

Artificial Lift

Artificial lift refers to any process that assists the flow of oil from a reservoir. Almost all oil production requires some version of artificial lift during the life of the well. Even if oil flows freely initially, over time the well pressure will decrease and the well will require some means of artificial lift for further extraction.

Baldor has solutions for many of the various methods of achieving artificial lift.

Beam Pumps

The most common method used for this purpose is the beam pump. The beam pump is a version of a rod pump; as the beam moves up and down, the rods move up and down in the well creating suction that lifts the oil to the surface.

Baldor makes and stocks Baldor•Reliance® oil field motors specific for these types of applications, along with Baldor•Dodge® belt pulleys for this purpose. The specifications for a pump in this application demands a high slip motor. The oil field pump motors come with the common voltages used in the oil fields: 230/460/796.



In some of the larger oil fields there has been a trend toward replacing the high slip motors with NEMA Premium® motors that are controlled by adjustable speed drives. The advantage is in energy savings and better well control of the pumping process. Baldor•Reliance IEEE841 motors are paired with ABB drives. Many times the drive is incorporated into a control system that monitors and optimizes the pump and flow of oil. The active front end of the ABB drive provides an advantage in system efficiency as it returns regenerated energy to the electrical supply.

ESP

The use of Electrical Submersible Pumps (ESP) is another way that artificial lift is created. These systems benefit from excellent control of the process. ABB ACS800 and ACS880 drives are two of the common drive solutions to control the motor as an integrated component of the oil field company's control system.

H Pumps

Horizontal pumps or H pumps, and progressive cavity pumps (PCP) are other areas where Baldor•Reliance motors, Dodge Disc Couplings, and Baldor•Dodge drives provide the reliable drive train required in the oil fields. The H pump is a multistage centrifugal pump, thrust chamber and conventional AC motor mounted on a common base. Low maintenance costs are one of the benefits of this choice. Because the components are not specialized, it is often a quick solution from order to delivery.



PCP

Progressive cavity pumps can be applied both downhole and as surface pumps. Their operating efficiency is better than many other choices which lowers operating expenses. They also may be selected based upon the viscosity of the liquids and the structure of the well.

ABB has a unique product for this application: the SynRM motor and ACS880 drive package. This combination provides guaranteed efficiencies for the package and increased system reliability. The simplicity of the rotor design and very low temperature rise that results increases bearing and insulation life.

Whether your application requires reliable and rugged products, precise control or efficiency leading technology, Baldor Electric and ABB have the right solution for you.



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