TOOLBOX

Can VSDs improve the efficiency of your motors?

Did you know?

- Motors account for most of the electricity we consume – up £1,000,000 a year in our largest quarries.
- You can reduce fan speed by 20% and save 50% of the energy the motor uses. (Reducing the speed of a conveyor, crusher or positive displacement pump by 20% only saves 15%!)
- You can reduce fan speed with a variable speed drive (VSD) and make a motor live longer by reducing noise and vibration, as well as energy consumption. (VSDs work on exhaust air, combustion air, dust extraction and aggregate dryers.)
- Many motors are too big for the job they do and should be replaced with smaller motors to save energy.

Take action to save energy...

1 **List all the fans on site and divide them into VSD fitted fans and non-VSD fitted fans.**

2 **For VSD fitted fans, ask:**

- Do we use the control to reduce fan speed?
- Have we removed or fully opened the old volume control damper that previously controlled the flow rate?

3 **For non-VSD fitted fans, first consider cheaper alternatives to VSD and ask:**

- Can we switch off the fan more frequently? (Remember a soft start is useful, but does not control motor speed in normal operation.)
- Should we replace the motor with a smaller, more efficient one?
- If a constant slower speed is required, can we change the pulley ratio on the belt transmission?
- Is there an efficient in-line damper and are we using it?
- And finally... would we be better off fitting this fan with a VSD?

Take action and here's what you could save

Motor size kW	Typical saving	Motor size kW	Typical saving
10	£625	30	£1,875
15	£938	50	£3,125
20	£1,250	100	£6,250

Add your actions to your site's energy saving plan and start counting the savings.