

# A COMMITMENT TO CONTINUOUS IMPROVEMENT LEADS BENTON FOUNDRY TO CUT ENERGY COSTS AND EMISSIONS



New dust collectors installed at the Benton Foundry are powered by Baldor•Reliance Super-E motors. The return air moves through HEPA filters and heats the facility in the winter months and directs the warm air outside during the summer. The project has resulted in a six-figure reduction in heating costs, while markedly improving comfort in the foundry.

Nestled in the Pennsylvania woods between a state park and a fish hatchery, Benton Foundry and its owners has long been committed to reducing its impact on the environment. Recognized as a leader in its industry, its foundry has no steam plume, no smokestack and no discharge of process water. Now, after completing a five-year plan of work, it can also boast about reducing dust emissions while dramatically cutting energy costs.

For nearly 100 years, spanning three generations, the family-owned foundry has produced gray iron and ductile iron parts. Today, with a diversified base, the foundry serves more than 400 customers with 8,000 active part numbers. However, creating these products consumes a great deal of electricity, and with energy costs rising, foundry owners began an aggressive plan to cut usage.

They first targeted the foundry's four furnaces, the largest consumer of electricity in the facility. However, after implementing an energy management strategy and installing specialized software to help prioritize power demand, their attention turned to motors.

The manufacturing vice president for Benton Foundry, Jeff Hall, says that because electric motors were consuming a sizable portion of electricity, they began a search for the most energy efficient motor they could find. At this same time, they were also starting their five-year program of installing dust collectors and wanted to standardize one motor for their entire facility. The motor they chose to specify: the Baldor•Reliance® Super-E®.

“This motor is not the lowest price product available, but it offers so many additional benefits that make it worth the premium,” says Hall. “The Baldor•Reliance Super-E offers the highest efficiency ratings versus others in the marketplace. So when you take a look at the cents per kilowatt and the hours that these motors run, with the improved efficiencies of the Baldor product, the payback can be in as little as 18 months. When you consider how many years these motors will last, choosing the Baldor•Reliance Super-E makes the most sense.”

The first dust collector was installed in 2007. The system, powered by a 500 HP Baldor•Reliance Super-E, moves air at a rate of 120,000 cfm. The return air moves through HEPA filters and heats the facility in the winter months and directs the warm air outside during the summer. This project has resulted in a six-figure reduction in heating costs, while markedly improving comfort in the foundry.

A second dust collector, powered by a 200 HP Baldor•Reliance Super-E motor, came on-line in 2009. This unit is for furnaces, pre-heaters and sand system. An existing third collector was designated for the grinding and cleaning operations. This unit was retrofitted with a cyclone, powered by a 200 HP Baldor•Reliance Super-E, designed to remove larger particulate and metallic pieces.

Benton Foundry standardized on Baldor•Reliance Super-E motors after searching for the most energy efficient product they could find. Foundry officials say after looking at a variety of motors from a number of manufacturers, they chose the Super-E because of the merits of the motor and because Baldor brought more to the table.



# THE PREMIUM EFFICIENT MOTOR THAT PAYS FOR ITSELF

To understand what a motor really costs, you need to compare the initial purchase price with the cost of the electricity it used over its working lifetime. In these economically tough times, it may be easy to focus on how much you pay for the motor. But for most motors, this initial cost represents only 2% of its lifetime costs, while electricity accounts for more than 97%. The original purchase price is almost insignificant compared to what it will cost to power the motor during its useful life.

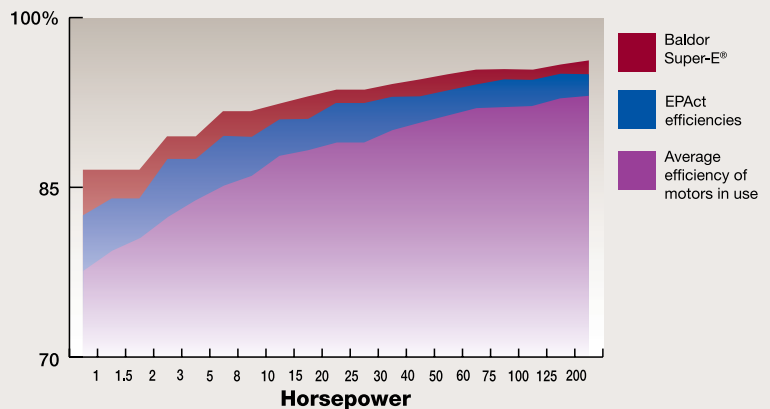
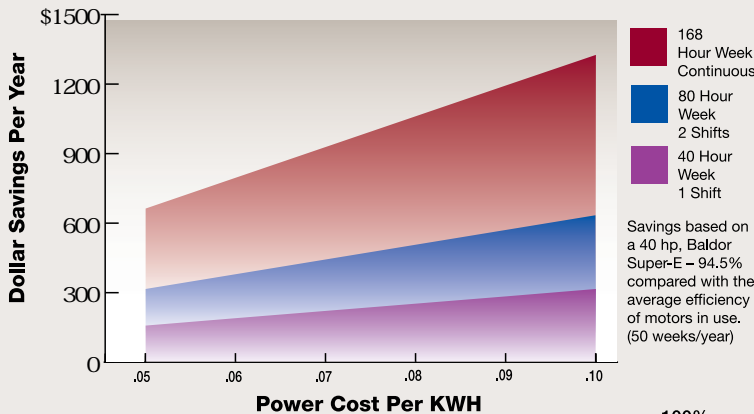
Baldor's line of Super-E® motors offers customers the highest level of overall efficiencies available from any motor manufacturer, meeting or exceeding NEMA Premium® efficiency. Not only are these motors efficient, they run cooler and longer with greater reliability than any other industrial motor.

When you consider that a typical 50 HP motor costs over \$25,000 to operate continuously in a year, it's easy to see how just a few percentage points of higher efficiency can quickly reduce electricity costs, especially if the motor is operating continuously every day.

Minimum Efficiency Performance Standards (MEPS) for electric motors are becoming commonplace throughout the world. The first of these was the Energy Policy Act of 1992 (EPAct) that mandated efficiency levels for 1-200 HP general purpose motors for sale in the U.S. after October 1997. The Energy Independence and Security Act of 2007 (EISA) builds upon EPAct and raises the efficiency level for these motors to NEMA Premium efficiency and adds other configurations and 201-500 HP ratings. (See *EISA details on page 24.*)

As countries and regions across the world establish minimum efficiency levels for motors, more companies are turning to the Baldor•Reliance® Super-E®, especially OEMs who ship products overseas. Super-E motors meet or exceed the efficiency levels defined by NRC in Canada, and CEMEP EFF1 in Europe, and the new IE3 level of IEC 60034-30.

With a wide selection of premium efficient motors, available from stock, manufactured and sold by a company committed to building products for industries worldwide, it's no wonder the Baldor•Reliance brand is recognized as the leader in energy efficient industrial motors.



*“The Baldor-Reliance Super-E offers the highest efficiency ratings versus others in the marketplace. So when you take a look at the cents per kilowatt and the hours that these motors run, with the improved efficiencies of the Baldor product, the payback can be in as little as 18 months.”*

Jeff Hall, manufacturing vice president, Benton Foundry

The emissions from this collector were reduced by 50%.

Today more than 100 Super-E motors can be found throughout the Benton Foundry. Hall says they plan to add others as older motors fail.

While Benton Foundry looked at a variety of motors from a number of manufacturers, Hall says they chose the Super-E because of the merits of the motor and because Baldor brought more to the table. “We looked beyond the purchase price and focused on the return on our investment,” says Hall. “One has only to look at the total operating lifetime costs of the motor to realize that the cheaper motor can be the more expensive motor. Quality and performance are not a given. This enlightened view led us to the Baldor-Reliance Super-E.”



An existing dust collector was retrofitted with a cyclone, powered by a 200 HP Baldor-Reliance Super-E. This unit removes larger particulate and metallic pieces, reducing emissions by 50%.



By looking at the cents per kilowatt and hours that motors run in the foundry, officials say the improved efficiencies of the Baldor-Reliance Super-E will deliver a payback in as little as 18 months. Today, more than 100 Baldor-Reliance Super-E motors are operating at the foundry.