

NEWSLETTER

Germany's paper industry is the no. 1 in Europe and with a turnover of approximately 14.9 billion euro it makes the no. 4 spot worldwide behind the USA, China and Japan. A total of 3000 different kinds of paper are manufactured at around 180 production locations. 44,000 employees work to produce around 23.2 million tons of paper per year. The innovative paper manufacturing machinery ensures that the ravenous paper appetite of industrial nations is continuously satisfied.

Drive Solution for the Paper Industry

How did paper originate? The procedure has changed very little since 105 AD, the date when the process of paper manufacture was first recorded. Fibres are moistened in water and then scooped out with a sieve. This paper web is later pressed and dried. Today gigantic paper machines are used in the various processing steps to turn the pulp into paper.

This is an enormous challenge for machine constructors as individual components have to be able to withstand extreme pressures. DEPRAG SCHULZ GmbH & Co. in Amberg, Germany manufactures air vane motors made from stainless steel, which are proven to be the optimal drive solution for numerous areas of application.

The material processing of paper machines for example: pulp and wood pulp as well as waste paper fibres are mixed



in a certain proportion depending on the type of paper and then diluted in water. Chemical bulking agent and material aids are also added. This aggressive liquid must be "stirred" again and again. The motor used for this job has to be extremely robust, ergo, an air motor! The DEPRAG air vane motors made from stainless steel are ideal because they are designed for use in extreme conditions. They are water vapour resistant, insensitive to acids and heat and are high performance, durable machines. DEPRAG SCHULZ GmbH & Co. in Amberg, Germany is a renowned specialist for high quality air motors. Their air vane

motors from the motor series 67- are designed with stainless steel housing as standard. All motors for application in the paper industry are totally sealed and exhaust air cannot escape nor can dirt infiltrate from the motor's surroundings. The drive spindle is made from high quality non-corrosive stainless steel and is insensitive to aggressive chemicals. In particular it has a highly resistant radial shaft sealing. These stainless steel motors are ideal drives for wet rooms and bear up against the acidic materials used in fibre preparation at paper factories.

Air motors can be applied in a wide spectrum of fields due to their diverse design versions, simple construction, light performance weight, high speed ranges and explosion safety. The air motor works on a simple principle. The air created by the compressor causes the motor shaft to rotate.

In the vane motor the rotor starts to turn in the eccentric cylinder. The vanes held in the rotor slits are pushed to the edge of the cylinder wall by centrifugal force. This creates working chambers for the expanding air. The expansion of compressed supply air changes into kinetic energy and rotational movement is generated.

There are many advantages to using air motors as a drive. The main benefit is the high performance density. Depending on design they only need a fifth of the weight



of a standard electric motor or a third of the size.

The generated performance is almost constant for this motor type over wide speed ranges. It can be operated over a wide range of varying loads. The motor performance can be adapted by altering the operational pressure and the speed can be smoothly controlled by throttling the air quantity. The air motor can be loaded until standstill without problems or any kind of damage. When the load is reduced it restarts immediately and successively as many times as required even at high duty cycles.

Another of the advantages of this type of drive is that air decompression cools down the friction heat created by the air motor. Therefore it is cool when loaded and overheating is almost impossible. Additionally the inner excess pressure prevents the intrusion of dust and dirt.

Oil free operation of the air motor in dry run, as required by the food industry, is also possible with low performance loss.

All DEPRAG stainless steel motors are fitted with planetary gears as standard in stainless steel design. A 1.2 kW motor with a speed of 4500 U/min can also be delivered with various planetary gear speeds of 1250 U/min, 550 U/min, 350 U/min, 160 U/min or 100 U/min as standard.

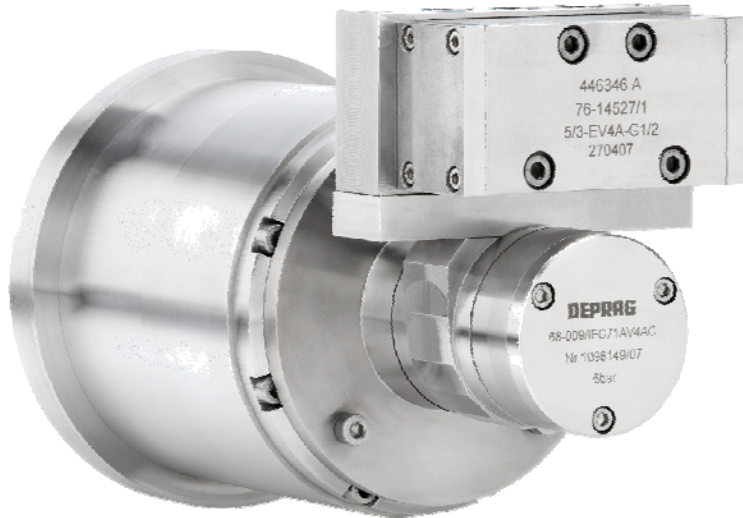
Air motors are far superior to standard electric motors in their compactness and performance. A 1.2 kW strength vane motor with integrated planetary gear with nominal torque of 350 U/min is only 268 millimetres long and 82 millimetres in diameter.

Using an air motor also eliminates the possibility of a short circuit, this is a further advantage over the electric drive.

DEPRAG SCHULZ GmbH & Co. even offers an ATEX certified stainless steel motor with integrated holding brake as standard.

“Whether used for material preparation in paper manufacture, the transporting unit of a paper machine or for cutting the base paper into strips, the stainless steel air vane motor is an all-purpose piece of equipment”, says Product Manager Dagmar Hierl. DEPRAG offers a large selection of stainless steel motors for the paper industry alone. These motors are attractive because of their robustness and high performance.

DEPRAG SCHULZ GmbH & Co. is an international leading supplier of air motors, air tools, screw-driving technology and automation.



The company is represented in 40 countries and has 600 employees. One of their main areas of expertise is the manufacture and development of air motors.

The DEPRAG engineers have decades of experience in working hand in hand with their customers in the development and purpose-driven customisation of their motors for individual applications. 85 % of all projects are customer specific applications. DEPRAG offers individually customised standard motors and special motors up to fully automatic production systems.

Please contact us for further information:

DEPRAG SCHULZ GMBH u. CO.
Kurfürstenring 12-18
D-92224 Amberg
Phone: +49 (0) 9621 / 371-0
Fax: +49 (0) 9621 / 371-1 99

www.deprag.com