

Screw compressors

and why they are
so important in
dry bulk transport



MOUVEX® RESPONDS TO THE NEED FOR A LIGHTER, MORE COMPACT MACHINE WITH ITS NEW MX12 MODEL

The search to identify the ideal spot in which to situate a screw compressor on the chassis of a dry bulk transport vehicle is akin to picking the perfect piece of real estate: it's all about location, location, location, writes *Christophe Jovani*. That task has become more challenging in recent years with the arrival of new regulations, such as Euro 6, that established stricter emissions standards. At the same time, transport-truck manufacturers were developing new ways to reduce the overall weight of their vehicles as a way to increase the amount of payload that could be transported, all while optimizing the vehicle's fuel efficiency and operational costs.

This put direct pressure on the designers and manufacturers of screw compressors to develop new models that are not only lighter, but also have a smaller footprint that allows them to fit more easily within the reduced real estate on the

truck frame. This is incredibly important because screw compressors are a critical link in the dry bulk supply chain. Without them, the trucks that deliver these commodities to the network of product-handling conveyors that are situated at ports, stockyards, product terminals, mines and a whole host of other unique processing points will not be able to be unloaded as efficiently or reliably as necessary.

Recognizing this challenge, Mouvex®, Auxerre, France, a product brand of PSG®, Oakbrook Terrace, IL, USA, a Dover company, has recently introduced the MX12 Screw Compressor to the dry bulk transport market. At a weight of just 110kg (242 lb), the MX12 is one of the lightest and most compact screw compressor currently available, which makes it ideal for mounting inside today's smaller truck frames.

Operationally, the MX12 is able to build and maintain 2 bar (29 psi) of air pressure, which helps give it the ability to deliver flow rates up to 1,130 m³/hr (4,975gpm).

From a real-world perspective, this means a 28-tonne load that used to require 60 minutes to deliver can now be completed in 30 to 50 minutes, a time saving of 10 to 30 minutes per load. The design of the MX12 compressor also allows it to maintain the required 2 bars of pressure throughout the duration of the delivery process. This is an important feature when the load consists of heavier granular products — such as gravel, animal food, plastic pellets or lime — that require a significant amount of air in order to stay in suspension, though it will perform equally reliably with finer materials like flour, sand, cement and calcium.

The compressor's lower inlet speed equates to reduced fuel consumption and fuel bills. The problem of the compressor overheating during its operation is defeated through the incorporation of an oil radiator that keeps the compressor's internal temperature at a level that prevents stalling caused by overheating. Finally, the compressor's simple design allows for easy repairs with less downtime,

while the anti-vibration design reduces stress on moving components with lower noise levels during operation.

The MX12 is just the latest model in Mouvex's family of screw compressors, all of which feature a modular design and cooled or non-cooled operation. This enables them to fit easily on the chassis of all major transport-truck manufacturers, with the ability to convey a wide range of bulk products from fine powders to heavy granulates. These screw compressor models include:

- ❖ **MH6:** designed to be the best solution for the high-speed, high-volume unloading of cement and other construction materials. Features an integrated PTO module that helps make it compatible for use on the frames of most major European truck manufacturers with no need for gimbals, holders or torque limiters.
- ❖ **B600:** an optimum solution for mounting within the most confined truck frames with dimensions of only 549 by 348 by 280mm (22 by 14 by 11 inches) and a weight of 94kg (207 lbs).
- ❖ **Mistral:** a multi-purpose solution for dry-bulk delivery applications that require versatility and flexibility. Constructed of cast iron and hardened steel for good material compatibility with the ability to operate effectively at atmospheric temperatures as low as -30°C (-22°F).
- ❖ **TYPHON II:** powerful enough to achieve flow rates of up to $1,130\text{m}^3/\text{hr}$ (4,975gpm) with oil-free screws that help increase reliability while reducing maintenance downtime and costs.
- ❖ **B200 Flow Control:** for those transport companies that may deliver more than just dry-bulk products, the B200 has been designed for the delivery of liquid cargo. It features a rugged design that is enhanced with special protectants on the screws and body that allows it to be compatible with a broader range of chemicals, while all exterior components, including flanges, hose and relief valve, are constructed of stainless steel for added protection against corrosion and abrasion. The optimized flow path allows for greater efficiencies that are manifested in lower delivery times and cost.



CONCLUSION

As the demand for lighter, more compact screw compressors has grown, Mouvex has stepped to the fore with its MX12 Screw Compressor model, which fits seamlessly into the company's screw compressor product portfolio. These machines have all been designed to optimize the handling of dry-bulk products of any type while meeting the evolving needs of truck



manufacturers and the compliance tenets of regulatory agencies.

ABOUT THE COMPANY AND THE AUTHOR

Christophe Jovani is the EMEA – Marketing Communications Manager for Mouvex® and PSG®. Auxerre, France-based Mouvex® was incorporated in 1906 and is a leading manufacturer of positive displacement pumps, screw compressors and hydraulic coolers for use in the refined-fuels, oilfield, energy, food/sanitary, military, transport and chemical-process industries.

Mouvex is a product brand of PSG®, a Dover company. Headquartered in Oakbrook Terrace, IL, USA, PSG is comprised of several major pump brands, including Abaque™, All-Flo, Almatec®, Blackmer®, Ebsray®, em-tec, EnviroGear®, Griswold®, Hydro Systems, Mouvex®, Neptune™, Quattroflow™, RedScrew™ and Wilden®.