



Grundfos is proud to be an official sponsor of Expo Zaragoza 2008

As a leading pump manufacturer and a company committed to environmental conservation, we value our opportunity to act as an official sponsor of Expo 2008 and its theme of 'Water and Sustainable Development'.

Expo 2008 takes place from June 14th to September 14th on the banks of the river Ebro in the beautiful Spanish city of Zaragoza. All its vast assembly of exhibitions, architecture, culture, happenings and technology will be based around water and its value to mankind. With 61,667 m² of easily accessed pavilion space, a spectacular 73 metre water tower and six themed-squares, Expo 2008 will cover all the important water related issues, including thirst, energy, water's life giving properties and it's creation.

Over 70 countries will be represented at Expo 2008, a level of representation that reflects the global importance of water conservation. Grundfos are proud to be a sponsor – we want to play our part in keeping the world's water clean.

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GRUNDFOS 

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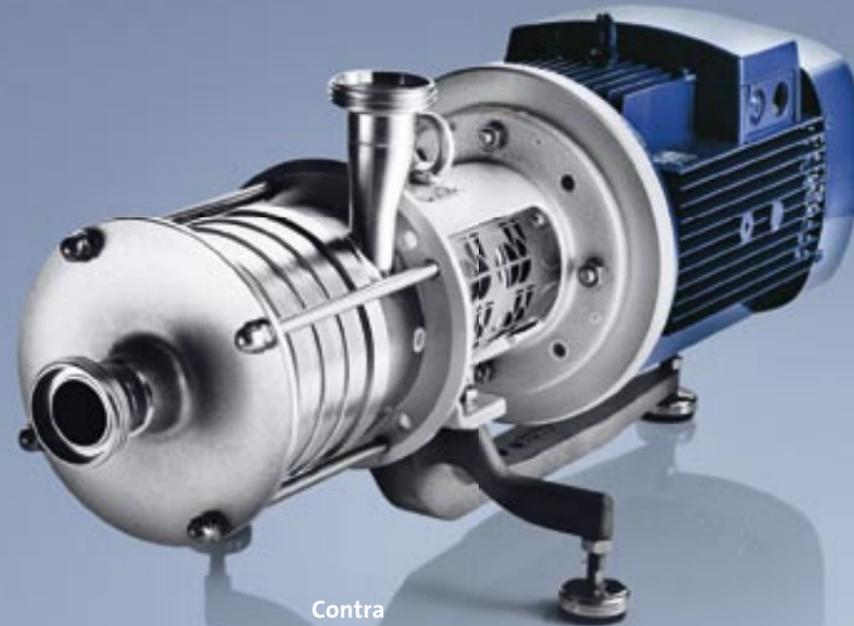
The best way to avoid headaches

Grundfos sanitary pumps for industrial pharmaceutical applications

GRUNDFOS 



SIPLA



Contra



Euro-HYGIA®

Your customers will benefit too

To ensure the reliable supply of WFI water so crucial in pharmaceutical production there is no better all-round pump supplier than Grundfos.

Grundfos sanitary pumps are manufactured and certified to meet the highest industry standards. With our solutions you know your product's integrity is guaranteed and its level of quality reproduced every time.

Our pumps are constructed from deep-drawn and/or forged stainless steel for a hygienic, pore- and blowhole-free surface. Maximum hygiene is further ensured through design features, such as metal-to-metal contact seal areas and the absence of pump casing dead-ends.

Additionally, all our pumps are backed up by Grundfos dosing solutions that are just as user- and maintenance-friendly.

Euro-HYGIA®

Euro-HYGIA® is a range of single-stage, end-suction centrifugal pumps designed to cope with the toughest working environments. Three impeller designs are available: semi-open, closed and free-flow.

The design of the wet-end parts complies with the strictest hygienic certification standards. The pump casing is made from deep-drawn stainless steel (AISI 316L) to create an entirely smooth surface.

SIPLA

The SIPLA range features robust self-priming side channel

pumps designed for reliable operation even with highly oxygenated liquids. Every surface in contact with the pumped liquid is constructed from electro-polished stainless steel, (AISI 316L).

Contra

Contra is a range of flexible multistage, end-suction centrifugal pumps, each Qualified Hygienic Design (QHD) and EHEDG certificate compliant (as is Euro-HYGIA®).

The pump is highly efficient and reliable. The Contra range can be supplied in a vertical design making it 100% drainable.

Euro-HYGIA®

– for ultimate hygiene

This robust premium pump is capable of handling the toughest working conditions. Depending on application and media, single or double mechanical shaft seals are available. The seal face materials are selected to suit pumped media (for pharmaceutical applications SiC/SiC is most often used as well as EPDM (FDA conform). Euro-HYGIA® meets the 3A3 sterile standard; its surface roughness is $Ra \leq 0.4 \mu m$.



Grundfos has sanitary and general process pumps for each phase in the process: from the reception of ingredients through to packaging.

FACTS

Flow: 130 m³/h (250 m³/h model available)
Head: Max. 75 m
Operating pressure: Max. 16 bar
Operating temp.: 95°C (150°C on request)
Sterilisation temp.: 140°C (SIP)



Sanitary Standards



European Hygienic
Equipment Design Group



Qualified
Hygienic Design

Certified to deliver

The wet-end parts of Euro-HYGIA® meet the QHD standard with an EHDG test certificate for CIP cleanability, 3A Sanitary Standard (USA) and GOST (Russia).

The Euro-HYGIA® features deep-drawn, heavy-duty CrNiMo stainless steel (AISI 316L).



Dosing in the digital age

DME pumps for CIP/SIP duties

Grundfos Alldos DME Digital Dosing™ pumps make the CIP (Cleaning In Place) and SIP (Sterilisation In Place) processes easy. The trial and error is taken out of programming, and recalibration isn't necessary when the capacity is adjusted. You can make the 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. Dosing has never been this precise or straightforward!

What you set is what you get

Grundfos Alldos Digital Dosing™ is made easy thanks to the user-friendly control panel. Simply use the multi-lingual five-button interface to specify the dose required and the pump will take care of the rest.

Smooth, constant dosing

You have full control over the speed, acceleration and position of the diaphragm. The design also eliminates vibrations allowing the additive to be applied evenly and precisely.

Full-stroke length

Full-stroke length makes the pump less vulnerable to gas build-up in the dosing head. This ensures maximum precision and smooth discharge.

Our range just got bigger – much bigger

Our product range already boasted the broadest Digital Dosing™ flow range (0.0025 l/h to 150 l/h) on the market – but now we have introduced two units for larger applications with flows of 375 l/h and 940 l/h. No other manufacturer does digital dosing on this scale.



Milko – a modern dairy enterprise with modern day requirements

Dairy experts with open minds

The people at Milko know their dairy products. It is not only the largest dairy co-operative wholly owned by Swedish farmers; it is also the fifth-largest food industry in Sweden. But even through they are large, they are not afraid to explore new ways of doing things. Committed to ideals of natural food, openness, and innovation, the Milko team was naturally drawn to the groundbreaking DME range.

Already a big DME fan

"We already had DME dosing pumps elsewhere in our plant – and were very pleased with them," says Lars Rudh, operations engineer at Milko. "So naturally we wanted to use them in our CIP system as well."

Dosing acid and lye in CIP system

The CIP system in question cleans vats used to float cheeses in a saline solution, and the vats need daily cleaning to maintain top quality and hygiene. "We changed the system from a fully manual to a semi-automatic system," says Lars Rudh. "The DME pumps are used to dose acid and lye in exactly the right amounts, and have worked every bit as well as the other DMEs in the plant."

"Work well, easy to use"

When asked why Milko is so happy with the DME pumps, Lars Rudh explains: "Well, quite simply, they work very well! And they're very easy to use – you know straight away what to do to achieve the best results. In fact, we're planning to put in more DME pumps in other parts of our system."

An overhaul with high expectations

Protecting an investment

When one of Bavaria's largest pharmaceutical companies decided to overhaul its entire production line it wanted only premium solutions. Around €280 million was being spent, and the company wasn't going to compromise its investment with anything less than the best sanitary pumps on the market.

As a pharmaceutical company the customer's requirements included a reliable flow of ultra-pure and deionised water, and a solution that made as little noise as possible. The CIP (Cleaning in Place) applications presented a particular installation challenge and required sterile double axial face seals.

An ensemble of ultra-sanitary solutions

Grundfos was commissioned to install 52 of its pumps. Before installation began, Grundfos specialists were closely involved in the planning phase to ensure optimal installation and operation.

The sanitary pumps installed included standard centrifugal pumps (EURO-Hygia® I, EURO-Hygia® II, Contra I, Contra II) and SIPLA self-priming centrifugal pumps.

A "success story"

A spokesperson for the company says they are very happy with the outcome. He says Grundfos pumps are "one hundred per cent guaranteed" when it comes to reliability.

One project engineer, who was largely responsible for the commissioning and installation of the Grundfos pumps, adds that the collaborative efforts between his company and Grundfos had been a "success story from start to finish".





DME/DMS
Dosing

DMX/DMH
Dosing

SP
Submersible pump

NB
Single-stage end-suction pump, close-coupled

NK
Single-stage end-suction pump, long-coupled

TP
Single-stage in-line centrifugal pump

HS
Horizontal split-case pump

CR
Multistage in-line centrifugal pump

SEV/SE1
Wastewater pump

MAGNA/ UPE SERIES 2000
Circulator pump

HYDRO MPC
Complete booster system

NOVALOBE
Rotary lobe sanitary pump

EURO-HYGIA®
Single-stage end-suction sanitary pump

SIPLA
Self-priming sanitary pump

CONTRA
Multistage sanitary pump

MAXANA
End-suction process pump, long/close-coupled

MAXA
End-suction process pump, long/close-coupled

DURIETTA O
Multi-stage end-suction centrifugal pump

CONEX DIA-2Q
Dual measuring amplifier and multi-functional controller

OXIPERM
Chlorine Dioxide Systems

Grundfos is a full-line supplier of premium pump solutions. Our range has a variety of models suited to different stages in industrial processes.

We can outfit your entire application with general process pumps capable of handling problematic media, and sanitary

pumps that fulfil the strictest hygienic criteria. At Grundfos we know that reliability and easy maintenance are critical factors in keeping the production flow going. That is why our pumps are SIP/CIP compatible and can be adapted for optimal performance.

Process application overview – Industrial Solutions 2007	LIFE SCIENCE		PERSONAL CARE			
	Pharmaceutical	Biotechnology	Pure water	Lotions	Perfumes	Soaps
PROCESS WATER	Euro-HYGIA®, Contra	Euro-HYGIA®, Contra	Euro-HYGIA®, Contra			
DISINFECTION/DISTILLATION	Euro-HYGIA®, Contra, Oxiperm, DME, M&C*	Euro-HYGIA®, Contra, Oxiperm, DME, M&C*	Oxiperm, DME, M&C*			
PURIFICATION	Euro-HYGIA®, Contra, Oxiperm, DME, M&C*	Euro-HYGIA®, Contra, Oxiperm, DME, M&C*	Oxiperm, DME, M&C*			
CIP/SIP	Euro-HYGIA®, Contra, Oxiperm, M&C*	Euro-HYGIA®, Contra, Oxiperm, M&C*	Euro-HYGIA®, Contra, Oxiperm, M&C*	Euro-HYGIA®, Contra, Oxiperm, M&C*	Euro-HYGIA®, Contra, Oxiperm, M&C*	Euro-HYGIA®, Contra, Oxiperm, M&C*
BOTTLE WASHING	Oxiperm, DME, M&C*	Oxiperm, DME, M&C*	Oxiperm, DME, M&C*	Oxiperm, DME, M&C*	Oxiperm, DME, M&C*	Oxiperm, DME, M&C*
MIXING	Euro-HYGIA®	Euro-HYGIA®	DME, M&C*	Euro-HYGIA®, DME, M&C*	Euro-HYGIA®, DME, M&C*	Euro-HYGIA®, NOVALobe
CARBONATE	Contra		DME, M&C*	DME, M&C*	DME, M&C*	DME, M&C*
FLAVOUR ADDITIVE			DME, M&C*	DME, M&C*	DME, M&C*	DME, M&C*
LIQUID TRANSFER LOW VISCOSITY	Euro-HYGIA®	Euro-HYGIA®	Euro-HYGIA®	Euro-HYGIA®	Euro-HYGIA®	Euro-HYGIA®
LIQUID TRANSFER HIGH VISCOSITY	NOVALobe	NOVALobe		NOVALobe	NOVALobe	NOVALobe

*Measurement & Controls