

HIGH EFFICIENCY, LOW MAINTENANCE

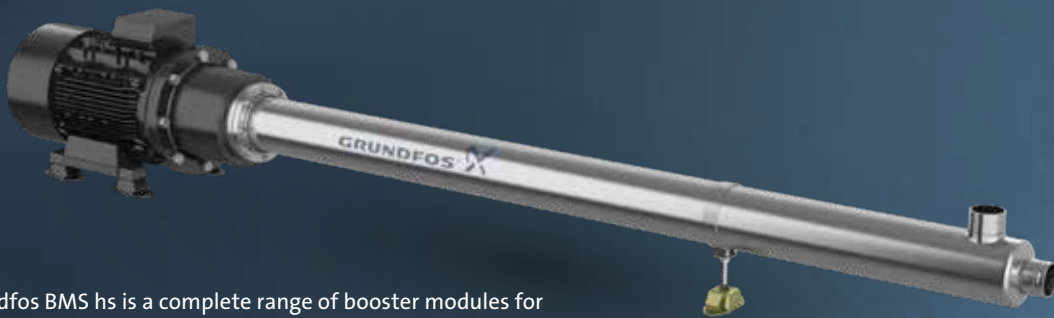
Expanded booster module range



GRUNDFOS®

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BMS HS: BOOST YOUR EFFICIENCY



Grundfos BMS hs is a complete range of booster modules for reverse osmosis and other high-pressure applications featuring a simplified design that ensures energy savings and efficient operation. The secret is a directly coupled pump powered by a high-speed motor, where the high speed makes a variable frequency drive mandatory. With a permanent magnet (PM) motor, the Grundfos CUE variable frequency drive is included. If an asynchronous (AC) motor is chosen, a variable frequency drive is still required, and we recommend the Grundfos CUE. Add to that an improved design that makes maintenance and service easier than ever, and you have a winning concept.

- High efficiency means energy savings
- Easy maintenance and alignment
- Extreme durability and reliability
- Very small footprint
- Easily integrated in any water treatment system
- Constructed in stainless steel and super duplex for critical parts
- Built-in non-return valve

Application areas

The BMS hs is designed for use in

- Reverse osmosis systems
- Water reuse
- High-pressure washing systems
- Pressure boosting systems and water supply



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FEATURES AND BENEFITS THE HIGHLIGHTS



Flexible motor options

Our BMS hs (high speed) range can create a pressure of up to 82.7 bar, and the pump motors have a maximum speed of up to 5,500 RPM. We offer two motor options. Our PM motor is controlled by a factory-supplied Grundfos CUE with an optional communication module and various adaptation options. Alternatively, you can order an AC motor which can be supplied with a Grundfos CUE or connected to an existing variable frequency drive onsite.

Easy maintenance

Enjoy trouble-free maintenance with the range of BMS hs pumps. The BMS hs products offer an innovative design that provides easier than ever access to the shaft seal and thrust bearing of the pump – in fact, you only need standard tools to take the pump apart. Needless to say, this reduces maintenance hassle and system downtime.

Extreme durability

In the BMS hs range, all critical components in contact with water are made of super duplex stainless steel. That makes the pump suitable for use in seawater and brackish water applications.

It's reliable, trust us

Grundfos has 25+ years of experience in designing, manufacturing and testing pumps for reverse osmosis. Every component used in the BMS hs range has been put through rigorous tests.

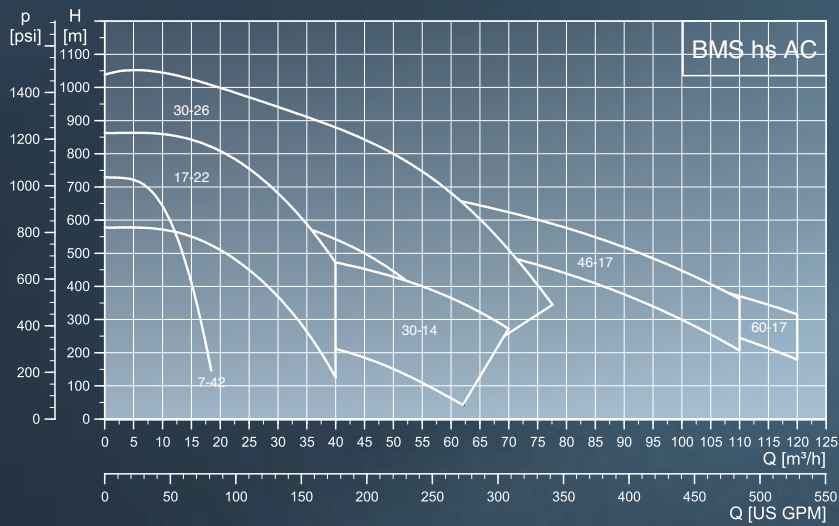
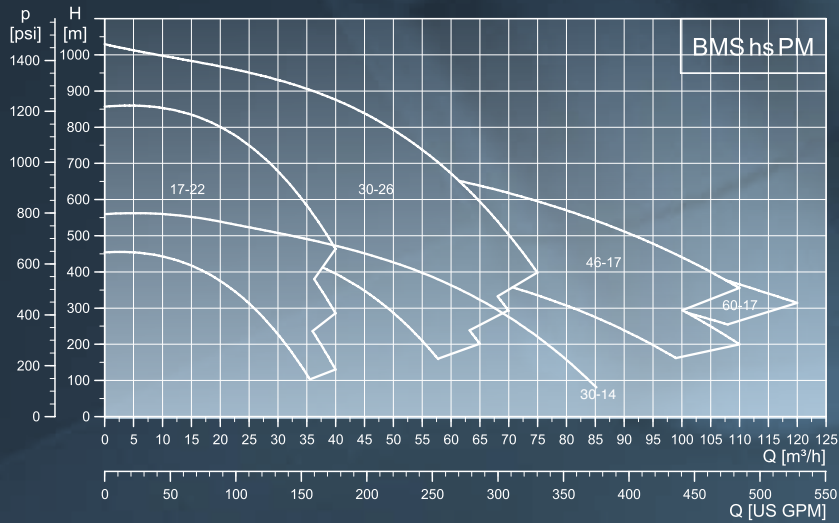
Easy selection

Enjoy a simpler selection process with the BMS hs range. The product program has been reduced, and you can find the pump of your need easily in the Grundfos Product Center.



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Standard ring/open-end spanners and standard keys are needed for maintenance



TECHNICAL INFORMATION

The toughest materials

- ▶ All critical components in the BMS hs range of pumps are super duplex stainless steel suitable for use in seawater and brackish water applications
- ▶ The shaft seal is made from Silicon carbide / Resin impregnated carbon, especially designed for high pressure

- ▶ The thrust bearing material is ceramic and carbon
- ▶ Pump bearings and seal rings are made of NBR/LSR rubber

Built-in non-return valve

The BMS hs range has a built-in non return valve suitable for high pressure and required in combination with pressure exchanger applications.



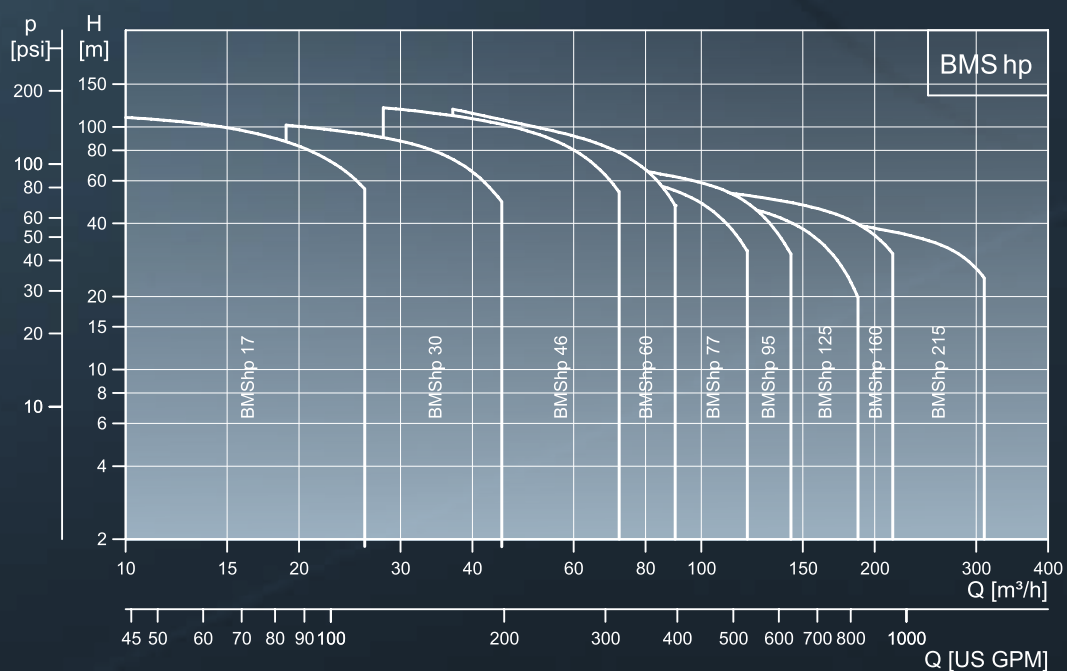
BMS HP:

HIGH INLET PRESSURE PERFORMANCE

The BMS hp booster module is suitable for high-pressure industrial and water supply applications. It is capable of increasing system pressure up to 82.7 bar (1,200 psi) and can handle an equally high inlet pressure. The BMS hp is the optimum solution for the following:

- reverse osmosis applications
- second stage pump for high pressure applications
- pumps capable of handling high system pressures

The BMS hp can be fitted with a fully enclosed, fan-cooled 2-pole Grundfos MG standard motor or an MGE motor with integrated VFD.





BMSX:

UNBEATABLE HIGH EFFICIENCY BOOSTER SYSTEM

The Grundfos BMSX pump system has a unique design dedicated to seawater and brackish water desalination. The BMSX system consists of a BMS hs pump, a BMS hp pump and an isobaric pressure exchanger with an efficiency up to 98%.

- ▶ Capable of up to 1,500m³/day with an energy consumption starting as low as 2 kwh/m³ of produced water
- ▶ Features components made of super duplex stainless steel, polymer and ceramic, which makes it extremely resistant to its operating environment
- ▶ Super efficient and highly dependable regardless of the application
- ▶ Compact design and a very small footprint

How does it work?

- ▶ The BMSX system consists of a BMS hs (high speed) pump, a BMS hp (high inlet pressure) pump and a PX isobaric pressure exchanger
- ▶ Combining these three components, the BMS hs pump is reduced to almost 41% of the overall energy consumption, compared to a system without energy recovery, resulting in lower TOTEX.
- ▶ The BMS hp (high inlet pressure) pump contributes only about 2% of the total energy, to compensate for losses in lubrication or friction.
- ▶ Finally, the PX isobaric pressure exchanger contributes the remaining 57% of the energy required, by converting and transferring the high pressure from the brine to the remaining portion of the feed water. Not connected to any external power supply and incredibly efficient, it effectively reflects system's total energy savings, contributing substantially to the total OPEX compared to conventional systems without energy recovery.

BMSX SYSTEM CONFIGURATION

TRY IT!
POWERFUL BMSX CONFIGURATION ENGINE
 See your installation immediately!

Try the powerful BMSX configuration engine and get to see our recommended selection showing your potential energy savings. The installation illustration is available immediately through Grundfos Product Center (GPC) – our online pump sizing tool.

From the 'Advanced sizing by application' tab, simply enter your system parameters and your evaluation criterion (price, energy or price + energy costs). The powerful configuration engine will then generate an 'Installation illustration', showing all BMSX modules with flow and system data, correctly sized and fully optimised.

If you have specific requirements for your system, for example for Control mode, Load profile, Configuration, Pump design, Operational conditions, Lifecycle costs, you can add these too.

BMS HS
 (high speed) pump

BMS HP
 (high inlet pressure) pump

SYSTEM MEMBRANES



ISOBARIC PRESSURE EXCHANGER

In the Installation illustration, the sizing result lists energy consumption, energy cost, lifecycle cost and specific energy consumption. This is in addition to performance data for the high-pressure pump, booster pump, pressure exchanger, for membrane flow and pressure and for permeate flow.

The BMS hs/BMS hp/BMSX booster modules offer highly efficient, reliable and low maintenance boosting for the following application areas:

- Reverse osmosis systems
- Nanofiltration
- High-pressure washing systems
- Pressure boosting systems and water supply

Find the pump you need at www.grundfos.com