

Distillery improves safety with motor upgrade



The Macallan has fitted 39 ATEX approved motors from ABB at its Speyside distillery

Certified motors ensure ATEX compliance

The Macallan, makers of Scotland's premier single malt whisky, has fitted 39 ATEX certified motors from ABB at its Easter Elchies distillery at Craigellachie on Speyside. This follows a risk assessment and rezoning exercise to meet the new hazardous area regulations, which came into force on July 1st, 2003. All of the motors comply with the requirements for Zone 1, improving safety in areas made potentially hazardous by alcohol levels from the distilling process.

The motors, ranging in size from 0.55 to 5.5 kW, are used in a number of different applications such as pumping cooling water, charging and discharging stills,

agitating tanks and transferring distillate and spirit. They were supplied by ABB's Drives Alliance and Motor Service partner EDC (Scotland), Ayrshire.

The rezoning of the distillery provided The Macallan with an opportunity to replace all of its existing motors, improving safety as well as the energy efficiency of the process. Comments John Sutherland, The Macallan's company engineer: "Our previous motors dated from the 1970s. They were inefficient, with many of them having been rewound, and could not comply with the latest regulations. Apart from ABB's good reputation in industry, we had attended one of their seminars on the ATEX regulations and the package on offer was really what we needed."



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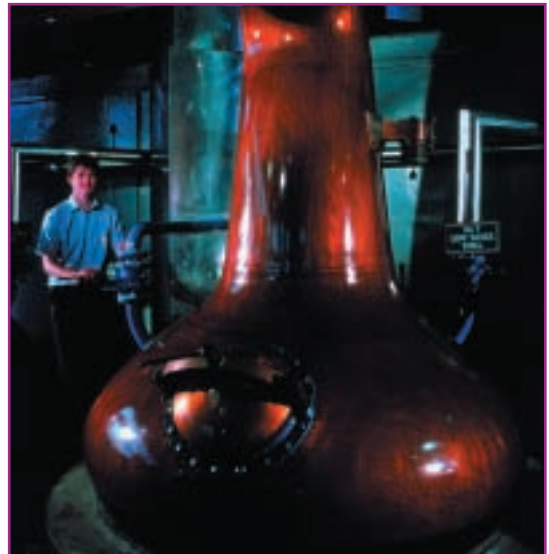
Case Notes

In addition to the £35,500 spent on motors, The Macallan also invested a further £5,000 to fit variable speed drives from ABB on some applications, for which VSD certified motors for hazardous areas were selected.

“Drives have proved very useful in some areas since they can be programmed to minimise hydraulic shock when charging the stills to a high degree of accuracy and allows us to maximise the properties of the heat exchangers,” Sutherland says.

ABB has a wide range of high efficiency Ex motors, suitable for all ATEX applications, with efficiency levels equivalent to the highest European standard, EFF1.

As well as reducing energy consumption, low losses in the motor also gives longer life and improved reliability as less power is converted to heat. The temperature in the winding of ABB’s M3000 range of motors has been reduced by 3-5°C, which is equivalent to an increased lifetime of 30-50%.



Lower temperature also increases the life of the bearings and the bearing grease. A new design to the end shield further improves cooling of the bearing assembly, ensuring the grease maintains the optimum temperature for lubricating performance.

Solved problem

- The existing motors were inefficient and did not comply with the ATEX regulations

Solution

- Following risk assessment and re-zoning, 39 ATEX certified motors were installed
- Motors certified for use with frequency converters help provide variable speed in hazardous areas

Benefits

- Compliance with the latest regulations
- Improved energy efficiency
- Variable speed drives reduce hydraulic shock on stills



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