxes, surface finishes and elastomer. NOVALobe's rotor case is designed to fit a choice of lobe shapes.



For the gentlest product handling, the cycloidal multi-lobe offers the lowest pulsation and shear effect achievable with a lobe pump.



The bi-wing lobe is a robust and popular all-round choice for most applications.



The uni-wing lobe is for processes that are a little out of the ordinary, requiring special care and gentle solids handling.

### APPLICATION EXAMPLES:

|               |                 |
|---------------|-----------------|
| yoghurt       | sauces          |
| crème fraîche | cheese          |
| mayonnaise    | cream           |
| ketchup       | sugar solutions |
| chocolates    | fish salads     |

### APPLICATION EXAMPLES:

|  |                 |
|--|-----------------|
| olives with pips                             | berries         |
| marmelades and jams with high solids content | dough products  |
|  | sugar solutions |
|  | fish salads     |

## Integrated thermal jacket

For ensuring a stable process liquid temperature, our integrated design is more heat efficient and effective than a saddle solution. The complete NOVALobe solution consists of two parts:

- a front cover with integrated heat exchanger
- an integrated jacketed rotor case placed around the shaft seal

## Shaft seals

All types of shaft seal come in a cartridge design with a sleeve and fit in the same casing. This makes upgrades and service very simple.

## Shaft seal types:

- Single mechanical seal
- Single flush mechanical seal
- Double mechanical seal
- Single O-ring seal
- Double O-ring seal

## Pressure Relief Valve (PRV)

The PRV opens immediately in reaction to overpressure, preventing damage and production stoppages.

## Features and benefits:

- No hard-to-clean dead-ends
- Less downtime needed for CIP cleaning
- Fully automatic cleaning and flushing
- No extra fittings or installation
- Double pistons mean less air pressure needed
- Airload and airlift systems are fully automated.

Various connections possible

Motor variants



Shaft seal options

# KEEP THE FLOW GOING WITH GRUNDFOS

Grundfos is a full-line supplier of premium pump solutions. Our range has a variety of models suited to different stages of industrial processes. We can outfit your entire application with general process pumps

## SANITARY PUMPS

### CIP

All Grundfos pumps are CIP (clean-in-place) compatible. Rinsing water and detergent solutions are circulated through tanks, pipes and process lines without the equipment having to be dismantled.



SIPLA

capable of handling your product with care and precision, dosing solutions and sanitary pumps that fulfil the strictest hygienic criteria.

### Milk and other low viscous liquids

It makes good business sense to maintain the highest standards of hygiene with reliable and flexible pumps that keep production costs low



F&B HYGIA®

### Yoghurt and other viscous media

For highly to extremely viscous media we can customise our pumps to be robust enough and still be gentle on the product.



NOVAlobe

### Pasteurisation and filtration

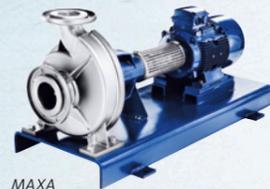
Grundfos can handle high pressure applications (up to 25 bar) and help you keep taste and quality just the way you need it.



Contra

### High flows

For moving large volumes of food-grade liquids and liquid transfer in sugar factories etc, Grundfos can deliver as much flow as you need.



MAXA

## UTILITY PUMPS

### Water treatment

Grundfos has developed a flexible range of stainless steel pumps and systems that don't contaminate pure water. Naturally, all pressure requirements can be met.



NB/NK

### Water supply

Our range covers both pressure tank systems and frequency-controlled systems. It includes submersible SP pumps for bore hole applications as well as in-line and end-suction pumps for backwash applications and DMS/DME dosing pumps for water chlorination.



Hydro Booster system

### Boiler feeding

Grundfos has customised a CR pump version with low NPSH, specially designed for systems with poor inlet conditions. This ensures cavitation-free operation even outside the pump's normal duty range. We recommend speed-regulated pumps (E-pumps) for boiler feed. CRN/BM pumps are ideal for water replenishment.



CR

### Wastewater

Solids and other particles in wastewater cause wear requiring robust pumps. Our range varies from small stainless steel drainage pumps to large wastewater pumps with up to 600 kW motor power.



SE

## DOSING & DISINFECTION

### Dosing

You can make a DME pump run at full capacity simply by pressing the 100% key. This means that the pump is fully primed for the next cycle. And with a turndown ratio of 1:1000, DME pumps are accurate down to the smallest dose.



DME

### Cooling & Heating

The Grundfos pump range includes numerous pump types for cooling and heating applications, water-borne as well as various other media. Solutions for high-temperature applications are also available. All pumps can be supplied with speed-regulated motors which offer major advantages in terms of dimensioning and energy savings.



TP

### Disinfection

Easily installable Grundfos Oxiperm Pro systems produce chlorine dioxide using diluted solutions of sodium chlorite (NaClO<sub>2</sub> 7.5%) and hydrochloric acid (HCl 9%). All maintenance is performed at the front of the unit, minimising disruption.



Oxiperm PRO



## DEMONSTRATING GRUNDFOS EXPERTISE, THEN DELIVERING

### Dairy giant needed robust pumps

Arla Foods is the second largest dairy company in Europe, Scandinavia's principal yoghurt producer, and the user of a broad range of Grundfos pump technologies. One challenge is to pump a massive 700 m<sup>3</sup> of water a day, - Arla solved this by using the Grundfos CR-pumps and later replaced them with CRE pumps, electronically regulated for constant pressure, resulting in considerable energy savings.

An annual production of 84,000 tonnes means that Arla's dairy in Brabrand, Denmark, requires reliable CIP/SIP compatible pumps that can handle heavy volumes and comply with a variety of approvals including EHEDG.

### Grundfos showed what we could do...

After a careful analysis of Arla's business requirements, Grundfos requested to demonstrate their NOVALobe pump. Arla happily accepted and was impressed by the NOVALobe's robust and reliable credentials, and even more so by the Grundfos representatives' full service approach: In collaboration with the dairy, Grundfos visited the facility and identified the optimal pump package and specifications.

### ...then did it

Grundfos installed a test pump, which performed so well that the Brabrand dairy then purchased eight more

NOVALobes. The application requires very careful and accurate specifications, and Arla was again impressed by Grundfos' proficiency in this area.

### The solution is still going strong

More than two years later, Arla reports that the pumps are exceeding all their expectations. The Grundfos solution is proving to be extremely reliable. In the wake of this success, the Brabrand facility has chosen to add further Grundfos pumps to the production line.

*"The advice given to us in the start-up phase was really good. The test pump (supplied by Grundfos) was a big advantage as it allowed Arla to get a feeling of the product before purchase – and now we have bought eight NOVALobes."* – Service Manger at Arla - Helge Bolet.



## RUGGED, DEPENDABLE, EFFICIENT – GRUNDFOS PROVES ITS WORTH

### Pump problems hindered snack production

Part of United Biscuits, McVities is a long-established player in the market and manufactures a wide range of much-loved biscuit and cake products.

McVities product production processes typically involve extremely abrasive liquids with a very high viscosity. This led to extensive problems with their pumps. They were leaking far too often, requiring extensive maintenance and wearing out completely after six to seven weeks.

### Only Grundfos meets the challenge

McVities knew Grundfos only as a manufacturer of top quality pumps for central heating or services, so Grundfos readily agreed to supply a NOVALobe pump on an approval basis. McVities only needed to purchase the pump if they were completely satisfied with its performance.

Grundfos technicians and sales representatives with the on-site support of Eriks Integrated Solutions – a company committed to improving efficiency while reducing costs – helped McVities choose the right NOVALobe pump for the job. More than six months later there has not been a single leak.

### McVities and the NOVALobe future

Now, McVities has approximately 12 NOVALobe pumps operating in their Glasgow, Manchester and Carlisle plants. Over the past year, McVities has exclusively purchased NOVALobe pumps for its plants. Reliability is top notch, which means much less maintenance and a far lower risk of costly downtime. As an extra safeguard, Grundfos has also ensured that there is a stock of essential spares and reserve pumps for McVities less than three hours drive from the plants.

*"The pumps are manufactured to the highest standards. The organisation and quality control are absolutely superb and I have absolute confidence in purchasing the products"* – Andy Maitland, Engineering chargehand for McVities.

# GRUNDFOS INDUSTRIAL SOLUTIONS

The full-line Grundfos range caters to the specific needs of food processing plants, confectionery and chocolate factories as well as dairies. Grundfos sanitary pumps give you better peace of mind and optimal pump-application compatibility for every stage in your production process. Our range has models specifically designed to handle viscous, delicate or temperature sensitive ingredients – all with maximum care and hygiene.

At Grundfos we know reliability and easy maintenance are critical factors in keeping the production flow going. That is why our sanitary pumps are SIP/CIP compatible and can be customised for optimal performance. And all Grundfos pumps come with the expertise and global support network of the Grundfos Group.