



Pump Users
International Forum 2008

Technical Paper

Chemical and process industry

Session 10-6

Pump Selection Matters: Determine a Cost Effective Solution for your Application

Author:

Dr. Dirk Kollmar
Business Developer Standard Pumps Industry
KSB AG
67227 Frankenthal, Germany

Co-Author:

Katrin Abraham
Business Developer Standard Pumps Industry
KSB AG
67227 Frankenthal, Germany



Summary

Pumps are the most important machines in industry regarding the consumption of electrical energy with a share of 30%. Large pumps are usually matched to the system and tailored to the application, thus ensuring good energy efficiency and low operating costs. Pumps up to 40 kW due to their large population in industry have a considerable share of the total amount of energy. Reducing their energy consumption requires efficient methods rather than individual engineering. Different technological solutions are at hand to optimise the energy consumption: Low-energy system design is the key factor in the hand of the operator whereas variable speed control, trimming the impeller and high efficiency motors are possible solutions that can be offered by the pump manufacturer. A variable speed drive will provide the lowest energy consumption in most cases, but it adds complexity to the system and increases investment costs. Using motor mounted variable speed drives offers interesting new opportunities and potential for cost saving compared to cabinet mounted solutions. High efficiency motors reduce the energy consumption by 1-3%. Trimmed impellers save 10% energy on average compared to typical fixed diameter pumps without any changes in the installation.

There is not one best choice for every application but there are several solutions to capitalise on the economic and ecologic potential.