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Trunki manufacturer rides-on through energy savings with ABB drive

A manufacturer of plastic moulded products – including the Trunki brand of ride-on suitcases – has cut energy costs by retrofitting an ABB drive to a moulding machine.

A manufacturer of ride-on suitcases has cut its energy costs by £7,800 per year by retrofitting an ABB variable speed drive (VSD) to one of its moulding machines.

Magma Moulding produces the Trunki ride-on suitcase, as well as a number of other plastic moulded products for customers in the automotive, safety, consumer goods and military sectors.

Up to 23,000 Trunki suitcases are produced at the company's Plymouth facility each month, 1,000 per production day. The two halves of the cases are made on two moulding machines. One of these machines is 15 years old while the other is only three years old.

Tony Newbold, Technical Manager for Magma Moulding, says: "These machines were ideal to test out the effect of a VSD as they are identical machines side by side making identical parts. The only difference is that the newer machine already has a speed-controlled hydraulic pump and we wanted to see if we could produce similar savings by retrofitting an electric variable speed drive to the older machine."

The moulding machine has a 65-second cycle time. Around 30 percent of the cycle time is spent off load, during which the hydraulic system is not in operation but the pump motor is still running at maximum speed. Magma Moulding wanted to save the energy that was wasted here while avoiding affecting the cycle time.

ABB's authorised value provider APDS conducted a week-long trial with an ABB drive to see how much energy could be saved. After consultation with Magma, it was agreed that installing a 55kW ABB general machinery drive would save £7,800 a year in energy costs, with a payback of just seven months.

The VSD measures the torque in the motor to decide if the machine is on or off load and reduces the speed of the motor when off load.

The moulding machine previously drew 40 kW, but since fitting the drive, this has reduced to 23.5 kW. As it runs for 4,500 hours per year, the drive is saving 74,250 kW/hrs annually.

Says Newbold: "We could gain even more electrical savings, but this would be at the expense of lengthening the cycle time."

Magma Moulding intends to upgrade other machines with ABB drives from APDS.

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Caption: Magma Moulding has cut its energy costs by almost £8,000 per year by retrofitting an ABB drive to a moulding machine.

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