

COULD YOU SAVE MONEY WITH A VARIABLE SPEED DRIVE?

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With energy costs on the rise and government plans to reduce carbon emissions, it's not surprising that businesses are looking for ways to cut down their energy consumption. Saving energy is not only better for the environment, it also saves you money, so it's a bit of a no-brainer. But making changes to cut down energy use doesn't always have to involve big investment. There are some simple and cost-effective changes that can make a big difference. **A great example of this is introducing variable speed drives on your production lines.**

WHAT ARE VARIABLE SPEED DRIVES?

Variable speed drives (VSDs), also known as variable frequency drives, frequency converters or adjustable speed drives, are extremely effective energy-saving tools.

Not all machinery needs to run at a fixed speed. Motors, fans and pumps, for example, run at different speeds for different applications. This is where VSDs come in. They convert the incoming electrical supply of fixed frequency and voltage into a variable frequency and voltage. This allows you to match the speed and torque of your motor, fan or pump to the requirement.

HOW DO VSDS REDUCE ENERGY CONSUMPTION?

Taking a vacuum system as an example, we need to look at the load, flow, pressure and power.

Load – the quantity of air used in the process.
Flow – the flow rate of gas passing through the inlet of the vacuum pump.
Pressure – the vacuum level.
Power – the electrical energy required by the vacuum equipment.

Fixed pumps will usually be selected to meet the needs of your processes at full load, and, as the name suggests, they run at a fixed speed. When the demand for a fixed speed machine drops, the pressure does too. But the energy consumption only drops to around 70% of its maximum power.

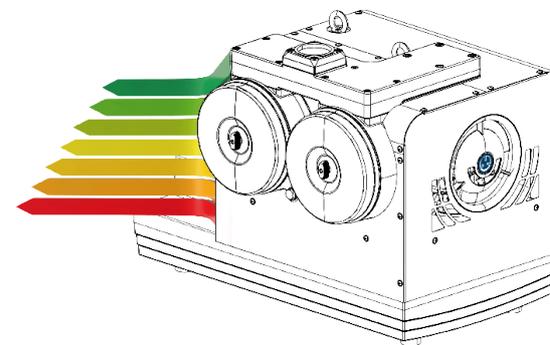
A fixed pump is fine if you have a consistently fixed load. But very few processes are fixed – the load will fluctuate throughout the day. A VSD manages the load fluctuation. The pressure remains constant, but the power oscillates between 0% and 100%, depending on demand. Energy consumption is reduced, and much less energy is wasted when compared to a fixed speed pump.

In fact, using a VSD to slow down a fan or pump motor from 100% to 80% can save as much as 50% on energy use.

And although most VSDs are installed with the primary objective of reducing energy consumption, there are several other benefits too:

- **More precise control of flow, temperature, speed and pressure**
- **Prolonged equipment life**
- **Greater control at high speed**
- **Can be linked with other process control systems**
- **Controlled automatically**

If you operate a centralised vacuum system, the savings of using VSDs over fixed speed pumps will be even more significant.



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All Becker products are designed to be as energy efficient as possible. And many of our vacuum systems are installed with our VARIAIR technology.

The frequency inverter integrated into a VARIAIR unit significantly enhances the performance of each pump. It matches pump delivery exactly to your requirements, optimising energy consumption and ensuring constant vacuum or pressure even where demand is subject to severe fluctuation.

No unnecessary blast or suction air is generated, so noise is kept to a minimum. Dirt from the surrounding environment is kept out of the pumps via inlet filtration. "Gentle" pump start-up reduces strain on mechanical components, extending the lifespan of your equipment, meaning even more cost savings. If you'd like to discuss how to make your vacuum systems more energy-efficient, we'd be more than happy to help. Contact our friendly team to find out more about vacuum pumps and centralised vacuum systems.

WOULD YOU LIKE TO FIND OUT WHAT BECKER COULD DO FOR YOUR OPERATION?

Then contact your local Becker sales representative or visit

www.becker-international.com

