

SynRM package meets Ferrari fans

2014-03-31 - What brings together three leading technology companies like Höganäs, ABB and iFans/Ferrari? Their determination to invest in energy savings. An investment that will pay for itself in the long-term, both economically and ecologically.

Sweden's steel industry is important for Swedish exports, it provides employment to a lot of people and contributes much more to Swedish society, including through sustainable development. One of those steel companies is Höganäs AB, the world's leading manufacturer of iron and non-ferrous metal powders.

"Here at Höganäs we produce iron powder in conveyor belt furnaces. Our customers then compact the iron powder, using it in applications such as automotive components and electric motors. The powder is also used in the manufacturing of welding electrodes, inductors and additives for foodstuffs," says **Martin Tagesson**, project manager at Höganäs Sweden AB.

More pressure needed

The conveyor belt furnaces are fired using natural gas. Fans supply combustion air to these furnaces. However, the old fans used were belt driven and operated at a fixed speed. In January 2013 Höganäs had to decide whether to equip them with frequency converters or to invest in new fans. Over the summer Höganäs evaluated quotes and then sent an order to iFans and ABB.

The choice was three Ferrari FE901 N4, 30 kW high pressure fans, to be used as supply air fans for the furnaces at Höganäs's Distaloyverk uni

"We needed to switch to frequency control in order to obtain a more even pressure. When we decided to buy frequency converters, we also chose to buy new fans," says Martin Tagesson.

"We had bought fans from iFans before, for another process, and they were among the most efficient that we could find. At the same time ABB has developed a new motor, producing values we thought it would be interesting to test," says Martin Tagesson.

Pilot package from ABB



The motors maintained very low temperatures during operation. This means that the maintenance of these

motors will be low compared with that of standard motors. Here the temperature is being measured. After about 45 minutes' operation this is just 23.8 degrees.

ABB provided the drives and motors: three synchronous reluctance (SynRM) motors paired with ACS880 variable speed drives.

"Ferrari in Italy manufactured the fans and tested them together with our motors and drives. These are just standard products from ABB, but this is a pilot for selling the ACS880 packaged together with synchronous motors," says **Johan Leveau**, who is a sales engineer with ABB.

Ferrari (Fratelli Ferrari Ventilatori Industriali S.p.A) is one of Europe's largest manufacturers of industrial fans, and has been in the industry for over 50 years. Their factory is in Arzignano in northern Italy. In Sweden Ferrari is represented by iFans (Industrial Fan Technology Sweden AB).

"We buy quite a lot of motors from ABB. When ABB presented its new concept we told our customer, Höganäs AB, about it."

Lennart Andersson is the salesperson for iFans industrial fans in Sweden who has a long collaboration with ABB.

"They are tremendously aware of the importance of using highly efficient products so as to keep down energy costs. They are very environmentally aware when it comes to their industrial processes, a company at the forefront when it comes to energy optimization. For this reason we chose a solution using energy efficient drives and motors from ABB and fans from Ferrari," says Lennart Andersson, and Martin Tagesson backs this up:

Energy saving and other benefits

"Höganäs has chosen fans, motors and a control system to allow us to be as energy efficient as possible. And we can see a clear improvement. The energy saving using new fans, motors and a new control system is approximately 50 percent, which corresponds to 170,000 kWh per year. Operation will be more stable, the noise level has been reduced and maintenance will be easier."

ABB's Johan Leveau thinks that other customers will be able to benefit from the same solution. "The combination of manufacturer, OEM and end customer is a great advantage for all parties. Today old fans, motors and control systems are stealing huge amounts of energy from industry. The fact that fan manufacturers and end users are opening up to new technology and efficient energy use benefits everybody. There is a great deal of energy savings to be made from this in paper mills, mines, steelworks and other 24/7 industries that use a lot of energy. Saving energy benefits both our customers' wallets and the environment, even if the investment can be more expensive initially. But return on investment is fast in the process industries."



Checking the vibration of the unit. In this case only 1.5mm/s rms; which is a low vibration level.



Representatives of ABB Sweden and ABB Italy, iFans Sweden and Ferrari Fan Italy and Höganäs gather in Italy prior to delivery. Operational testing, with temperature and vibration measurement, was carried out here.



Background:

F.lli Ferrari Ventilatori Industriali S.p.A. was founded in 1960 in Arzignano, Vicenza by the

brothers Antonio and Mario Ferrari. Through investment, research and a systematic production chain the company has evolved into a technological trailblazer. The global reputation of the Ferrari brand is the result of the determined attitude of the company from the very beginning of its industrial adventure.

www.ferrariventilatori.eu

iFans (Industrial Fan Technology Sweden AB) is the Swedish representative of Ferrari industrial fans. The company, with its headquarters in Bjuv, works with paper and pulp mills; steelworks; the mining industry; manufacturers of district heating and solid fuel boilers; energy suppliers; industrial filter manufacturers; and contractors and installation companies.

www.ifans.se

Höganäs AB is the world's leading manufacturer of iron and non-ferrous metal powders. The company sees infinite possibilities for the improvement of the existing areas of application for metallic powders, and for the development of new ones. Through its familiarity with its customers' applications, Höganäs is developing automotive components for the future, products for surface coating and brazing, as well as systems for sustainable energy production and electric motors. The company is owned by H Intressenter, a company that is jointly owned by Lindéngruppen and Foundation Asset Management.

www.hoganas.com

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Photographs: ABB and iFans