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Inefficient motor-driven systems lead to the loss of power. That's the equivalent of losing money. Lots of money. Taking a little time to do the math can help your operations change this equation.

Tens of millions of electric motor-driven systems in operation at manufacturing facilities around the United States are not running at optimum efficiency. Why does that matter? These motor-driven systems consume 70% of all electricity used in the plants, and the energy costs companies billions of dollars.

Today, approximately one-third of the electric motors in the industrial and commercial sectors use belt drives—*most of them standard V-belts.* While they are popular for their low acquisition costs, wide availability and quiet performance, V-belts simply are not as energy-efficient as synchronous belt drives.

Efficiency of any power transmission system is a measure of the power loss associated with the motor, the bearings and the belt drive. It is defined by these formulas:

Efficiency = HP out /HP in

Efficiency = (TORQUE out x RPM out)/(TORQUE in x RPM in)

Gates Energy Savings Calculator.

No time for math? Let Gates help you estimate how much money your operations can save with energy-efficient synchronous drives.

A faster way to calculate the necessary data points, as well as total-cost-of-ownership (TCO) savings relative to your drive systems, is to use the Gates Energy Savings Calculator, available at www.Gates.com/Calc. This free, easy-to-use tool factors in energy efficiency, maintenance costs, downtime and component costs to show a complete picture of potential savings.

For more info, enter 03 at www.MT-freeinfo.com

$$KWh = \frac{(\text{Motor HP})(\text{Hrs/Yr})(.746)(.05)}{\text{Motor Efficiency}}$$

[illegible] .746 is the conversion factor from HP to KW, and .05 is the estimated 1.5% is

$$\text{Annual Energy Cost (\$)} = \frac{(\text{Motor HP})(\text{Hrs/Yr})(.746)(\text{Cost per KWh})}{\text{Motor Efficiency}}$$

$$\text{Annual Energy Savings (\$)} = (\text{Energy Cost})(\text{Efficiency Increase})$$

$$\text{Payback Period} = \frac{\text{New Drive Cost}}{\text{Annual Energy Savings}}$$

[redacted]

Avoiding Belt Failure

Whether you're using V-belts or synchronous drives, Gates engineers are ready to help diagnose failure issues and provide assistance on replacing certain components or complete drive systems. Check out a wealth of belt-failure resources, including information on Gates services at http://gatesprograms.com/ptsavings/beltfailure and http://www.gates.com/analysis.

For more info, enter 04 at www.MT-freeinfo.com

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