

# High voltage motors for pumps

## More for mining



ABB's motors meet high demands for efficiency, reliability and safety in harsh conditions and remote areas. They represent the ideal solution for pump applications in energy-intensive processes.

### Energy efficiency and lower cost of ownership

ABB's excellent mining application specific know-how and technical expertise, gained from thousands of mining installations, make us an ideal partner for mining companies who want to improve reliability and efficiency of their processes.

ABB's motors help mining companies to meet their challenges in water management: to move greater volumes of water efficiently to the mining location and within the plant.

Energy consumption is the most critical factor in the total life cycle costs of a pump, and about 20 percent of a mine's total energy consumption is used by pumps. Selecting the right motor lowers the cost of ownership of the entire mining plant.

### Direct-on-line or variable speed control

ABB's motors are compatible with different starting methods for pumps. The engineering of each motor is customized according to the pump's requirements.

Direct-on-line (DOL) is generally the most common, most straightforward and easiest starting method for pumps because they have mainly quadratic torque loads. The most important requirements for DOL-connected motors in pump applications

are starting current limitation and reduced voltage starting capability.

Variable speed drive (VSD) control allows smooth starting but is not normally used solely as a means of starting. VSDs are mainly used to improve process control. Controlling the pump motor speed with a VSD provides substantial energy savings compared to on/off control, throttling or any other control method. The pumps are run at their BEP (Best Efficiency Point) under all operating conditions, saving energy, decreasing CO<sub>2</sub> emissions and minimizing total operating costs. ABB's motor designers always work with the ABB Drives team to ensure customers get a solution that optimally matches their needs.

### High voltage induction motor solutions

ABB's induction motors, modular and rib cooled, are the workhorses of the industry due to their versatility, reliability and simplicity. Squirrel cage induction motors are available up to powers of 23 MW and voltages up to 15 kV, and usually represent the first choice in this power range. Connected either direct-on-line or via variable speed drives, they are usually the best choice for pump applications. ABB also offers a wide range of synchronous motors. They are a good solution in the case of high power and high torque requirements.



### **Slurry pumps**

Operating speed is one of the most important factors determining the lifetime of a centrifugal slurry pump. Full speed operation increases impeller wear and reduces the pump's lifetime. With a VSD the pump speed can be adjusted to match changes in system parameters such as flow rate, static head and settling velocity.

ABB has developed a low voltage permanent magnet motor and VSD solution that provides high torque at low speeds and is coupled directly to the pump. Eliminating the use of a gearbox – or belts and pulleys – avoids the losses incurred in mechanical transmission equipment and significantly reduces the maintenance needs of the system.

### **Your reliable partner**

With ABB you always have a partner to discuss different motor solutions to optimize your process. Our services do not stop at sales. We make it easy for you to reach us at every stage of your motor's life cycle.

ABB's extensive global network ensures local service delivery whenever and wherever you need it. The worldwide network includes over 60 service centers and more than 150 authorized service providers.

We offer predefined maintenance programs for all lifetime phases of all ABB motors, and preventive diagnosis and updates can help to further boost your competitiveness when needed.

For more information please visit:

[www.abb.com/motors&generators](http://www.abb.com/motors&generators)

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