DESIGN OF ELECTRICAL SUBMERSIBLE PUMP
WITH A CAPACITY OF 54 M³/JAM AND HEAD PUMP OF
204 METER

Abstract

In the dry season in Indonesia there are several areas where the community is difficult to get clean water. As the area is dry and barren mountain ranges that make people walk up to a few miles to get clean water source. Clean water is difficult to obtain and are usually found at depths large enough to hundreds of meters. Submersible pumps suitable for clean water supply needs of the community with the capacity and depth large enough.

The design of this submersible pump includes several steps including: making initial data such as capacity, condition of the well, and motor rotation. Counting losses (head losses) that passes through the pump so identify the capacity of the pump head, the magnitude of specific speed (ns), and the number of stages required. Later plans include the dimensions of the impeller, wearing ring, vane steering flow (return passages), shaft, keyways, pivot star (splines), clutch and bearings.

The result of design and calculations have been done obtained a submersible pump design with centrifugal type of multistage which operating in the capacity of 54 m³/hr with head pump for 202 yards and fluid form of water (water) has a 83% efficiency and power equal is 46,43 hp.

Keywords: Submersible pump, Capacity, Headlosses, Pump Head, Shaft, Impeller, wearing ring, return passages, and bearings
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