



Amps, kW, and NEC Ratings ⇨ the Brake Horsepower Game

Contributed by Zoeller Engineering Department

For a long time in the business of selling submersible pumps, there has been a game that some pump manufacturers play with published brake horsepower (BHp) and pump efficiency. This game involves rating a pump with a high pump efficiency and BHp but the overall efficiency (wire-to-water) is the same or less than the competition. This is done mathematically by placing certain hydraulic losses into the motor losses that will cause the BHp and pump efficiency to be higher. Since many manufacturers do not list the overall efficiency or kW input in their catalog, the typical customer will never know. The important thing is not what the BHp rating of the pump is but how much power will it use in a certain application. Zoeller Company does not and will not play games with our ratings. This article will try to explain some of the differences between our ratings versus the competition.

Many people once asked us why it takes a larger BHp pump from us to do the same thing as another manufactures smaller BHp pump. Well the answer was two fold. First, at one time our pump efficiency was not as high as our competition, but we have done some things through hydraulic changes to improve over the years. We now have fixed this problem on all models.

The second part of the riddle comes from how we rate our product. The National Electric Code (NEC) gives certain guidelines for the full load amp (FLA) requirements on electrical equipment. We at Zoeller are trying to follow these guidelines so the electrician will provide the correct branch circuit for the pump equipment. This is not always true for other manufactures. Sometimes the FLA will far exceed the maximum set forth by NEC.

So the next time someone questions our pump ratings, remember, there is more to it than just comparing the BHp ratings between two pumps, try comparing the amps / kW also. The BHp rating is not nearly as important as how much power will the product consume.

Oversizing Impellers

Our philosophy at Zoeller Company has been to provide a pump that will be non-overloading for the entire length of the pump curve. By doing this many models will operate fine from 10' TDH all the way to shut off. In some instances this leaves us at a disadvantage. If a specific job has 50' of static lift there is no way the pump will ever operate below 50' TDH. For cases such as this we are willing to oversize an impeller on a motor. This will give you a smaller BHp size that will have the full life of a larger pump at a much more economical price. We call this oversizing the impeller. Curves on many models are available in the engineering section of the catalog for doing this. When requesting an oversized impeller be prepared with the static head of the application because we are still cautious and will request this information from you before we will process the order.