

Saving Energy in Vending Machines



BENEFITS

- Save 21 percent of vending machine's total energy consumption
- Payback period as short as 6 months

APPLICATIONS

- Refrigerated vending machines

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 Wellington®

Saving Generation for the Next Generation



Saving Energy in Vending Machines

An estimated 7.5 million refrigerated vending machines are currently in use in the United States, Europe and Japan alone¹, consuming around 24 GWh of energy each year².

Because of their large numbers, vending machines have been included in new legislation targeting their vast energy saving potential.

Vending machines have also been included in most voluntary labelling programs like the American ENERGY STAR[®].

Energy savings

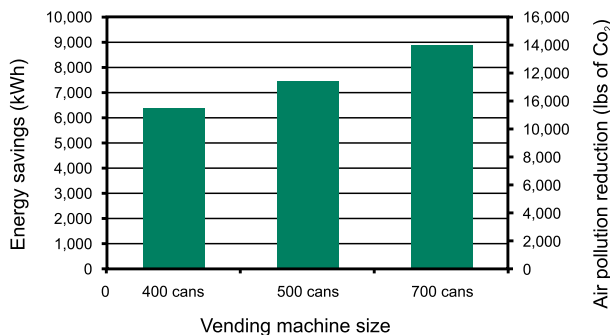
Refrigerated vending machines typically have one shaded pole motor driving the condenser fan, and one or sometimes two shaded pole motors driving the evaporator fan/fans.

The efficiency performance of these motors is in the order of 18%. A hard-to-believe 82% of the energy used by the motor is released as waste heat inside the vending machine. Still more energy has to be consumed to cool the machine to the correct temperature again.

ECR motors instead have efficiency up to 65% to dramatically reduce motor direct energy consumption, and yield additional energy savings by producing minimal waste heat.

ECR motors reduce the load on the compressor and thus its operating time, allowing further energy savings.

Energy savings and air pollution reduction in vending machines with ECR motors³



In terms of environmental impact, this means that each 500 cans vending machine using ECR motors saves over 11,000 lbs of carbon emissions during its life, the equivalent of taking one car off the road for a year.

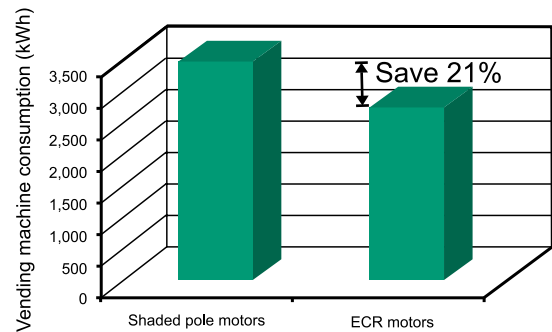
In the US alone, where around 240,000 vending machines are sold each year, this means potentially saving billions of lbs of carbon emissions, or taking the equivalent of hundreds of thousands of cars off the road for one year.

Cost savings

ECR motors reduce the overall energy consumption of a vending machine by 21 percent, which means a 21 percent reduction in operating costs.

This, together with the maintenance savings and longer life of ECR motors when compared to shaded pole, and their very short payback periods, make Wellington's ECR a very cost effective solution for new vending machines and retrofit alike.

Impact of replacement of shaded pole motors with ECR on vending machine energy consumption⁴



Wellington's ECR motors and fans deliver premium energy savings for each additional \$ invested when compared to other energy saving technologies.

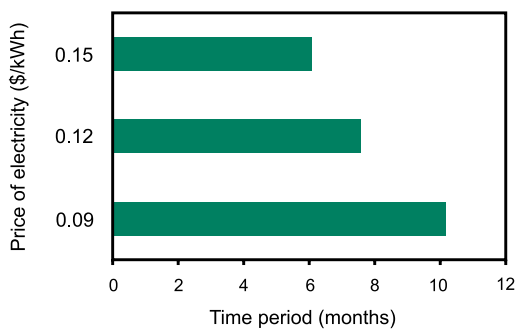
¹ European Commission Directorate General for Energy and Transport (DG TREN), www.energystar.gov, www.jvma.or.jp
² Estimate based on 3,500 kWh/yr (United States) and 3,000 kWh/yr (Europe and Japan) average vending machines energy consumption.
³ Vending machine's life is estimated at 10 years. Carbon dioxide emission factor and equivalence from www.energystar.gov
⁴ Annual average values for a 500 cans vending machine. Energy consumption and savings values may vary depending on factors including vending machine's location, operating conditions and motor running time (%).

Payback period

ECR motors and fans have very short payback periods due to:

- high direct motor energy savings
- waste heat savings
- reduced compressor operating time
- low maintenance and service cost

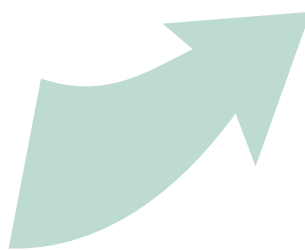
ECR motors payback period⁵



With short payback periods and high energy savings the ECR series can help you meet ENERGY STAR Tier II requirements while lowering costs.



8 inches axial fan (shaded pole motor)



Drop in replacement



8 inches ECR axial fan

Product features

ECR motors are electronically commutated (ECM), brushless DC motors. Top quality electronics and design make ECR motors extremely efficient, quiet and reliable.

Software controlled, timed reversing is available for vending machines with self-cleaning condensers: no relays are needed, saving more cost.

Extremely low levels of noise and vibration are achieved with our unique low torque ripple motor design.

Long design life and reliability are the result of Wellington's moisture proof patented design, and allow maintenance and service cost savings.

Drop in replacement of shaded pole motors

Our motors use the same mounting systems as shaded pole motors and are provided with a plug in connection for easy, fast replacement. They also fit the same fan blades and accessories as traditional shaded pole motors.

ECR fans are available in all standard sizes and pitches.

ECR standard features make it easy to replace traditional shaded pole motors in all vending machines, with no need for costly adjustments.

⁵ For a 500 cans vending machine running two ECR motors. Payback period calculation includes reduced compressor operation savings.

Wellington has made a strong commitment to providing standard and custom design solutions that will lower your financial costs while preserving key natural resources.

For information about our full line of products and our “Total Integration” custom design service, call our **toll free number 888 786 4153** or visit us on our website at **www.wdttl.com**.

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