

VIGAN: INNOVATION IS A MAIN DRIVER

COMPANY NEWS

Turbo-blowers are the lungs of our machines. They create suction by generating an impressive under-pressure. Their operational principles are the same as those employed in turbo-jet engines or turbines for power plants. Thanks to the turbo-blowers, our machines can transfer cargo without using excessive moving parts as in mechanical systems. The product is handled gently from the nozzle to the airlock.

SPECIFIC FEATURES

Turbo blowers are designed to provide powerful and high air speed and, at the same time, efficient and low-noise operation. They are specifically designed to run at variable speeds up to 4,800rpm, which allows them to generate a depressurised flow that sucks the product into the machine. This high-speed operation is made possible thanks to the use of motors and turbo-blowers that are statically and dynamically balanced, ensuring smooth and stable operation.

One of the key benefits of turbo blowers is their efficiency. They can generate 0.5 bars of vacuum, optimising energy efficiency to 0.7 kWh/ton in grain with a density of 0.75. This efficiency is further enhanced using

variable speed regulation, which adjusts the speed of the machine based on the actual product flow. Significant energy savings compared to constant speed systems are the direct consequence.



Another consequence of the use of inverters are to be noticed at the acoustic level. Thanks to the use of power adaptation in operation and multi-stage design, noise emissions are greatly reduced compared with other technologies such as root pumps. Additionally, VIGAN has developed custom noise cancelling solutions to reach low-noise emission values, which is especially useful in urban environments.

Finally, turbo blowers are also known for their dust-free operation. This is achieved by the complete pneumatic transfer in the machine being made through vacuum, which makes the handling of the product, by nature, dust-free. Additionally, a large filter protecting the turbo-blowers, guarantees dust-free exhausts, further contributing to the cleanliness of the operation.

FLEXIBLE UNIVERSAL JOINT

Turbo blowers are known for their versatility and flexibility, and one of the key features that contributes to this is the use of a flexible universal joint. This joint is designed to provide easy access for servicing, a major advantage for maintenance and repair work.

One of the benefits of the flexible universal joint is the absence of loads and vibrations on the motor shaft. This guarantees a long bearing lifetime. The machine can operate for longer periods of time without the need for frequent maintenance or repairs. Additionally, the standard and efficient motor cooling system also helps to prolong the life expectation of the machine.

Moreover, the motor used in these machines has a standard design that can be serviced by any motor care company. This allows for greater flexibility in terms of maintenance and repairs as it is not limited to a specific company or service provider. This also makes it easier to source replacement parts if needed.

Overall, the flexible universal joint is an important feature of turbo blowers that contributes to the machines' versatility, efficiency and ease of maintenance. This feature helps to make the turbo blower a reliable and durable option for a wide range of industrial applications.

INNOVATION: INLINE MULTI-STAGE TURBO-BLOWERS

Innovation is a key driving force for VIGAN. Fifteen years ago, the company was a pioneer in developing inline multi-stage turbo-blowers driven by high-power frequency drives. Even after several copy attempts, no other real multi-stage turbo-blower design exists as of today on the ship unloading market.

The design of VIGAN's multi-stage turbo-blowers is directly inspired by aircraft engine and gas turbine industries, utilising real multi-stage technology. This means that every compression stage is directly followed by the next one, eliminating the need for additional piping that can induce pressure losses and reduce turbine efficiency.

This technology is particularly useful in applications where power consumption is important, as it allows for high efficiency to be achieved. VIGAN's direct drive technology, individual wheel testing and balancing, and efficient sealing solutions, all contribute to this efficiency.

As a result, VIGAN's multi-stage direct drive turbo-blowers are the most high performance ones available in the ship unloading market. They have high vacuum and airflow parameters in a compact assembly, with no additional piping between turbo stages to reduce pressure losses. Additionally, when more than one turbo-group is used, they are placed in parallel to increase efficiency and capacity. Finally, a fine-tuned torque regulation is used to continuously adapt speed and power consumption for energy savings.



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CONCLUSION

VIGAN's multi-stage direct drive turbo-blowers are the most efficient ones available on the ship unloader market. This is the result of their high vacuum and airflow performances in a compact assembly without additional piping between the turbo stages to reduce pressure losses.

When more than one turbo-group is used, they are placed in parallel to increase efficiency and capacity. Finally, a fine-tuned torque regulation is used to continuously adapt speed and power consumption for energy savings.

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