Vacuum Technique: a fifth business line

Atlas Copco Vacuum Technique has become the a fifth independent business area for the Atlas Copco Group, alongside Compressor Technique, Construction Technique, Industrial Technique and Mining and Rock Excavation Technique. *MechChem Africa* talks to Sofiane Kerfali (right), regional business line manager for vacuum pumps and systems in the Middle East and Africa; and Willem Brits (below), the representative for Industrial Vacuum in South Africa and neighbouring southern African countries including Zimbabwe and Namibia.

Vacuum solutions originally formed part of Atlas Copco Compressor Technique's product portfolio. Following the expansion of the product line through acquisition of respected companies such as the Edwards Group, Leybold and Quincy, along with global earnings growth, on January 1, 2017 Vacuum Technique earned separate business area status.

Globally, according to Brits: "the vacuum pumps and systems business is as big as the compressor business and, thanks to growing product offering awareness and market penetration, Vacuum Technique is now getting onto a similar path locally. As a fully-fledged business area Industrial Vacuum is now better positioned to expand by delivering turnkey vacuum solutions to our customers across the southern African region."

Regional manager for the new business line, Sofiane Kerfali adds: "In Africa, we have achieved our chosen accolade 'first in mind, first in choice' on the compressor side, with significant market awareness and penetration. But in vacuum, we are less well known. Vacuum Technique products are not known in Africa so we have work to do to catch up with Atlas Copco's other business areas, work that will, undoubtedly, lead to substantial growth in the vacuum product line," he tells *MechChem Africa*.

"We have excellent vacuum products backed by world-class service support, systems that offer the best possible energy savings and high reliability. But Africa does not know about these products, so this is our challenge. We need to make Africa aware of our capability and that of Vacuum Technique's product range," he adds.

Atlas Copco Vacuum Technique's flagship GHS VSD+ offers energy savings of up to 50% as well as superior performance against benchmarked oil-sealed, claw, liquid ring and dry vane vacuum pump technologies.

With respect to markets, Kerfali says that vacuum and compressor technologies share a lot of synergies. "We target similar industries: general industry on the handling side, plastic injection moulding and vacuum packaging, and hosts of applications such as those in the petrochemical and electronics industries, and the pharmaceutical, food and beverage, packaging and mining sectors.

"There are many customers working with established brands that are now globally owned by Atlas Copco. Through these brands and by incorporating our related compressor expertise, we can claim 150 years of experience in vacuum technology and its application," he says.

The flagship GHS VSD+

Core to Atlas Copco's group ethos is a strong focus on energy efficiency, its vacuum products being no exception. "Our GHS VSD+ vacuum pumps for centralised solutions are our flagship. They have won several awards, such as *Plant Engineering's* 2016 Product of the Year Award. This is largely due to the 50% energy savings that can be achieved compared to other similar capacity vacuum technologies," Brits notes.

"In addition, compared to competing pumps, the oil retention of the GHS is excellent, making them more environmentally friendly than its predecessors or competitors, with much lower oil consumption and emissions," he says.

Above: *On the control side, the very latest ESv central controllers are available to control up to six Atlas Copco compressors – and these can be a mixture of VSD-controlled or fixed speed pumps.*
Right: *AWS180-5500 Single Stage Liquid Ring Pumps from Atlas Copco Vacuum Technique are also part of the company's extended range.*

GHS VSD+ oil-sealed, rotary-screw vacuum pump with variable speed drive (VSD) technology is based on the well known and durable, new-generation, intelligent plug-and-play design principles of Atlas Copco compressors. Notable features include:

- Superior performance against benchmarked oil-sealed, claw, liquid ring and dry vane vacuum pump technologies.
- Increased efficiency: state-of-the-art screw technology, a VSD and an innovative motor design combine to produce a leap forward in efficiency.
- Quiet operation: noise levels are around half that of comparable technologies.
- Reduced environmental impact due to ultra-high oil retention at all operating pressures.

The largest in the range is the GHS 5 400, which can evacuate 5 400 m^3 per hour of air and hold vacuum pressures down to 0.35 mbar absolute (35 Pa). "This machine is driven by a 90 kW motor, compared to its closest competitor, which runs off 150 kW. This translates into a direct energy saving of 40% before taking into account the savings achievable by using the VSD," Brits informs *MechChem Africa*.

In terms of the cost of ownership, he estimates that average pay back times on the capital investment for these machines is typically between one-and-a-half and four years. "While the acquisition cost is not significantly different from other premium vacuum pumps, the cost saving opportunities available in many case studies we can share show that these can be the most cost-effective vacuum pumps available. The energy cost component of vacuum pumps can be as much as 90% of the lifecycle cost, so it is possible to recoup the initial investment in energy savings very quickly," he advises.

"At the heart of a GHS vacuum pump is a pair of the same Airtec screws used in our high-end compressors. Along with best in class IE3 motors and a state-of-the-art and patented inlet valve, these are, we believe, the best vacuum pump available," he suggests.

He also lifts out reliability and service as core features: "Smart link options can be used to continuously monitor all the internal parameters of the pump and these can be sent via a GSM network to the operator or to Atlas Copco technicians, by email or by SMS.

"On the control side, the very latest ESv central controllers are available to control up to six Atlas Copco compressors – and these can be a mixture of VSD-controlled or fixed speed pumps. We also offer our Multi Pump controller, which can also control up to six vacuum pumps, but these do not all need to be Atlas Copco pumps. This means, for example, that a controller and one VSD pump, can be added to an existing vacuum pump network to achieve accurate demand following and massive energy savings," Brits points out.

The broadest range

As well as its flagship GHS range of oil-sealed screw vacuum pumps, Atlas Copco also offers oil-sealed vane, dry vane and dry contact-free claw systems as well as liquid ring vacuum pumps. "We also have a full range of steam ejectors," says Brits. "We are a big player, capable of finding the best-fit solution for almost any application, from rough to ultra-high vacuum," Brits adds.

He also lifts out a new financing option called operational rental: "This is a long term rental option that takes away the 'pain' of raising capital to buy one of our vacuum pumps. We have partnered with a finance company willing buy the pump from us to lease to an operator. For a five-year contract, for example, the operator will pay a monthly rental fee for the duration of the contract. After five years of payments, for an additional one-month instalment, the pump can be transferred onto the company's books as a fully depreciated asset.

"This means that the pump can be funded as an operational expense for the five-year contract term. For pumps that are consuming energy 24/7, the cost savings in energy alone can often cover the full rental cost, which effectively makes the pump free to the operator, which makes operational rental an excellent option," Brits suggests.

"Atlas Copco vacuum pump expertise is already well-established in global markets. We have the best technologies available and a history of success. In Africa, though, customers do not always make the best technology choices, which often leads to higher ownership costs.

"By right sizing and choosing the best available match for the applications, along with our new financial options, we can help to make businesses all over Africa much more successful," Kerfali concludes. ❑