

PRESSURE BOOSTING PUMPS & SYSTEMS

Product Portfolio Overview

Vertical Multistage Variable Speed System

GRUNDFOS CR/CRE

The Grundfos CR is the world's number one vertical multistage centrifugal pump, known for its reliability, efficiency and adaptability. The basic CR pump range, which can be applied in almost any industrial solution, is already in itself the broadest range available. Through our modular approach, we have made it even broader. Customers needing a non-standard solution are able to pick and choose pump elements or "modules" to cover nearly any situation. Pump parts which are typically vulnerable to difficult liquids or particularly demanding operating conditions can be optimized for their purpose and designed for specific requirements.

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, controller and sensor. The CRE offers a plug-and-pump solution.

KEY FEATURES AND BENEFITS

- Compact, inline design fits into small footprint
- Easy installation and operation with settings and internal connections done at factory
- Highly efficient design reduces energy consumption by up to half compared to fixed speed pumps
- Unique cartridge seal design can be replaced in minutes
- Spacer coupling allows motor to be left in place during seal replacement
- Remote control/fieldbus monitoring and data collection
- Building management system compatible
- User friendly controller interface with advanced features and functionality
- Laser welded stainless impellers promote class leading efficiency
- Optional CR Cool-Top™ allows pump to withstand liquid temperatures of up to 356°F
- Integrated sensor available
- Four material options available, including cast iron, two grades of stainless steel, and all-titanium
- Thirteen flow sizes, capable of producing up to almost 725 psi pressure, and with a variety of shaft seals, rubber materials and supply voltages
- MAGdrive option available for demanding industrial applications where zero-leakage is required

APPLICATIONS

- Boiler feed
- Pressure boosting
- Chilled water
- Heating water
- Condenser water
- Industrial processing
- Washing and cleaning systems
- HVAC
- Irrigation
- General purpose pump



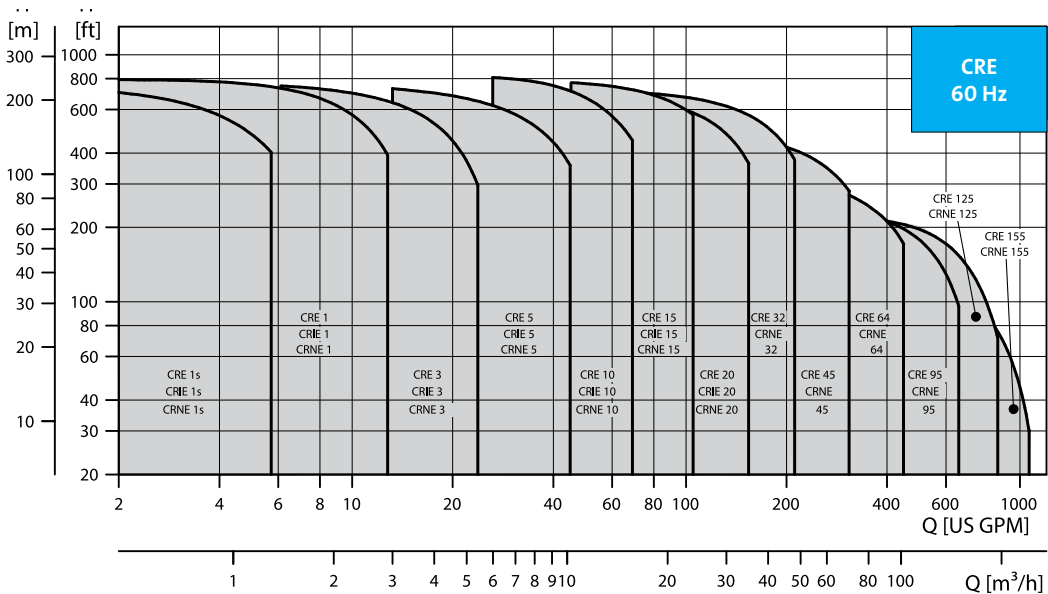
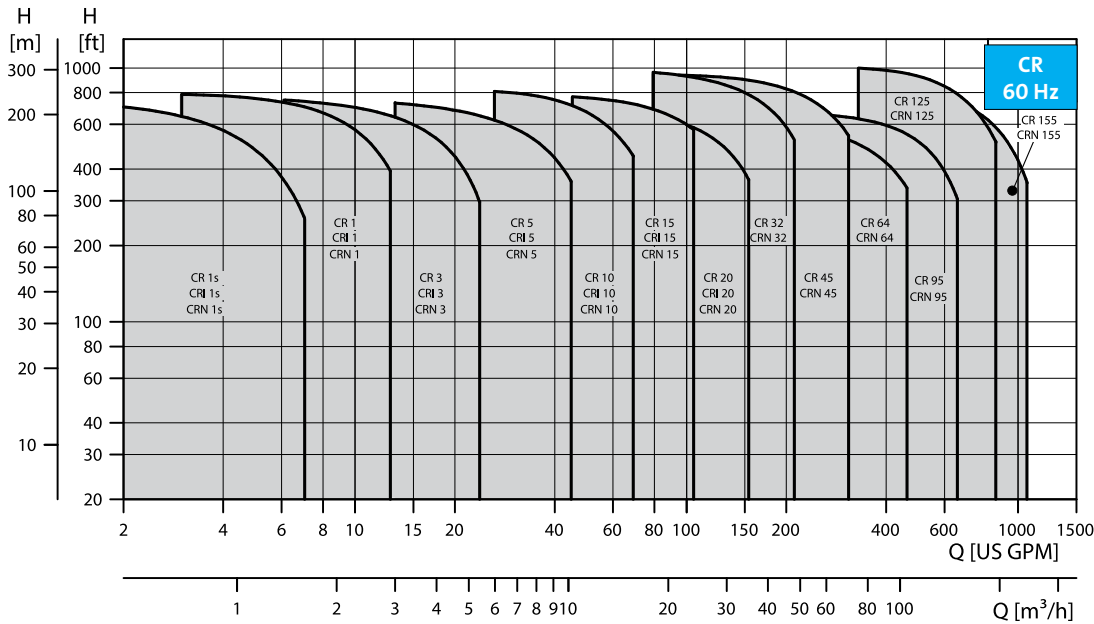
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TECHNICAL DATA

CR INFORMATION	
FLOW, Q:	max. 1,052 gpm
HEAD, H:	max. 995 ft
LIQUID TEMPERATURE:	-22 to 248°F
WORKING PRESSURE:	max. 725 psi

CRE INFORMATION	
FLOW, Q:	max. 450 gpm
HEAD, H:	max. 820 ft
LIQUID TEMPERATURE:	-22 to 248°F
WORKING PRESSURE:	max. 435 psi

PERFORMANCE DATA



Visit grundfos.us/pei to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.

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GRUNDFOS

Vertical Multistage Centrifugal Pumps

GRUNDFOS

EXPANDED RANGE OF CRs

With its optimized hydraulic design — from impeller and guide vanes to inlet, discharge port, sleeve and diffuser — the new generation of Grundfos CR offers world class energy efficiency. Due to its small footprint, it is much easier and less costly to install than other pump designs.

The new generation of large CR pumps has been made even more robust than its forerunners through use of state-of-the-art technology in simulation-design, materials, testing, and production. Every pump is individually tested before leaving the factory, and reimagined features reduce pump downtime and lower operating costs.

The new generation adds even more options to what was already the most modular pump program in the world, including higher pressure, lower NPSH and the use of standard motors. And of course, the new CRs are also available as combined systems with dedicated CUE frequency converter and as boosters systems.



KEY FEATURES AND BENEFITS

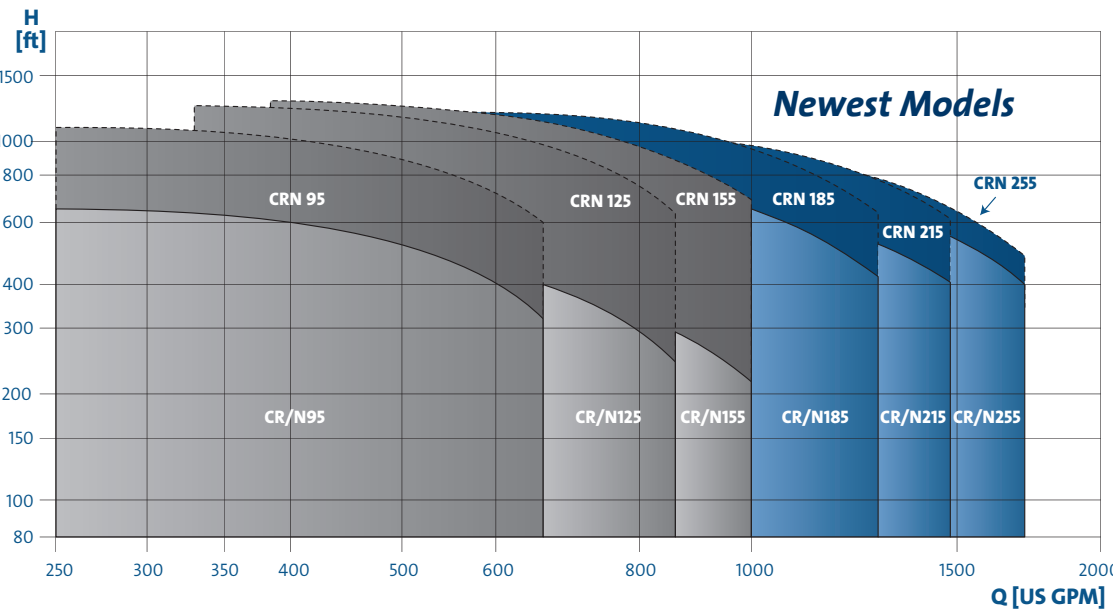
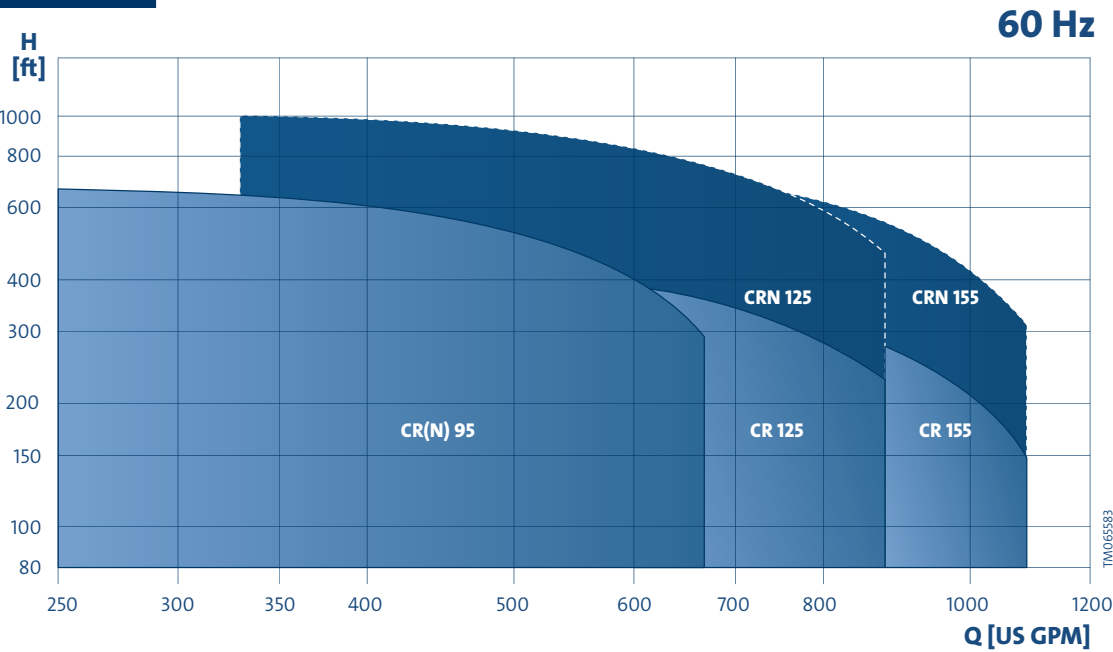
- Compact, inline design fits into small footprint
- Improved impeller design reduces energy loss
- Easy installation and operation with settings and internal connections done at the factory
- Highly efficient design reduces energy consumption by up to half compared to fixed speed pumps
- Unique cartridge seal design can be replaced in minutes
- Spacer coupling allows motor to be left in place during seal replacement
- Laser welded stainless impellers promote class leading efficiency
- Optional CR Cool-Top™ allows pump to withstand liquid temperatures of up to 356°F
- Wetted parts available in cast iron/304 stainless steel or all 316 stainless steel
- MAGdrive option available for demanding industrial applications where zero-leakage is required

APPLICATIONS

- Pressure boosting
- Process water transfer
- Boiler feed
- Cooling and air conditioning
- Firefighting systems
- Special liquids transfer
- Filtration
- Reverse osmosis
- Filtration and transport water works
- Distribution from water works

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PERFORMANCE DATA



GRUNDFOS SELECTION TOOLS

Need to configure, size or select a product? From performance data to submittal documents and everything in between, Grundfos can help you find the perfect-fit pumping solution. To learn more about our selection tools for standard pumps and systems, digital dosing and engineered-to-order solutions, visit: grundfos.us/select



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Packaged Pumping Systems

HYDRO HP

The all new Grundfos Hydro HP is a fully integrated high-pressure booster system offering a more reliable and energy-efficient solution for clean and wash applications. The system features industry-leading CR vertical multistage inline pumps, which offer superior hydraulic performance and bulletproof reliability in a space-saving footprint.

The integrated VFD control offers consistent system pressure, whether the system is used to clean with one spray wand or do a full facility washdown, all without the need for a recirculation line. A low-flow jockey pump efficiently maintains system pressure to meet low-flow cleaning demands. Additionally, with the easily serviced Grundfos Hydro HP, plants can expect to realize full ROI after the first few maintenance cycles.

KEY FEATURES AND BENEFITS

- **Tandem main pumps** operate as a single unit
- **Saves energy** with the most efficient cascade control, application optimized software, and pumps in the industry
- **Built-in logging capability** provides historical information for energy analysis
- **CRN/CRNE pumps**, at the heart of the Hydro HP, are the world's number one vertical multistage centrifugal pumps, known for their reliability, efficiency and adaptability
- **Cartridge shaft seal** is available in a variety of materials and can be replaced in minutes for easier maintenance
- **Low-flow stop control** that exceeds ASHRAE 90.1 energy code for service water boosters
- **User-friendly HMI** screen on the controls offers simple operation
- **SCADA communication capable** via field-bus and Ethernet protocols like Modbus, BACnet, Profibus, LON or EtherNet/IP for back office control of your entire system.
- **Flow and energy readout** included with inclusion of flow meter
- **Advanced permanent magnet (ECM) motor**, available up to 15 hp, in combination with pumps and customizable software, optimizes your system's performance for any load point, resulting in an unsurpassed reduction of energy consumption
- **Single-source responsibility** by Grundfos with the pumps, motors and controls all manufactured and backed by the same supplier
- **Factory service** and monitoring plans available to ease maintenance concerns
- **Factory assembled and tested** to the highest standards to ensure trouble-free installation and operation
- **Carbon Steel** or 316SS piping options
- **NEMA 12 or NEMA 4X** control panels available with optional air conditioning

APPLICATIONS

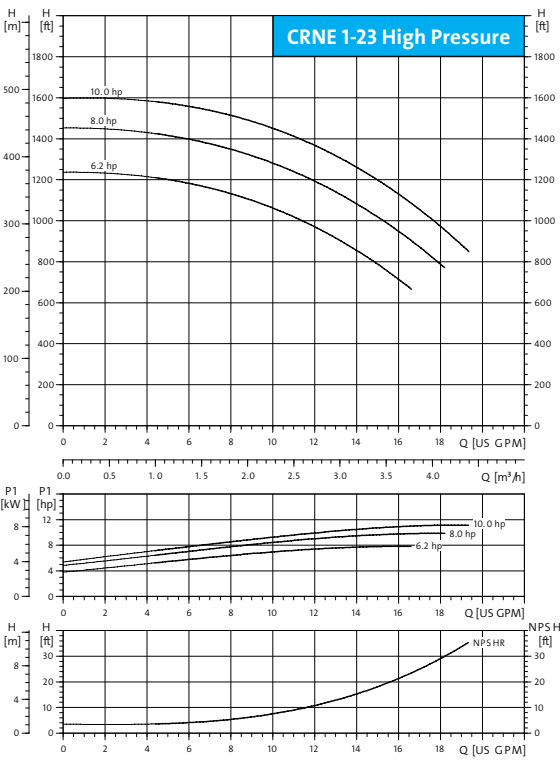
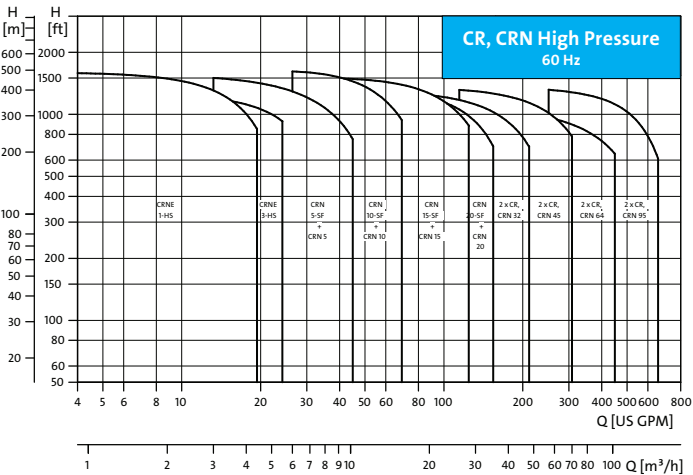
- Food and beverage cleaning systems
- Reverse osmosis systems
- Spraying and washing systems
- High-pressure paper shower
- Boiler feed/cleaning systems



TECHNICAL DATA

HYDRO HP INFORMATION	
FLOW, Q:	max. 150, 250, 350 and 500 GPM systems
HEAD, H:	max. 1675 ft
WORKING PRESSURE:	max. 725 psi
LIQUID TEMPERATURE:	32° F to 248° F
APPROVALS:	UL Listed Packaged Pumping System

PERFORMANCE DATA



Visit grundfos.us/pei to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.

Packaged Pumping Systems for Pressure Boosting and HVAC

GRUNDFOS HYDRO MPC

The Grundfos Hydro MPC is an integrated packaged pumping system that offers an easier, less costly and more efficient alternative to field-built systems in both pressure boosting and HVAC applications. Pre-piped, pre-wired and pre-tested, this system includes pumps, motors, controls, VFDs and more for easier installation and commissioning, and unrivaled performance.

Using intelligent controls and smaller pumps, the Hydro MPC harnesses the power of parallel pumping for greater flexibility, scalability and efficiency in ever-changing load conditions. This reduces energy consumption by more than 18% compared to other VFD HVAC and pressure boosting systems, providing substantial cost savings in the long run.



KEY FEATURES AND BENEFITS

- **Single source supplier** for every component of the Hydro MPC, so Grundfos is your only contact for service
- **Modular design options** for cost-effective packaged solutions with a smaller footprint than traditional pumping systems
- **CR/CRE pumps** have extremely low inertia, meaning minimal vibration and do not require alignment
- **Advanced permanent magnet motor** offers an additional 7–10% decrease in energy cost over NEMA Premium motors with conventional VFDs (available up to 15 hp)
- **Efficiency based sequencing**, CU 352 controller runs up to 6 pumps by intelligently monitoring power and pressure
- **SCADA via CIM expansion card** that plugs in to the CU 352 for easy BMS integration, via a variety of protocols with BACnet as standard, and utilizes single poll functionality that pings device once for over 30 communication points of data and control
- **Built-in logging capability** for easy trouble-shooting and energy analysis
- **Secondary (fallback) sensors** allows for system control if remote sensor fails
- **Innovative cartridge mechanical seal** can be replaced in minutes for easier maintenance and reduced downtime
- **One housekeeping pad and no grouting**, for easier and more cost-effective installation; fits on existing housekeeping pads for retrofits
- **No suction diffusers**, triple duty valves or alignment necessary

PRESSURE BOOSTING APPLICATIONS

- **Low flow stop control** that exceeds ASHRAE 90.1 energy code for service water boosters
- **Certifications/approvals include** System NSF 61/372 Certified and seismic certification by OSHPD (OSP-0491-10) specifically for Hydro MPC E (CUE) systems

- **316 stainless steel manifolds** are engineered to streamline flow, reduce pressure loss and protect against corrosion

HVAC APPLICATIONS

- **Multizone control** regulates up to 6 HVAC zones within a defined differential-pressure band
- **Dedicated HVAC control (optional)** using Control HVAC that can control up to 26 zones and includes chiller bypass control
- **Additional sensors (optional)** enable top zone control

APPLICATIONS

- Hydronic Heating and Cooling
 - Variable Primary
 - Primary/Secondary
 - Condenser Water
 - Distributed Pumping
 - District Energy Systems
- Industrial Process Temperature Control
- Pressure Boosting
- Irrigation

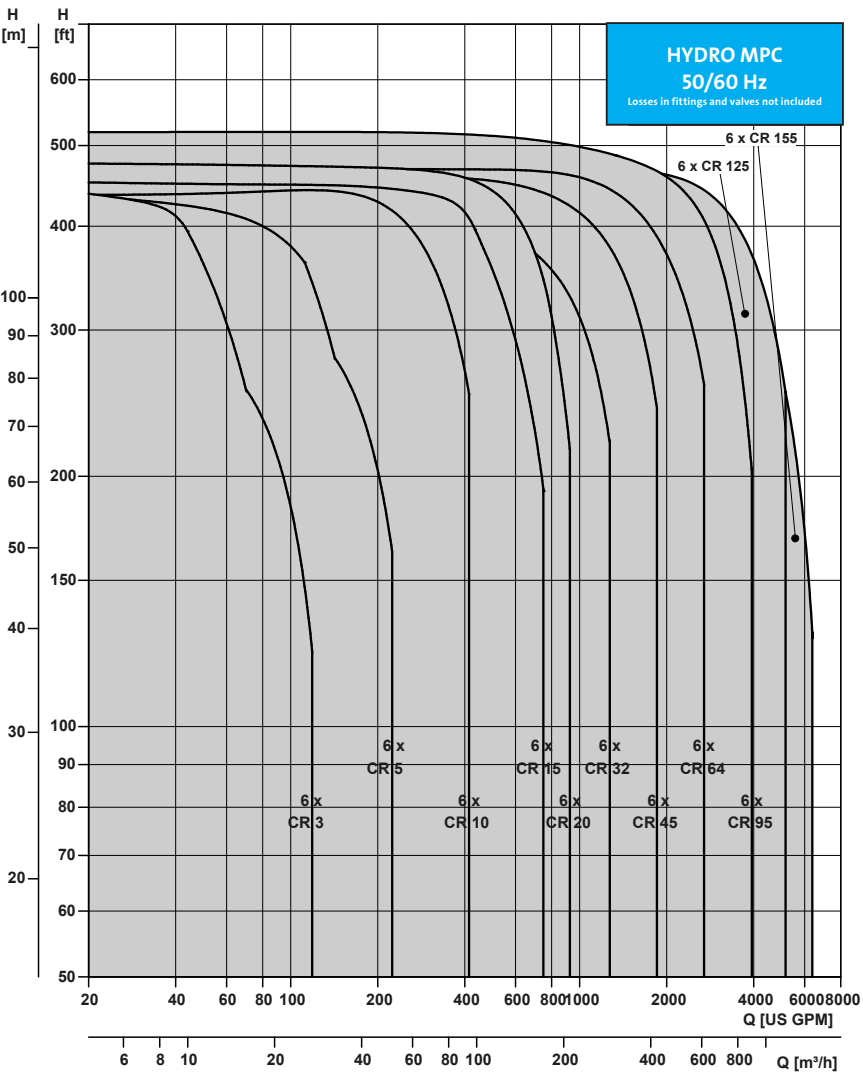
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TECHNICAL DATA

HYDRO MPC INFORMATION	
FLOW, Q (2–6 PUMPS):	max. 6,000 gpm (1,363 m³/h)
HEAD, H:	max. 1,000 ft (305 m)
WORKING PRESSURE:	max. 400 psi (27.6 bar)
LIQUID TEMPERATURE:	32 °F to 180 °F (0 °C to 82 °C)†
APPROVALS:	• System NSF 61/372 Certified • OSHPD — Seismic Certification (OSP-0491-10) • UL Listed Packaged Pumping System

† Higher temperatures available on request.

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Compact Horizontal Multistage Pumps

GRUNDFOS CM/CME

The Grundfos CM range of horizontal multi-stage pumps provide a compact, reliable and quiet solution designed to work on a variety of applications. While CM pumps are fitted with mains-operated motors, the CME incorporates a motor with an integrated frequency converter and PID controller.



KEY FEATURES AND BENEFITS

- Nordlock® washer ensures secure clamping of pump impellers and provides quick and easy assembly and disassembly
- Grundfos designed mechanical o-ring shaft seal offers superior dry running capabilities and reduced sticking problems
- Encapsulated sleeve o-ring design retains o-ring when temperature change causes expansion and contraction
- Labyrinth seal provides protection for motor bearings and reduces maintenance
- Rotation indicator allows you to quickly check if 3-phase electrical connection is correct; indicator shows black if correct, white if incorrect
- Filling plug is sealed by o-ring for easy maintenance
- CME option with integrated pump, motor and variable frequency drive delivers a plug and pump solution AISI 304 stainless steel and AISI 316 stainless steel

APPLICATIONS

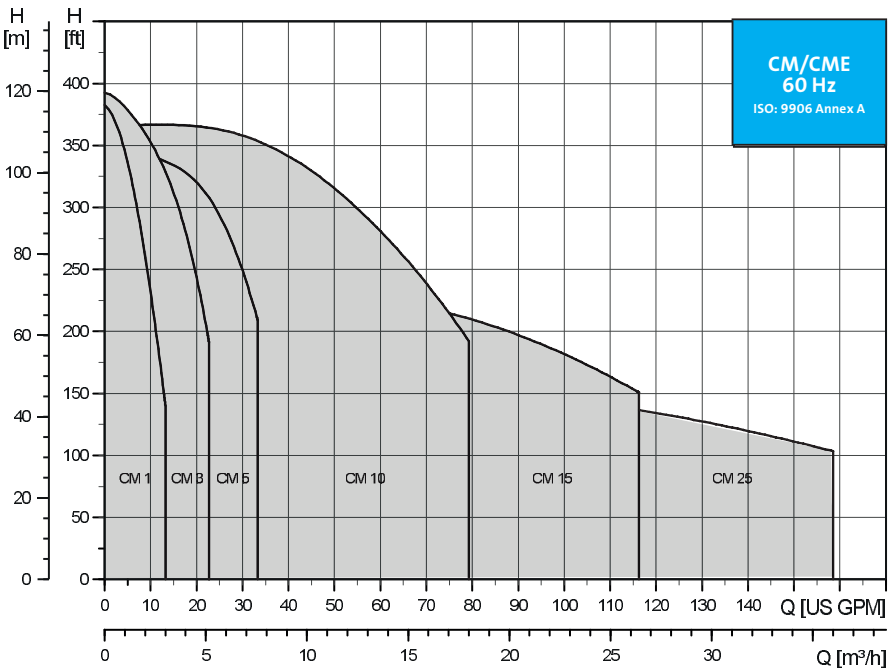
- Washing and cleaning
- Temperature control
- Water treatment
- Chemical and pharmaceutical industries
- Building services
- Irrigation

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TECHNICAL DATA

CM/CME	
FLOW, Q:	max. 160 gpm
HEAD, H:	max. 393 ft
LIQUID TEMPERATURE:	-22 to 248°F
OPERATING PRESSURE:	max. 232 psi
POWER:	0.3 to 8.4 hp

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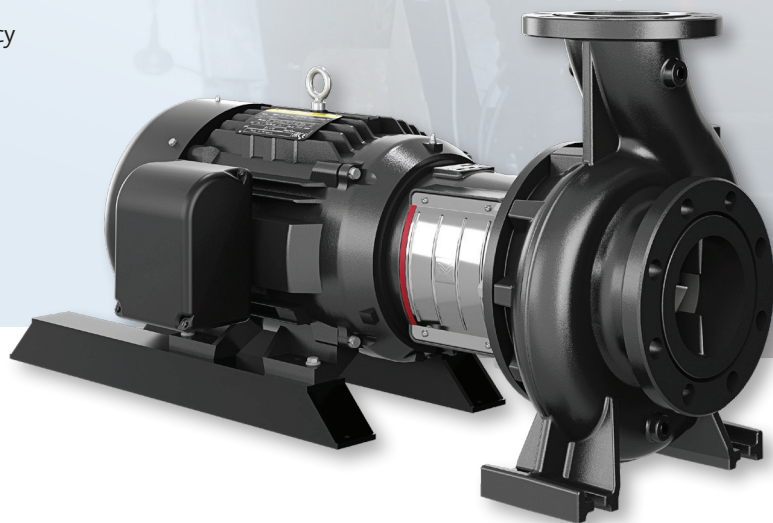
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Split-Coupled End-Suction Pump

GRUNDFOS NBS

The N-series offers three different end-suction models: the frame-mounted NK, close-coupled NB and split-coupled NBS.

The N-series delivers industry leading efficiencies that future-proof them against government efficiency regulations. The NBS is designed to bring faster installation, greater efficiency and reliability, along with easier serviceability throughout the pump's life. With up to a 35% smaller footprint, Lifetime Alignment Guarantee, back-pull out design and a new and revolutionary hard-faced seal designed to improve reliability and reduce service costs, the NBS delivers on our promise that industrial temperature control from Grundfos — it's everyone's comfort zone.



KEY FEATURES AND BENEFITS

Installation

- No baseplate or grouting required reducing installation costs
- No alignment required between the pump and motor with our Lifetime Alignment Guarantee — eliminating laser alignment costs and reducing installation time
- Optimized, space-saving design has up to a 35% smaller footprint compared to traditional frame-mounted design pumps
- Top centerline discharge design allows for self-venting and more compact piping designs

Efficiency and Reliability

- Industry leading efficiencies you can count on, because of advanced Computational Fluid Dynamics (CFD)
- New Silicon Carbide (SiC) / Silicon Carbide (SiC) hard faced seal's robust design offers increased temperature range, better abrasives handling and longer life versus standard designs (standard on all N-Series pumps)
- Backed by our Lifetime Alignment Guarantee so you never have to worry about undue wear and tear on mechanical seals, bearings and energy losses due to misalignment
- Optimized, stainless-steel impeller design increases efficiency and reduces NPSH required
- Balanced impellers reduce noise and vibration for quiet operation and prolong seal and bearing life

- 4" and above models have an internal dual-volute design for increased efficiency, lower life-cycle costs and prolonged seal and bearing life
- Integrally cast diffuser vane reduces turbulence

Serviceability

- Foot-mounted volute for increased pump stability
- Spacer-coupling design allows for back pull-out and easy access to mechanical seal without removing the motor or disturbing piping

APPLICATIONS

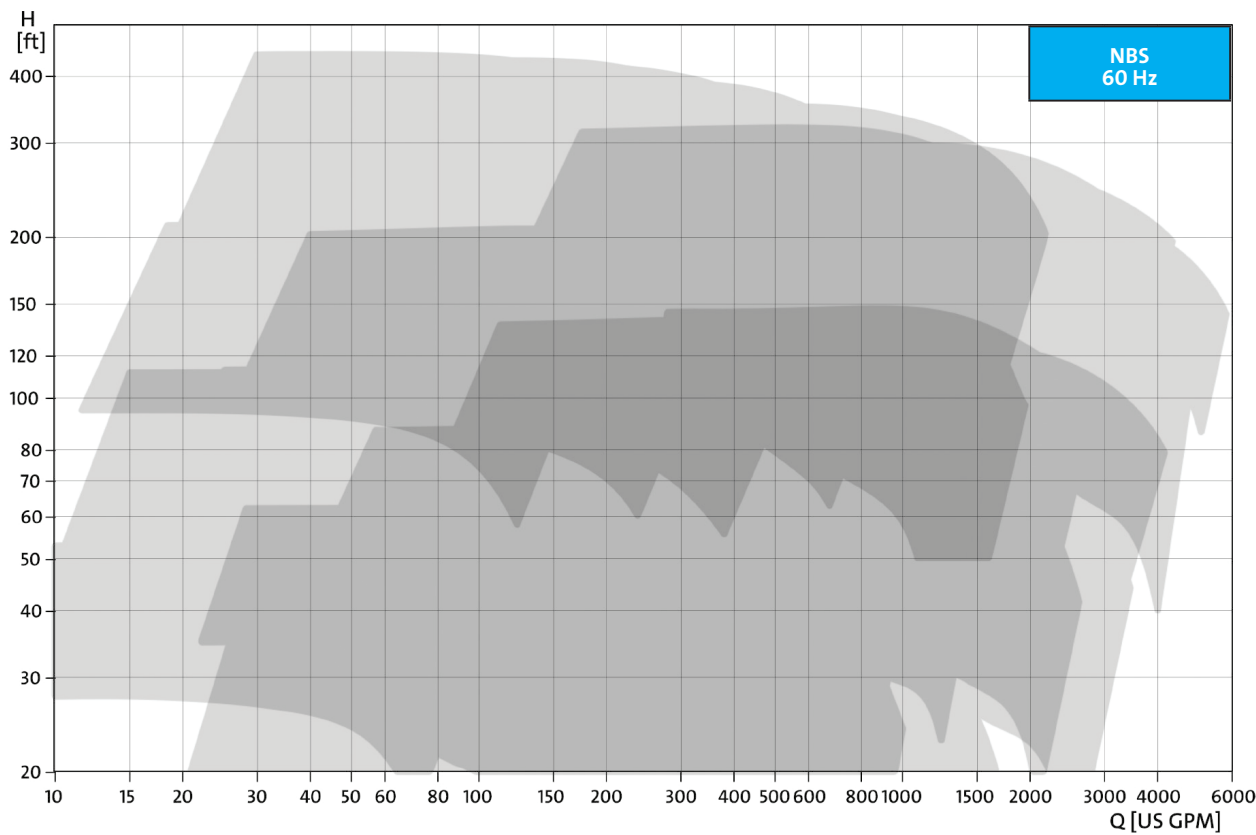
- Cooling
- Heating
- Industrial HVAC

TECHNICAL DATA

NBS	
FLOW, Q:	max. 5,800 gpm
HEAD, H:	max. 450 ft
LIQUID TEMPERATURE:	-13°F to 248°F (Optional: 284°F)
WORKING PRESSURE:	max. 232 psi (Optional: 362 psi)
HP RANGE	max. 250 hp
SPEED	3600, 1800, and 1200 RPM
DISCHARGE SIZES:	1.25 to 10 in. <ul style="list-style-type: none">Centerline: 1.25–6 inTangential: 8–10 in



PERFORMANCE DATA



Visit grundfos.us/pei to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.

Boosting Pumps

GRUNDFOS BMS

The BMS range of booster modules are primarily used for reverse osmosis and ultrafiltration applications. The new range offers efficiency improvements compared to earlier ranges. It features a directly coupled pump powered by an asynchronous motor and variable frequency drive. Additionally, the improved design makes maintenance and service easier than ever.

KEY FEATURES AND BENEFITS

- Plug and pump solution is configured at the factory to ensure easy installation and start-up
- High speed, asynchronous motor provides improved efficiency with speed range of 4,500-5,500 rpm, creating high pressure of up to 1,200 psi (82.7 bar)
- Intelligent variable frequency drive controls the speed of the asynchronous motor, providing advanced possibilities for communication and featuring functionalities such as overload protection while running, auto ramp up/down and online log-on
- An innovative design that provides easy access to the shaft seal and thrust bearing of the pump makes maintenance and alignment quick and easy
- Only three tools are needed to take pump apart: 17mm &19mm open-end wrenches and 5 mm allen wrench
- All wet-end components are Super Duplex and 904L stainless steel suitable for use in seawater and brackish water applications
- Shaft seal is made from ceramic/silicon carbide, for high-pressure applications
- Built-in ceramic and carbon thrust bearing absorb the axial thrust from the pump, and thrust bearing arrangement and NBR rubber pump bearings are water lubricated, maximum durability
- Six digital and/or analog inputs and outputs are available
- Easily integrated in any water treatment system
- Designed for high flows and pressure
- Built-in check valve



APPLICATIONS

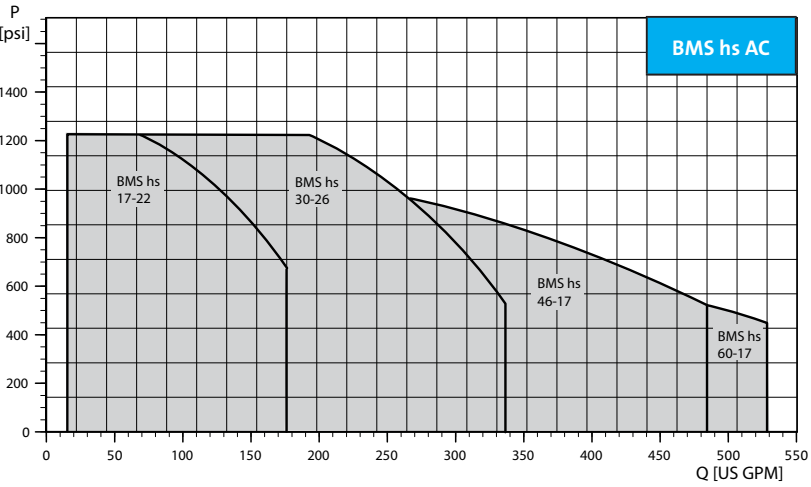
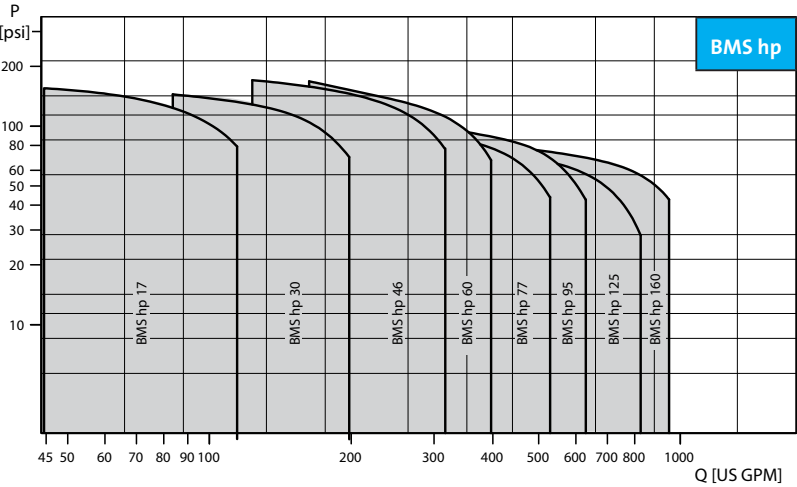
- Reverse osmosis systems
- Ultrafiltration
- Filtration systems
- Pressure boosting systems and water supply
- Irrigation

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TECHNICAL DATA

BMS HP INFORMATION		BMS HS SERIES INFORMATION	
FLOW, Q:	max. 946 gpm (215 m³/h)	FLOW, Q:	max. 530 gpm (120 m³/h)
OPERATING PRESSURE:	max. 1200 psi (82.7 bar)	OPERATING PRESSURE:	max. 1200 psi (82.7 bar)
LIQUID TEMPERATURE:	max. 104°F (40°C)	LIQUID TEMPERATURE:	max. 104°F (40°C)

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WE ARE IN THE WATER BUSINESS WITH YOU

As a pioneer and global leader in water pump technology, Grundfos creates intelligent, sustainable solutions to help solve the world's water and climate challenges. Through our heritage, we have the experience and innovative capabilities to help our partners, customers and communities move water in an increasingly energy and water efficient manner. We see this as not only a great business opportunity, but as an obligation to ensure the world heads toward a more sustainable tomorrow. Our complete portfolio of pumps and solutions are designed for commercial, residential, groundwater, municipal and industrial applications with emphasis in trendsetting, energy efficient technologies such as permanent magnet motors and advanced pump controls and monitoring.

BECAUSE WATER MATTERS, AND SO DOES YOUR BUSINESS.

As a company we will contribute by:



Cutting our water consumption in half by 2025



Providing safe drinking water to 300 million people in need by 2030



Becoming climate positive by 2030

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