

Press Release

- Power package with a small diameter achieves a high torque with the lowest rpm -

Leading Edge Technology with High Torque Air Motors manufactured from superior grade Stainless Steel

For protection against the elements in historic building refurbishment or for protecting against corrosion in the shipbuilding industry, paint and/or coatings come into play. According to their own figures, the German paint and coatings industry, which employs about 25,000 people and has revenues of some 6.7 billion Euros annually, produced approximately 2.6 million tons of paint, coatings and ink in 2011. In the industries roughly 250 paint and print-ink factories throughout Germany, production is achieved through the use of robust and cost-efficient components offering a low price-performance-ratio. Among these various components, air-powered, high-torque, stainless steel motors are an excellent solution for blending and mixing applications in this industry.

All mixing equipment used in the paint industry has one thing in common: a space saving motor with ample power to operate mixers, and agitators at full production. A compact, light but extremely strong air-vane motor meets this need perfectly. Also, when it is manufactured from stainless steel, it meets the requirements of the chemical and paint industry, like no other drive. Noted air-motor manufacturer DEPRAG SCHULZ GMBH & CO., from Bavaria, continues to set new standards in this area with its innovative, high torque, stainless steel



Stainless Steel Motors – ATEX certified

motors. Recently, the company further expanded its ADVANCED LINE series of fully-sealed, stainless steel, oil-free air motors by adding several new "high torque motors" models. Specifically, new drives include those in the 280-, 570-, and 900-watt power range.

"With this product expansion, we are able to cover the growing demand for high-torque, stainless steel motors and offer with this addition a complete product range with many attractive solutions," says DEPRAG Product Manager, Dagmar Dübbelde. In addition to being powerful and corrosion resistant, ADVANCED LINE air motors are designed to be compact for easy integration into handheld devices, and other industrial machines. These high-quality stainless steel motors are excellent for use in the following industries: chemical, paper, pharmaceutical, medical, and food, as well as, the paint and coatings sector.

An example of how manufacturers can benefit from DEPRAG's newly expanded ADVANCED LINE, is where those high-viscosity substances, such as varnishes, that must be further liquefied in order to achieve a viscosity suitable for spray application. This requires the use of an industrial agitator that stirs the liquid mass until the desired fluidity is achieved. To this end, the newly available ADVANCED LINE motor 67-423 model with its power of 280 watts at a nominal speed of 7 rpm offers the perfect solution. With its nominal torque of 410 Nm and starting torque of 615 Nm, this high performance is well suited for these kinds of demanding applications.

The key to an air motor, is the way it delivers consistent power over a wide speed range, and operates seamlessly in an environment of frequently alternating loads. Torque and speed can be accurately adjusted by regulating the incoming air pressure. An air motor is unlikely to stall, but if it does, at about twice its rated torque output, it simply stops. When the load is reduced, it immediately restarts, with no consequential damage, even when stalled at high speed and loads.



Motors designed for chemical and pharmaceutical applications

Another advantage to air motors is their power-to-size ratio. Depending on the exact model, it generally requires only a third to a fifth of the mass of a commercially available electric motor to provide the same performance. The diameter of DEPRAG's high-torque, stainless steel motors, for example, is just 63 millimeters for its 280-, 570- and 900-watt models!

In operation, air-vane motors can be applied over a broad spectrum of applications, thanks to their simple construction, power-to-mass ratio, expansive speed range and safe operation in explosive environments. The principle of air motors is simple: compressed air sets a rotor in motion within an eccentric cylinder. To

further enhance performance, there are also vanes within machined slots on the rotor, which are pushed outward against the cylinder wall by the centrifugal force. Working chambers are then formed in between the vanes for the compressed air. The volume of the chambers varies, based on the eccentric design of the cylinder. Expansion of compressed air within the chambers, transforms pressure energy into kinetic energy, and then a rotational movement is generated.

Thanks to this simple operating principle, air motors represent a remarkably, trouble-free power source. For one thing, they can never overheat. Due to the expansion of compressed air that takes place under load, the air vane motor has an inherent cooling system, making it perfect for

applications in hazardous environments. (The standard ADVANCED LINE air motors are ATEX certified.)

Air motors are also ideally suited for those applications in the chemical industry, where they are exposed to aggressive materials and environments, due to the fact that their smooth surfaces are easy to clean; the motor is completely sealed; air cannot escape; contaminants cannot get in; and the rotor spindle is very robust and includes an extremely durable radial shaft seal ring. DEPRAG ADVANCED LINE Air motors can also be operated oil free, or without lubrication, as required for the paint, coatings and food industries.

All DEPRAG stainless steel motors are delivered with a standard high-torque stainless steel planetary gear set. The motors can also be integrated with one of a number of optional planetary gear-sets to accommodate various operating speeds. The un-g geared stainless steel 900-watt motor, for example, has a rated speed of 6,000 rpm. Combined with one of seven different planetary gear sets it can be modified to provide a rated speed of 150 rpm. In addition to its new high-torque motors, DEPRAG is also now offering four new high-torque gear sets, further extending this capability to a rated speed of 20 rpm. "This broad range of stainless steel motors makes DEPRAG the leader in this area. We offer the ideal solution for every performance requirement," Dübbelde says.



DEPRAG's ADVANCED LINE air motors are also available with various mounting accessories such as flange mount or foot mounting brackets.

The development and construction of high-quality air motors is a core competence of DEPRAG SCHULZ GMBH. A specialist in air motors, automation, air tools and screwdriving technology, the company operates with approximately 600 employees in 50 countries. With its new high-torque air motors, the company offers your operation not only a high quality stainless steel motor, but a drive solution that is completely engineered to your application. DEPRAG engineers work side-by-side with the customer during development and fine tuning with decades of experience at their side.

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