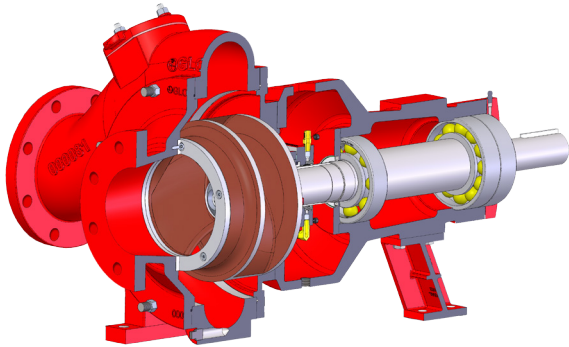


GLOBAL PUMP[®]

A MERSINO COMPANY

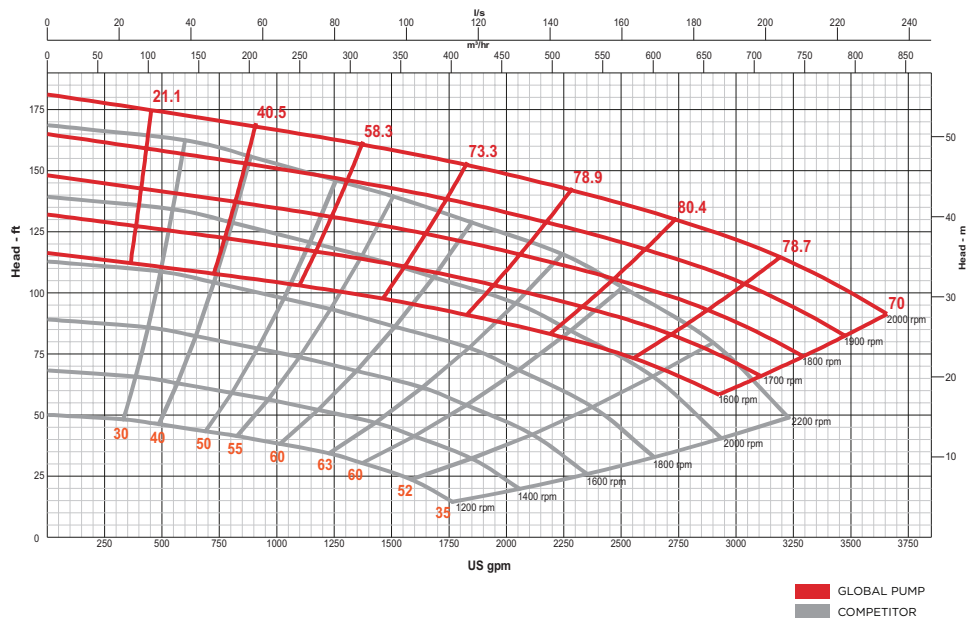
IMPELLER IMPACT ON PUMP EFFICIENCY



The versatility of portable, automatic priming trash pumps makes them ideally suited for many municipal and industrial sewage and wastewater applications. Selecting a pump with the optimal impeller type - enclosed or open - helps determine the overall field performance and operational cost of the pump.

	Enclosed Impeller	Open Impeller
Efficiency leading to lower fuel cost		
Low wear rate		
Inexpensive wear parts		
Easy access to pump cleanout		

The example to the right shows the efficiency of an 8" Global Pump using an enclosed impeller versus an 8" competitor pump with an open impeller. Open impeller pumps have a lower efficiency due to recirculation between the impeller and casing. They also experience a higher impeller and casing wear rate between the impeller and the face of the casing.



SAVINGS AS EASY AS 1-2-3

Global Pump models are designed with a state-of-the-art enclosed impeller that ensures both high efficiencies (fuel savings) and long component life due to lower wear rates. These factors combine to provide you with savings that allow our pumps to pay for themselves fairly quickly, as opposed to comparable competitor pumps.

1 - DETERMINE THE REQUIRED HORSEPOWER

Understanding how much power is required to achieve a specific duty point will help illustrate how much energy and fuel are required. To do so, we need to determine water horsepower, or the power water gains from a pump. We then determine brake horsepower, or the actual power required by the pump end, based on efficiency. The following example uses a duty point of 2500 GPM @ 100' of TDH to compare an 80% efficient 8" enclosed impeller Global Pump to a comparable, but only 60% efficient 8" open impeller pump.

$$\text{WHP} = (\text{Flow} \times \text{TDH}) / 3960 \text{ GPM-F}$$

$$\text{WHP} = (2500 \times 100) / 3960 = 63$$

$$\text{BHP} = \text{WHP} / \text{Pump Efficiency}$$

$$\text{Global Pump BHP} = 63 / .80 = 79$$

$$\text{Competitor Pump BHP} = 63 / .60 = 105$$

2 - CALCULATE THE FUEL CONSUMPTION

A fuel consumption rate of .055 gallons per HP per hour is typical for an engine of the size used in this example.

$$\text{Fuel Consumption} = \text{BHP} \times \text{Fuel Burn Rate}$$

$$\begin{aligned} \text{Global Pump Fuel Consumption} \\ 79 \times .055 = \sim 4.34 \text{ GPH} \end{aligned}$$

$$\begin{aligned} \text{Competitor Pump Fuel Consumption} \\ 105 \times .055 = \sim 5.77 \text{ GPH} \end{aligned}$$

$$\begin{aligned} \text{Fuel Consumption Differential} \\ 5.77 - 4.34 = 1.43 \text{ GPH} \end{aligned}$$

3 - CALCULATE THE FUEL SAVINGS

Using an average diesel fuel cost rate of \$3 per gallon and a fuel consumption difference of 1.43 GPH, the competitor pump costs \$4.29 per hour more to operate than the comparable Global Pump. A full year's operational savings using a Global Pump nearly pays for the purchase of the pump over its competition.

$$\begin{aligned} \text{Daily Savings} &= \text{Fuel Cost/G} \times \text{Fuel Consumption Difference/Hour} \times 24 \text{ Hours} \\ &= 3 \times 1.43 \times 24 = \$102.96 \text{ in Fuel Savings Per Day} \end{aligned}$$

$$\begin{aligned} \text{Annual Savings} &= \text{Daily Savings} \times 365 \text{ Days} \\ &= 102.96 \times 365 = \$37,580.40 \text{ in Fuel Savings Per Year} \end{aligned}$$



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