



Pumping Solutions for **Biopharmaceuticals**

Pumps and controls to solve water
and efficiency challenges

grundfos.us/Pharma

GRUNDFOS 

Possibility in every drop

Here's a dose of reality

It's never fun to hear that your pharmaceutical utility operations aren't running as smoothly as they could be. But the cold, hard truth is that if your water pumps and systems are outdated or inefficient, they're likely costing you unnecessary time, energy and money.

The good news is there's an antidote. A switch to more intelligent, more sustainable water solutions from Grundfos can pay for itself through substantial maintenance and energy savings.

As one of the world-leading pump technology companies, Grundfos will empower you to reach your goals through:

User-centric design and customization

Our intelligent industrial pumps and controls are thoroughly tested and built on more than 75 years of experience to ensure flawless performance. Smart features simplify installation, operation and maintenance for you. We offer limitless customization with highest quality guaranteed.

Global knowledge and local support to overcome your challenges

With more than a century of joint experience and technical know-how, our global pharmaceutical team knows the industry at scale like no other pump provider. Plus, our local experts deliver support to meet your market's unique needs. It's the best of both worlds.

Drive sustainable change through collaboration

As the first water solutions company ever to receive approved net-zero Science-Based Targets, we are deeply committed to being a part of the solution to climate change. We're innovating sustainable water solutions that help our pharmaceutical customers achieve their sustainability and energy goals.

Innovation to help you advance

Typically, we devote about 5% of our annual revenue to research and development for your benefit. We relentlessly refine our state-of-the-art solutions for efficiency, reliability and profitability — with sustainability at the core of everything we do.

Thousands of Grundfos pumps are already at work in pharmaceutical utility applications around the world. Learn how we can help optimize your utility operations through more energy efficient water management, too.



A World Leader in Pressure Boosting

Grundfos' inline vertical multistage centrifugal pumps, the CRs, are known for their reliability, efficiency and adaptability. The CR pump range is the broadest range available, and through our modular approach, you are able to pick and choose pump elements to cover practically any non-standard situation, including handling difficult or high-temperature liquids.

Expanded Performance and Increased Efficiency

CRE RANGE INFORMATION

Maximum flow, Q:	1,070 gpm
Maximum head, H:	1,600 ft
Liquid temperature:	-40 to 356°F*
Operating pressure:	725 psi*

* upon request

CR RANGE INFORMATION

Maximum flow, Q:	1,755 gpm
Maximum head, H:	1,283 ft
Liquid temperature:	-40 to 356°F*
Operating pressure:	725 psi*

* upon request

Grundfos Connect

Bring visibility and performance monitoring to all your water infrastructure in a cost-effective and simple way.

Key Benefits



24/7 Monitoring

Secure peace of mind with continuous visibility of all your assets' performance with a cloud-based system accessed from your preferred device.



Be informed

Notifications alert you of potential issues so you can take preventive actions, avoid costly service interruptions, and secure operational performance.



Remote control

Increase service availability and reduce inspection costs by controlling and troubleshooting assets remotely.



Cost-efficient integration

Avoid costly setup and integration challenges with a cyber-secure self-service setup that provides a guided workflow for all actions.

PRESSURE BOOSTING

CRE - Vertical Multistage Variable Speed Pump

The Grundfos CRE represents the union of the well-known Grundfos CR and variable speed MLE motors developed by Grundfos with optimum electronic control in mind. The CRE features a pump and motor with an integrated variable frequency drive, PID controller and sensor. The CRE is a plug-and-pump solution or can be integrated into a larger system.



CRXL - The Expanded Range of Grundfos CRs

More efficient, reliable and durable than ever before, the new range of Grundfos CRs moves the limits for vertical inline multistage centrifugal pumps. State-of-the-art technology, simulation-driven design, and optimized pump hydraulics come together to offer unmatched efficiency and reliability. The new CR 95-255 vastly increases the performance coverage of the previous range, offering more than 1,755 gpm and 1,283 ft. of head. Best of all, our CRs are designed with the user in mind, with features like seal changes that are so simple they can even be done blindfolded.

PRESSURE BOOSTING

Hydro MPC Booster System

Grundfos Hydro MPC Booster System is a fully integrated, package system with a programmable logic controller. The Hydro MPC can adjust automatically based on parameters for flow, head and additional conditions, making the Hydro MPC the ultimate 'set it and forget it' automated pressure boosting system. Each component is made by Grundfos to meet the highest standards in the industry. The Multi-pump Controller (MPC) can handle the most difficult boosting applications with ease and accuracy. Based on the extremely reliable, high-efficiency CR pump range, this fully integrated system ensures that all technologies involved in the process work together. These performance-optimized systems are available in configurations with up to six CR pumps, allowing for flows of up to approximately 8,000 gpm.



DOSING & INGREDIENT HANDLING

The Grundfos dosing and disinfection product range covers everything from simple chemical addition to the disinfection of drinking water and antimicrobial washes. With one of the most extensive product ranges of pumps, packages and accessories in the market, Grundfos dosing and disinfection products deliver accuracy, reliability and safety in an area where processing plants can't afford errors.

SMART Digital Dosing™

Traditional dosing pumps regulate the dosed quantity by adjusting stroke length and/or frequency. However, reducing the stroke length adversely affects dosing accuracy. In cases where the dosing pump cannot operate at 100% stroke length, performance will suffer due to intermittent flow. Digital Dosing™ offers a clear advantage. By using a stepper motor, the volume dosed is altered by the discharge stroke speed while continuously utilizing 100% of the stroke length. This results in optimum dosing accuracy and better handling of off-gassing liquids.

DDA

The top-of-the-line DDA pump is designed as the perfect solution for complex and demanding applications. Its auto-deaeration feature easily handles off-gassing liquids. The control variants offer a range of intelligent options, including selective fault diagnosis; built-in pressure monitoring; integrated flow measurement; and AutoFlowAdapt, which allows for the setpoint to remain constant even when discharge conditions, such as pressure, change. This ensures the desired amount of chemical is consistently added to the process.

The DDA range offers performance up to 52.8 gph (200 l/h) and is the ideal solution to deliver high flows accurately.

DDE

The DDE pump offers the same drive strategy as a DDA, but at a cost-effective solution with basic functions for simple applications. Setting the dosing capacity from 0.1% to 100% is easy. A logarithmic scale adjustment dial enables precise low-flow settings up to 52.8 gph (200 l/h).



DDA INFORMATION

Maximum flow, Q:	52.8 gph (200 l/h)
Maximum pressure, P:	232 psi (16 bar)
Turn-down ratio:	3,000:1

DDE INFORMATION

Maximum flow, Q:	52.8 gph (200 l/h)
Maximum pressure, P:	145 psi (10 bar)
Turn-down ratio:	1,000:1

DOSING SKID SYSTEMS

Complete dosing skids tailored to your application

Grundfos' complete chemical feed systems make dosing technology available as a plug-and-play package with all necessary pipework, valves and dosing pumps. We can deliver standardized packaged systems or build custom solutions to meet your unique specifications. In our custom systems, you can select dimensions, connection locations and installation options, choice of materials, and accessories including electrical controls, containment systems and optional measurement and control instruments.

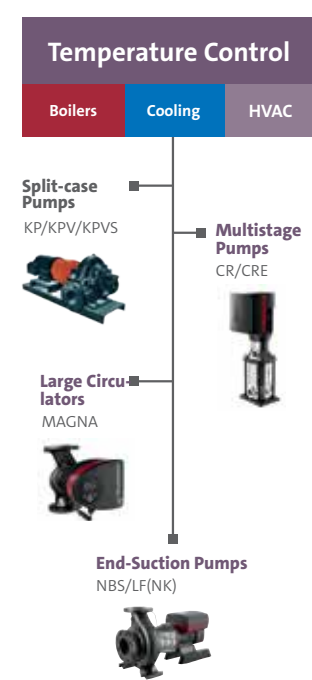
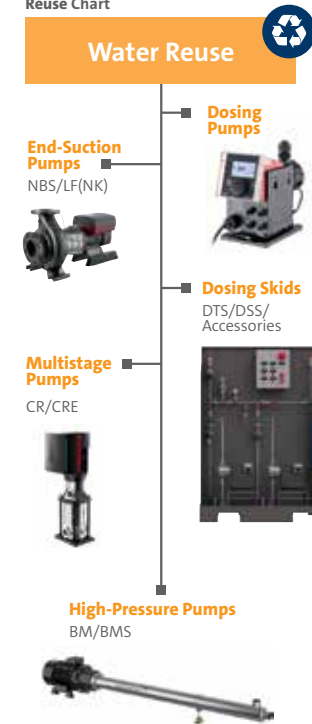
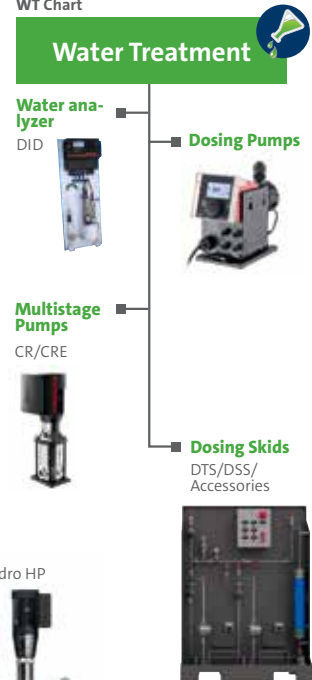
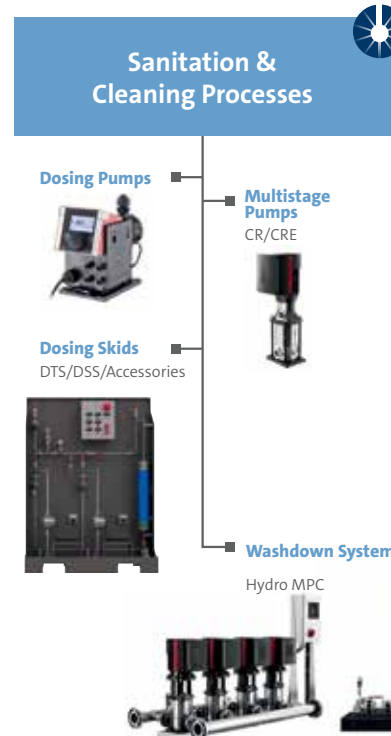
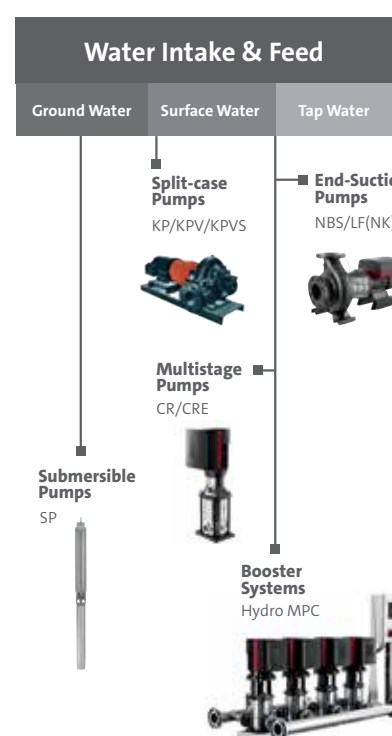
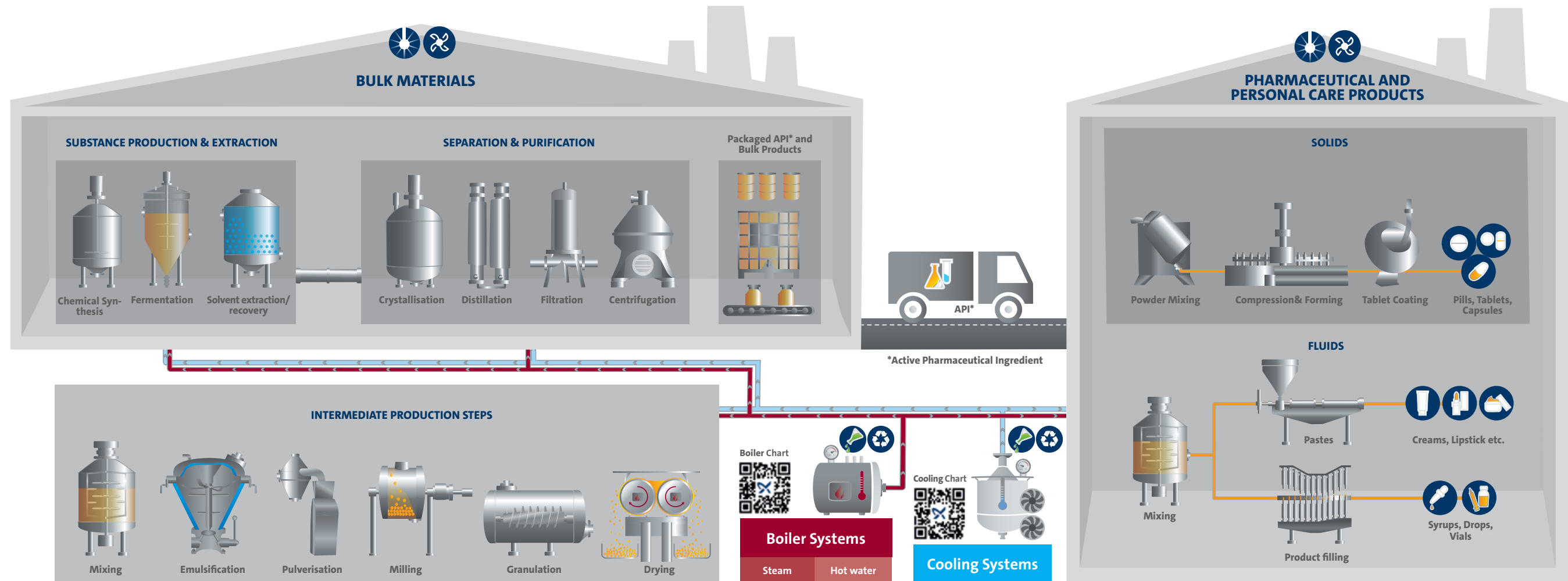
Applications

Typical applications for Grundfos Dosing Skids:

- ✓ Flavors and fragrances
- ✓ Critical ingredients
- ✓ Disinfectants
- ✓ Detergents
- ✓ Sodium hypochlorite
- ✓ Sodium bisulfate
- ✓ Alum
- ✓ Potassium permanganate
- ✓ Sodium hydroxide
- ✓ Acids
- ✓ Anti-scalants



Grundfos Solutions in Biopharmaceuticals



Disclaimer: We do not supply pumps with hygienic design!

COMPLETE, EFFICIENT SOLUTIONS TO PHARMACEUTICAL UTILITY OPERATIONAL DEMANDS

At Grundfos, we understand the demanding environment of biopharmaceuticals. Managing a plant means optimizing processes, maximizing uptime, managing resources, and ensuring the safety of workers and products to meet government regulations. With Grundfos, you gain more than a pump supplier, you gain a partner focused on solving the challenges of your operation, that delivers higher efficiency and reliability than you thought possible.

Dedicated to innovation and a pioneer in water technology, Grundfos continuously advances our products and capabilities to meet the increasing need for connectivity, accuracy and efficiency in our ever-evolving industry.

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