VIGAN: 55 years of optimizing and upgrading pneumatic handling – and following the science to maximize efficiency

VIGAN is a prominent manufacturer of shiploaders and unloaders, headquartered in Nivelles, Belgium. Founded in 1968, the company has decades of experience in providing innovative solutions for the loading and unloading of bulk materials such as grains, seeds, animal feed and some chemical products (alumina, soda ash, ...).

VIGAN's solutions are known for their reliability, efficiency, and flexibility, allowing customers to handle a wide variety of bulk cargo with ease. The company offers a range of solutions to meet the specific needs, including stationary, mobile (rubber tyres or rails), and combined loaders and unloaders. VIGAN's equipment can be customized to fit any port or terminal, ensuring seamless integration into existing infrastructure.

PNEUMATIC UNLOADING

Pneumatic unloading is becoming the preferred technology to unload cargo from large vessels: commodities include grains and oilseeds, but also less free-flowing material such as dried grain solubles, soybean meal and other less free-flowing materials. To do so the pneumatic unloader will use a special 'cutting' nozzle that helps fluidize the compacted material prior being sucked up. Pneumatic unloading is initiated by creating a vacuum and transferring that over a piping system. As the cargo does not contain air, a special suction nozzle is designed that has a regulated air inlet kept above the cargo surface. That regulated air inlet makes it possible to opt for the appropriate air/cargo mix, allowing a maximum suction capacity as it is influenced by the cargo density and its





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granulometry and free flowing properties.

Ultimately, pneumatic unloading is a process of air lifting. One needs an air speed that is enough to carry particles over a distance. This principle is based on physical laws and therefore air speed, pipe diameter and length, friction and ratio air/cargo all add to the equation. Physical laws are embedded in precise equations.

This doesn't mean that the process can't be optimized. And that is what VIGAN has been doing over the last 55 years. It selects steel alloys with excellent wearing resistance and minimal friction, as well in the telescopic piping systems as in the elbow and the flexible pipes. It continues to optimize the powering of its turbines through soft and hardware improvements. VIGAN uses the latest bearings and gaskets to maintain the vacuum and minimize pressure losses. It also uses software to help its customers steer the machines and troubleshoot in case of issues.

CUSTOMER SERVICE

VIGAN's first goal is customer satisfaction. The integration of customer service into the sales department of spare parts is a fundamental aspect of the philosophy at VIGAN. The company always aims to offer its customers a flexible solution.

VIGAN is committed to providing excellent customer service to its clients. It doesn't just offer spare parts for up to ten years — it still sells spare parts for VIGAN machines that are 30 to 40 years old.

VIGAN also offers technical assistance to its clients. This includes inspections of VIGAN machines, with the production of a report that includes findings, condition of the machine, recommendations for maintenance or adjustments to be made, and possibly a list of possible parts to be changed in order to modernize a machine.

As physical laws are older than VIGAN one might say that its machines are timeless. They have great life expectancy, but if one is implementing regularly new technologies on its machines (and VIGAN does), it might seem that equipment that is ten or more years old is outdated. VIGAN



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keeps its finger on the pulse. Its service and after-sales team together with the sales people inform customers about what is new.

With the latest energy crisis energy consumption is a particularly hot item. VIGAN has developed upgrade modules where an existing machine can be equipped with new electrical engines and frequency steering to reduce consumption further. This step has minimal impact on the machine and its global layout. Within the same cabin, integrated frames are placed, holding the new engine directly connected to the existing turbine. A new electronic frequency steering is installed. In some cases, with downtime of less than a week, the work carried out means that the customer is able to operate at an energy consumption reduced by 25%.

But also, the latest piping, elbows and other parts can be installed on older machines. VIGAN keeps track of all its machines that are still running and keeps exact drawings and pictures of the project as built. It is one thing to produce and market machines, VIGAN also likes to keep its customers as happy as possible. It is



therefore ready to maintain the standards of all its machines — not only the ones it is building now, and will build tomorrow.

Whether the work involves changing engines or piping systems, such an intervention must be well programmed beforehand. Customers get the dimensions of the new configurations, prepare the cabins supported by VIGAN's team and plan for a small working break. Costly? Not really. Depending on its customers' unloading rate, the cost of an upgrade can be recouped in only one to two years. Whatever the situation, the investment will be paid back by the energy track, reduced demurrage costs and the ease of operation.

