

# Extended motor products

## DESCRIPTION

Electric induction motors are used to drive pumps, fans, compressors and material handling and processing equipment in commercial, industrial and institutional facilities. While the motor and associated controls are the primary electricity users, inefficiencies in the other parts of the system (pumps, fans, valves, pipes, ducts and end-uses) also affect the amount of mechanical power required. Looking at the whole system, not just the motor, is crucial to optimizing energy efficiency.

Several industrial trade groups are collaborating to develop specifications and labeling for motor-driven subsystems or packages (e.g. a drive-motor-pump combination) to capture some of the system effects on energy. The Hydraulic Institute, as part of this initiative, has developed an energy rating label to clearly show the savings from pump system upgrades and changes. This initiative is important because it provides a means for documenting the savings from system optimization, making them eligible for inclusion in prescriptive or semi prescriptive energy efficiency programs. Historically, incentives have been available for upgrading a motor, but whole system optimization has been relegated to custom programs that generally are cost-effective for larger projects only.

## DEMONSTRATING THE TECHNOLOGY

Commercial, industrial or institutional facilities with motor-driven systems are suitable sites for testing and demonstrating a systems approach to upgrading motors. Participants could be recruited through custom incentive programs and account managers serving large customers.

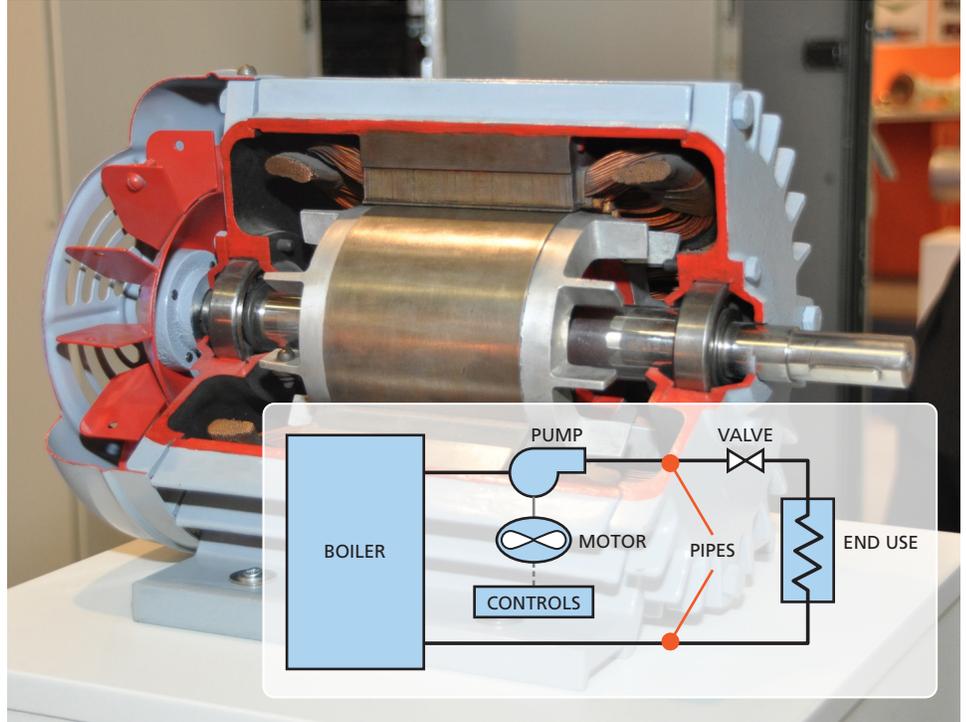


Photo of motor cutaway: © S.J. de Waard

CRITERIA	VALUE
Electricity savings	0.46 kWh/ft <sup>2</sup>
Cost savings	\$0.04/ft <sup>2</sup>
Measure life	15 years
2017 simple payback	3 years
Carbon emissions avoided	3.2E-04 MT equivalent CO <sub>2</sub>
How it saves energy	Saves energy by optimizing the efficiency of the whole system rather than just one device.
Non-energy benefits	Ease of procurement, reduced operator time monitoring the system, longer product life
Barriers to adoption	Specifications need to be disseminated; some sensor/control elements add significant cost

## FOR MORE INFORMATION

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