

# HIGH EFFICIENCY, LOW MAINTENANCE

New booster module range

# BOOST YOUR EFFICIENCY

The BMS hs range is a completely new range of booster modules for reverse osmosis and filtration applications which improve efficiency compared to earlier ranges. The secret is a directly coupled pump powered by a permanent magnet motor. 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
- Designed for high flows and pressure
- Built-in check valve

## Application areas

The BMS hs is designed for use in

- Reverse Osmosis systems
- Ultra filtration systems
- Filtration systems
- Pressure boosting systems and water supply



# FEATURES AND BENEFITS THE HIGHLIGHTS

## Higher efficiency

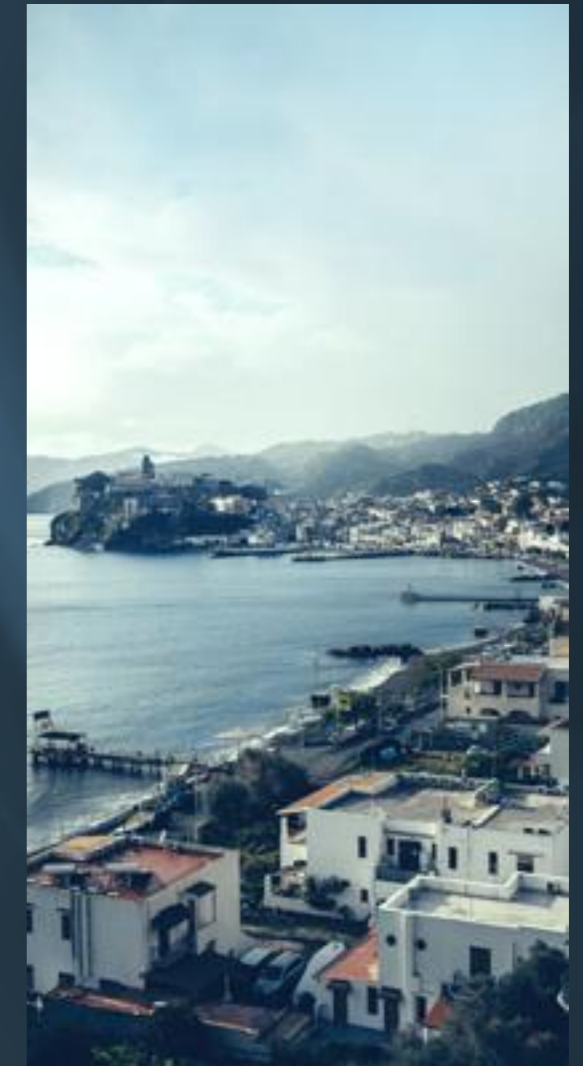
A permanent magnet motor is the secret behind the improved efficiency of the BMS hs range; hs stands for high speed to create high pressure of up to 82.7 bar. And its motor has a speed range of 4000 to 5500 RPM. The speed of the motor is controlled by a variable frequency drive, which features an optional communication module and the possibility of various adaptations to the application. The high-speed motor also gives the BMS hs range a smaller footprint and drastically reduces the weight of the pump.

## Easy maintenance

Enjoy trouble-free maintenance with the new 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 three tools to take the pump apart. Needless to say, this reduces maintenance hassle and pump downtime.



17 & 19mm Ring/open-end spanner and 5mm Allen key



## 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.

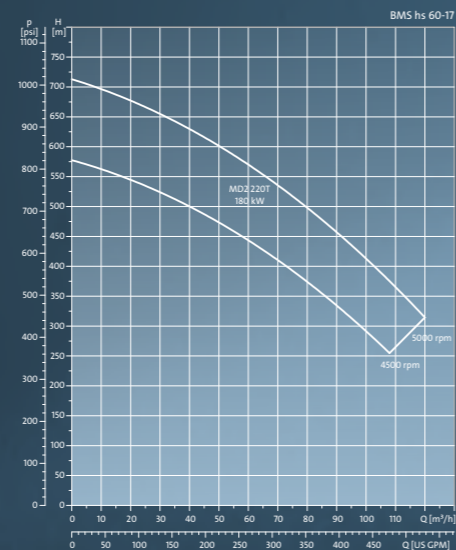
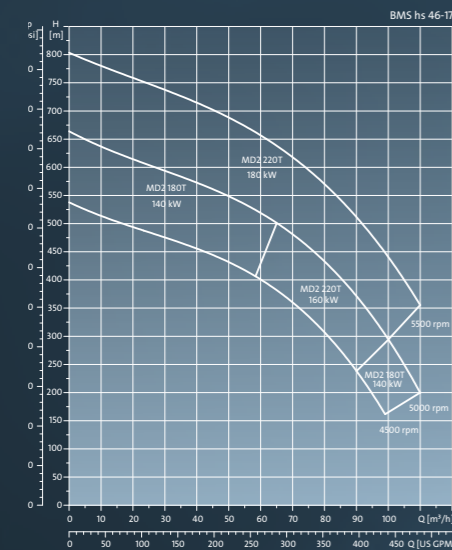
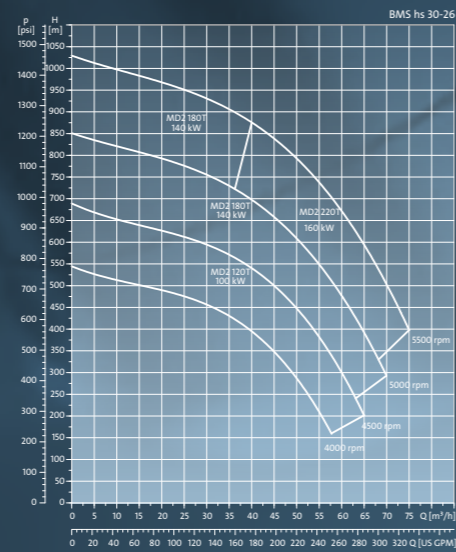
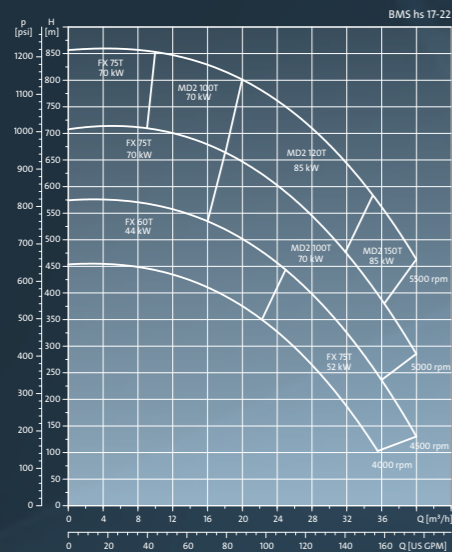
## It's reliable, trust us

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 and the Grundfos brand is your guarantee of a premium quality product.

## Easy selection

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





## 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 carbon/silicon carbide, especially designed for high pressure
- The thrust bearing material is ceramic and carbon

- Pump bearings and seal rings are made of NBR rubber

### Built-in thrust bearing

The BMS hs range has a built-in thrust bearing that absorbs the axial thrust from the pump. The thrust bearing arrangement and pump bearings are water lubricated, and all materials used are tested and well known, ensuring maximum durability.

## INNOVATIVE FREQUENCY CONVERTER

An innovative and intelligent variable frequency drive controls the speed of the permanent magnet motor in the BMS hs. This unique VFD has advanced possibilities for communication and features the following functionalities:

- Self test at start up
- Overload protection while running
- Auto ramp up/down

- Plug and play, configured from factory
- Online log on
- Inputs/Outputs - 6 digital and/or analog

## BMSX:

### UNBEATABLE HIGH EFFICIENCY BOOSTER SYSTEM

The new 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 delivering 1.500m<sup>3</sup>/day with an energy consumption starting as low as 2 kwh/m<sup>3</sup> 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 an isobaric pressure exchanger
- The BMS hs pump creates the needed flow and design pressure through the membranes of the system
- However, only 40% of the energy needed is generated by the actual pump; the remaining 60% is provided by the pressure exchanger which converts energy from the brine into an energy source used to create the needed pressure
- This is what makes it possible to reach the incredible efficiency of up to 97% in the pressure exchanger
- The pressure loss in the exchanger is equalized by the BMS hp and the Variable Frequency Drive that maintain the desired pressure for the entire reverse osmosis process

## BMST:

### BOOSTER SYSTEM - TURBINE INCLUDED

The BMST booster systems consist of a BMS hs and a Pelton turbine. This power pack makes it possible to deliver the same performance as with a standard centrifugal pump, and to save up to 35% of the pump's total power consumption. BMST booster systems are suitable for desalination plants.

- Corrosion resistant material: all critical components are Super Duplex Stainless steel.
- Capable of handling aggressive liquids such as brackish water and seawater
- Easy to integrate into skid mounted systems.



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

- Reverse Osmosis systems
- Ultra filtration systems
- Filtration systems
- Pressure boosting systems and water supply

Find the pump you need at [www.grundfos.com](http://www.grundfos.com)