DESIGN OF CONDENSATE WATER PUMP WITH
CAPACITY 0.07 m³/s AND HEAD 35 m

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Abstract
In the industry, pumps have very important role, they are used for delivering liquid from a region to another. In Power Plant System by Vapor, that use pumps so many, one of them is water condensate pump used for delivering condensate from condenser to deaerator. Water condensate pump has to have a special design used to avoid air penetrating into the pump. Water condensate pump has to have enough pressure in order to deliver water condensate from condenser to deaerator. In this design, pump will be arranged on three stages, which the first stage is of the double suction to give a wide suction area and it will be placed between the next two stages, it is possible to avoid the penetration of air, since the stuffing boxes will be pressurized by the second and third stages. By arranging pump like that system also to ensure complete balancing of the axial forces.

Design of multistage water condensate pump is started by determining head, flow, and motor speed. From these datas will be calculated specific motor to determine impeller type. The part of the pump will be designed such as impeller, shaft, volute, wearing ring, bearing, and keyshaft.

From the design will be get a multistage condensate water pump for a working fluid of condensate water with capacity 0.07 m³/s and head 35 m. And also proper material selection which fit with the pump working condition.

Keyword : Condensate Water, Condenser, Deaerator, Double suction, Head, Stuffing-boxes, Volute, Wearing ring.
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