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ABB drive saves £2,000 a year energy costs for plastic moulder

A plastic components manufacturer is saving nearly £2,000 a year in energy costs on one of its injection moulding machines through retrofitting an ABB variable-speed drive (VSD).

Newtown Plastics fitted the VSD following a joint energy appraisal report by ABB and City Electrical Factors (CEF). Wayne Trematick, Energy Consultant, comments “the energy appraisal showed that the company could save £1,963 on energy costs, with an 18 months payback. This is a very compelling reason for installing drives.”

The company, based in Newtown, Mid Wales, makes a wide variety of moulded plastic components, both its own ranges and bespoke designs. These range from display cases to caps and closures and a wide variety of components for use in the pharmaceutical, retail, construction, automotive, aerospace, electrical and other industries.

Following ABB’s energy appraisal, a machine with an 18.5 kW motor was identified as a prime candidate for retrofitting a VSD.

Simon Church, director of Newtown Plastics, explains: “We have 14 machines in total but this one was identified as suitable because it had such a long cycle time. It operates for 40 weeks a year making a perfume display case and requires a long cooling time. During this time, the hydraulic motor is not doing any work but is still running at top speed, so this was an obvious choice for an energy saving project.

“There are several other bigger machines but these all operate with a faster cycle time, so are not so suitable for VSD control.”

The process – which has a 50 percent load and a 50 percent idle cycle - was logged for seven days to confirm cycle times and on and off load values. .

Speed control on this application is not controlled via a pressure transducer, but instead relies on the drive’s internal load measurements to decide when the pump is doing useful work or recycling back to the tank.

When the pump is recirculating fluid back to the tank, while the plastic part is being cooled, the speed of the motor is dropped to 50 percent. Off load power has been reduced from 7 kW to 3.7 kW, giving an annual saving of £1,963 a year.

Says Church: “I have been very impressed with the savings from the project. We have a compressor with a VSD and our new machines come equipped with servo drives so we know about the technology of VSDs and can’t fault them.”

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Caption: Newtown Plastics is saving nearly £2,000 a year in energy costs on one of its injection moulding machines through retrofitting an ABB variable-speed drive.

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