

# Getting it **wrong**

*When two companies issue statements in as many weeks, suggesting that engineers and managers are missing the point on appropriate plant choices, it's time to take notice. Brian Tinham reports*

**T**wo large and well respected manufacturers went on record last month, advising that engineers and their procurement teams are missing some important tricks. They addressed entirely different technologies – controls giant ABB spoke out on variable speed drives (VSDs) and motors, while rotary vane plant manufacturer Mattei chose compressors – but both outbursts suggest that a little knowledge is, if not a dangerous, certainly a worrying, thing.

ABB first, and its contention is that British factories are looking in the wrong place for energy savings – by focusing on lighting, rather than the much bigger deal of power-hungry electric motors. Citing this year's energy report by our sister publication Works Management, John Guthrie, energy manager for ABB's drives and controls business, points to the finding that 70% of manufacturers intend to make savings by switching off lights, with 67% buying more energy-efficient lighting.

"Reducing lighting costs is always worthwhile, but the real savings are achieved by reducing energy within manufacturing processes," insists Guthrie. "Most companies can save thousands of pounds' worth of electricity, and some can save hundreds of thousands, by upgrading industrial processes, often at comparatively low cost."

He's referring to pumps, fans and compressors, driven by older electric motors, which, according to WM's survey, account for some 65% of all electricity used throughout industry. Guthrie draws our attention to the tiny minority – an estimated 10% – of these plant items that currently have an efficient method of speed control that matches motor speed with process demand.

Considering implementing VSDs, but also efficient motors – soon to be further mandated under phase two of the Eco Design Directive 2005/32/EC, which will cover virtually all 7.5–375kW units (Plant Engineer, May/June 2013, page 28) – would be the counsel of the wise, if you're serious about energy-saving. As Guthrie says: "The potential is staggering. Realising these savings could also help to substantially reduce CO<sub>2</sub> emissions."

## Compressor concerns

Turning to Mattei, its concern is that those purchasing air compressors may be wasting money, both in terms of lifetime energy consumption and purchase price. How? Mostly, it's due to over-egging the specification by including the terms 'oil-free' and/or 'Class 0' on tender documents.

Mattei general manager Andy Jones explains that the ISO8573-1:2010 standard, which details air quality, contaminant quantities etc, is widely misunderstood. "The Class 1 standard for oil, which states that in each cubic

metre of compressed air there should be no more than 0.01mg of oil, is suitable for critical applications, such as breathing, medical and food. However, there is also a more stringent Class 0. But, despite its name, this does not equal zero contamination."

In fact, when used in isolation, the term Class 0 is meaningless. And the phrase 'oil-free' relates merely to a type of compressor, rather than a class of air. "It's vital for specifiers to consider whether Class 1 or Class 0 air is really required – and whether it is needed for the entire system or just part of it," advises Jones. "Because the more stringent the purity, the more costly it is to achieve, especially if the oil-free compressor route is taken," he explains.

"Oil-free compressors are more expensive than oil-lubricated equivalents, in terms of capital outlay and maintenance, as well as the energy they use. In fact, we'd suggest oil-lubricated compressors are 10–15% more energy efficient than oil-free machines," he continues.

"Also, since oil-free compressors don't use any lubricating oil in the compression chamber, many end users assume they will provide oil-free, Class 0 air. However, this is not the case either. For an oil-free compressor to ensure Class 1 or Class 0 purity, downstream filtration will still be required," adds Jones.

And he insists that users need to understand that, providing there is an adequate level of filtration, an oil-lubricated compressor can deliver high standards of air purity for most applications. "Modern oil-removing devices can reach exceptional levels of performance... In fact, they are capable of making compressed air 400 times cleaner than the air we breathe," he states. ■



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