

# Split-Coupled End-Suction Pump

## GRUNDFOS NBSE

The Grundfos NBSE split-coupled, end-suction pump with integrated permanent magnet motor, drive, and control serves as the industry standard in performance, quality, and durability. These products allow for dynamic and intelligent solutions to many commercial building and industrial applications. With a selection of forty-one sizes available, the NBSE provides all the benefits of an NBS pump, enhanced by a high-efficiency permanent magnet motor and variable frequency drive, manufactured by Grundfos.

The Grundfos MLE permanent magnet motor with integrated variable frequency drive exceeds IE5 efficiency levels set by the International Electrotechnical Commission (IEC), currently the highest efficiency worldwide for electrical motors. NEMA Premium Efficient motors are equivalent to IE3, meaning these MLE motors are two levels above NEMA Premium Efficiency. The combined motor and VFD efficiency is higher than a NEMA Premium motor alone.



### KEY FEATURES AND BENEFITS

#### INSTALLATION

- Seamless integration with Grundfos MLE integrated motor, drive and control for an all-in-one solution that speeds installation, startup and commissioning
- Intelligent control options, including constant differential pressure and proportional differential pressure control that optimize the system based on actual demand
- Large, graphical display control interface (HMI) on MLE motor provides control of all settings, without need of separate interface device (GO Remote), and user-friendly operation
- No baseplate or grouting required, reducing installation costs
- No shaft alignment is required — 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

#### EFFICIENCY AND RELIABILITY

- Advanced Computational Fluid Dynamics (CFD) provides reliable industry-leading efficiencies, reduce vibration, and noise providing for prolonged seal and bearing life and quiet operation
- 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)

- Grundfos Lifetime Alignment Guarantee means your pump will never need an alignment, eliminating undue wear and tear on mechanical seals and bearings. A pump that never needs alignment will use less energy and require significantly less maintenance.
- Optimized, stainless-steel impeller design increases efficiency and reduces NPSH required

#### SERVICEABILITY

- Foot-mounted volute for increased pump stability
- Split-coupling design allows for easy access to mechanical seal without removing the motor or disturbing piping

#### APPLICATIONS

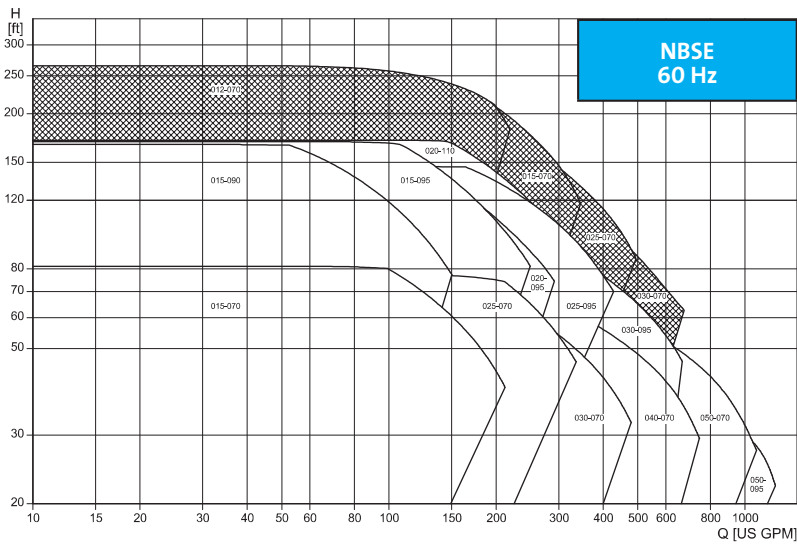
- Hot water systems
- Chilled water systems
- Condenser water
- District heating/cooling
- Water Utility
- Process water and Light industrial

TECHNICAL DATA

NBSE	
FLOW, Q:	max. 1200 gpm
HEAD, H:	max. 270 ft
LIQUID TEMPERATURE:	-13°F to 248°F
WORKING PRESSURE:	max. 232 psi
HP RANGE / SPEED:	3 to 15 hp /4000 rpm
	3 to 10 hp /2200 rpm
DISCHARGE SIZES:	1.25 to 5 in.

NBSE CONTROL MODES	
Proportional Pressure	•
Constant Flow	•
Constant Pressure	•
Constant Differential Pressure	•
Constant Temperature	•

PERFORMANCE DATA



THE PERFECT MOTOR IS HALF THE SOLUTION

For an intelligent pumping solution, the motor is half the story. Our E-motors (MLE) are frequency converter controlled motors that have been designed specifically for use with Grundfos pumps, and they feature unique functionalities that allow for complete system optimization. The new MLE permanent magnet (ECM) motor offers an additional 7-10% decrease in energy cost over NEMA Premium motors with industry standard variable frequency drives.

ULTIMATE FLEXIBILITY AND EFFICIENCY

The MLE motors can be operated to meet any individual needs for a specific solution. This makes them an excellent choice for a number of applications within heating, cooling and industrial processes – each of which are characterized by varying demands, different control needs, and varying number of operating hours.

NEW FUNCTIONALITIES FOR ADVANCED SOLUTIONS*	
<b>Real Time Clock**</b> Allows for calendar function for e.g. automatic system stop during weekends	<b>Manual Speed Operation Mode</b> Even while under external signal control, you can switch to manual speed operation mode to test the pump's operation
<b>2 Analog Inputs</b> Get Delta P and Delta T control with two sensors	<b>PT100/1000 Input**</b> Get temperature and differential temperature control at a low cost
<b>Timer Functions on Digital Inputs</b> For each digital input you can activate and set a delay time and a duration time	<b>Predefined Set-Point**</b> Get dynamic response to different operation profiles
<b>1 Analog Output**</b> Get relevant parameter information in real time	

\* New functionalities are only applicable to the Permanent Magnet MLE range

\*\* Advanced functional module FM300 is required for these functionalities

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