SMC drives compressed air efficiency at global automotive supplier Valeo

As part of a commitment to drive a 45% reduction in carbon footprint across its entire value chain by 2030 (and move towards carbon neutrality by 2050), global automotive supplier Valeo is taking advantage of the innovative air-saving initiatives and technologies available from industrial automation specialist SMC. The project, which began at Valeo in France but is rolling out across the group's international locations, has delivered air consumption reductions of circa 50% in blowing and vacuum applications. Furthermore, reducing shop pressure (when possible) to 4 bar instead of the conventional 7 bar has provided 28% savings in compressed air without any compromise in efficiency.

Celebrating its centenary in 2023, Valeo is a world-leading automotive supplier operating in 31 countries and partnering with automakers globally. The company builds its success on proposing innovative products and systems that contribute to the reduction of CO_2 emissions and to the development of intuitive driving. In total, Valeo has around 103,300 employees, 184 production sites and 64 R&D centres worldwide.

Cut carbon footprint

"We define a number of values for all our factories around the world with the ultimate objective of zero carbon footprint," explains François Lebreton, Group Segment Manager/Purchasing Manager - MRO parts at Valeo. "The name of this ambitious programme is Cap 50, which sets out our commitment to achieving carbon neutrality by 2050. By 2030, our emissions will have decreased by 45% across the entire Valeo value chain, including emissions from our suppliers, our own operating activities, and the end use of our products [in comparison with 2019 levels]."

On the journey to carbon neutrality, the company will reduce emissions related to its in-house operating activities by 75%, from 1.1 million to 0.3 million tonnes of CO_2 (Scopes 1 and 2), an ambition that will demand investment of more than €400 million at the group's sites. This spend will enable the current 100 most carbon-intensive facilities to become energy-efficient plants by 2030.

"We rely on the strong involvement of our suppliers to explore all possible improvements at our production facilities," says Lebreton. "SMC is a very good partner in this regard as their sales teams are actually working with our teams on the factory floor to identify all potential enhancements. They propose new solutions and have the right expertise. SMC are totally involved in our strategic carbon-neutral objective."

Cut air consumption

Relatively few manufacturing plants are aware that compressed air equipment accounts for about 20% of factory power consumption. Air blow is the main culprit, responsible for over 40% of all air usage, with actuators accounting for 14% and suction 9%. Furthermore, today's plants suffer from 20 to 50% leakage rates due to poorly maintained compressed air systems. Many notable

gains are subsequently attainable by selecting a proven and competent supplier in this technology area.

“SMC has a range of solutions available to implement improvements,” says Lebreton. “It all started with a local audit to measure our compressed air consumption and identity the way forward regarding corrective actions. The go or no-go decision hinges on the return on investment [ROI]. With SMC technology, ROI is very often very short, so we can make decisions quickly on a factory by factory basis or even - in some cases - production unit by production unit.”

The first initiatives took place in France, but international deployment is also in progress with the help of SMC’s worldwide network of local support teams.

In terms of results, by using special tools SMC has been able to detect and eliminate leakage rates of 10-30% following the repair or replacement of components like fittings, tubing, seals and filters. Furthermore, with the introduction of innovative technologies, the team has achieved reductions in air consumption of around 50% in blowing and vacuum applications. SMC can offer a myriad of devices that help plants to reduce air consumption in comparison with conventional alternatives, including impact blow guns (87% reduction), pulse blow valves (50%) and vacuum units (93%).

Cut pressure

Another important step forward at Valeo involves reducing the air pressure. Most industrial plants utilise pressure of between 6 and 7 bar. However, by lowering pressure it becomes possible to reduce energy consumption significantly. The global understanding of pressure reduction is that it will affect performance. Although this statement is true for some equipment, in reality the vast majority of workstations keep working normally.

“Where possible, we have reduced pressure in order to save compressed air,” confirms Lebreton. “Furthermore, to avert any stoppages in production flow, the system is maintained in operation, thus avoiding any complicated re-starts. No efficiency problems have been reported from plants adopting this strategy.”

Valeo has made a very strong and ambitious commitment to achieve carbon neutrality and, with the help of key technology partners such as SMC, is on course to achieve its objectives. The company receives regular recognition for its comprehensive approach to sustainable development. Indeed, in 2021, sustainable economy magazine Corporate Knights ranked Valeo as the most sustainable company in the automotive sector, and among the world’s top 100 most sustainable listed corporations.

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