

## PNEUMATICS

There is always potential for further efficiency gains through the optimised use of energy, especially in large production facilities, says Festo. *Suzanne Gill* reports from an Audi plant in Hungary

# Pneumatics

## – ensuring sustainability in plant automation

**T**he Audi Hungaria production facility, in Hungary develops and produces engines for Audi AG and other brands within the Volkswagen Group, as well as assembling the Audi TT Coupé and Roadster and the A3 Cabriolet.

The success of this plant since its creation in 1993 has resulted in a recent plant expansion, due for completion in 2013, which will see the plant becoming a complete vehicle plant, including a press shop, body shop and paint shop.

Demand for compressed air preparation components, for the current and future Audi plant in Hungary has been just one factor which prompted the opening of a third section of the Global Production Centre Air Supply in Budapest, by Festo, who is the main automation supplier for this, and other, Audi plants. A Festo spokesperson said that demand for air preparation components, such as the Festo MS series, is now increasing faster than the market average on a global scale.

The Győr plant, employs Festo equipment extensively. Indeed, the majority of Audi plants are equipped with automation technology supplied by the company and a product catalogue "Audi/BW Powertrain Production" has been published, based on the Audi approvals list. This catalogue is designed for use by Audi's equipment construction departments as well as by machine and equipment suppliers, allowing them to select appropriate automation products and integrate them into machines and equipment for engine and vehicle production.

### Supporting plant expansion

The expansion of Festo's production



*The Audi Hungaria production facility produces engines for Audi AG and other brands within the Volkswagen Group and assembles the Audi TT Coupé and Roadster and A3 Cabriolet*

facilities in Budapest will allow it to better support Audi Hungaria at all stages of the development of its plant expansion. In most large production facilities Festo believes there will be potential for further efficiency gains through the use of the latest technology, especially in the areas of energy saving and safety.

Various installation concepts for valve terminals can be adapted to different control concepts. For example, decentrally installed valve terminals reduce the tubing length required and therefore also the pressure drop to the drive. Sensors can report energy losses, and flow sensors are able to visualise air consumption and sound the alarm if leaks occur. Festo's component range for compressed air preparation already incorporates sensing capabilities to make these efficiencies a reality.

Key elements of Festo's approach to sustainability include the proper dimensioning of automation components, attention to efficiency in the product specification process, as well as the need for employee training in energy efficiency principles and practices. For systems that include both pneumatic and electric drives, energy efficiency

always needs to be considered from a holistic viewpoint, it says. A moving mass will require additional energy and this needs to be considered at the component selection stage. Here, Festo offers its CACOS and PositioningDrives software design tools which can demonstrate potential savings.

Other opportunities to save energy, which were highlighted at the Audi plant include shortened tubing lengths between grippers and vacuum generators. This has been made possible because of the compact and light design of Festo's vacuum generators, avoiding long evacuation times which would require larger nozzles to be fitted, resulting in higher air consumption.

The EU Machinery Directive requires risk analysis and risk assessment to be carried out for all machines. These enable safety objectives to be defined that can be achieved by implementing various safety functions. Safety pneumatics from Festo in the form of components, circuits, and engineering provides users with a convenient means of achieving safety objectives. These must have the aim of ensuring safe machine operation in all modes and all stages of machine service life.

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