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The customer magazine of Sprimag Spritzmaschinenbau GmbH & Co. KG

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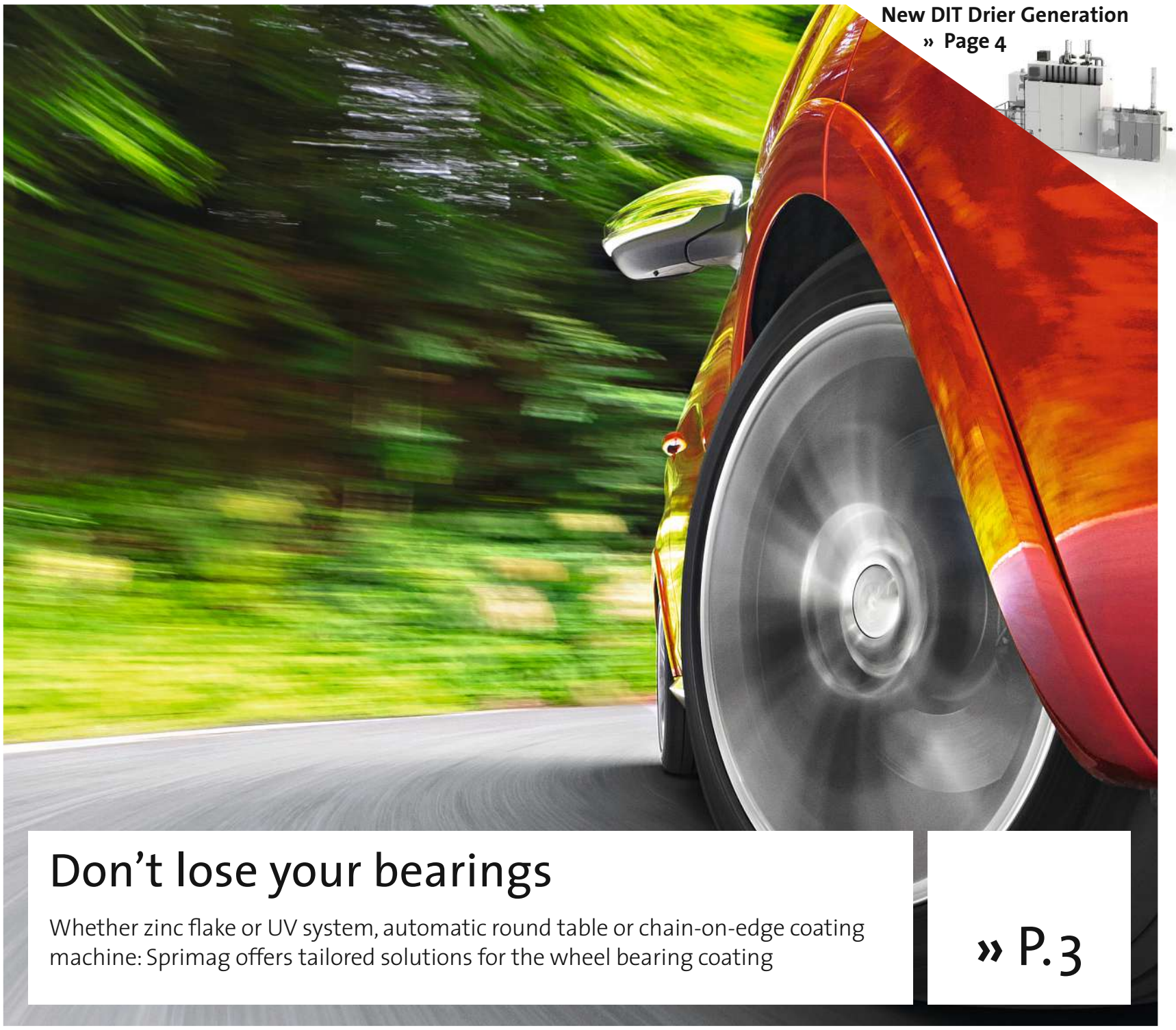

New DIT Drier Generation
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Don’t lose your bearings

Whether zinc flake or UV system, automatic round table or chain-on-edge coating machine: Sprimag offers tailored solutions for the wheel bearing coating

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OVERVIEW

Joachim Baumann, Managing Director of Sprimag

Dear readers,

The spring revival of the German economy has been canceled this year. A lot is changing: The leading German industrial sector, the automotive industry, is announcing thousands of dismissals, which it claims are being caused by its preparations for the electromobility age. The automotive industry has a cough and other sectors will soon become very ill. Admittedly, it’s important to look to the future. It’s even more important to keep re-discovering your own strengths.

We are also looking to the future – in many ways. Sprimag is one of the leaders on the global market of brake disc coating systems. Now we want to become one of the leaders in the wheel bearing coating field. The automotive industry has developed new ideas on this topic. We are putting these into practice with our tailored system concepts.

Consistent developmental work is one of the virtues of German machine and system manufacturers. As a logical consequence, this means that we don’t rest on our laurels. This time, we got to work on our DIT internal drier for aerosol cans, which has been frequently tried and tested over many years. Yet again, we were able to significantly improve a good product.

Reliable, strategic partnerships are another essential element of business success. We have established a valuable partnership with the international inspecting technology provider, Bonfiglioli Engineering. We have already carried out two machine projects together – you’ll find more information on these in the new Sprimagazine.

Enjoy reading!

Joachim Baumann

Donation to the „Marte Meo“ project by the Tragwerk Foundation

Sprimag is supporting the Tragwerk Foundation’s „Marte Meo“ project with a donation of € 3,000

On December 13, Managing Director Joachim Baumann handed over a check for € 3,000 to the Tragwerk Foundation’s chairpeople Andrea Dreizler and Jürgen Knodel. The work of the diaconal organization supports young and older people in the Kirchheim/Nürtingen/Plochingen regions in all living situations. One of their current projects surrounds the “Marte Meo” concept: This method, which is supported by photos and videos, helps children, young people and adults with specific needs to better cope with each other in their everyday lives. “Marte Meo” means “by own power”. By using video recordings, this method illustrates helpful behaviors and beneficial moments of communication to parents and children in order to harness these and further develop them in a targeted way.

“As a family-friendly company, we are happy to support a sustainable project like the Marte Meo concept, which helps families in difficult situations. The foundation’s work offers a point of contact which anyone can turn to depending on their life circumstance,” Joachim Baumann highlights.

From left: Jürgen Knodel, Chairperson of the Tragwerk Foundation, Joachim Baumann, Andrea Dreizler, Economic Director of the Tragwerk Foundation

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TRADE SHOW

ADF & PCD: Aerosol and packaging trade show in Paris

The Aerosol & Dispensing Forum in Paris is now a firm entry in Sprimag's trade show calendar. The show is not only one of the most important regular events for the aerosol sector, but also for the cosmetics packaging industry as a whole. On January 30 and 31, the time had come for the gates of the Porte de Versailles to open for their 13th time to over 8,000 visitors.

For Sprimag, the event brings together the company areas of surface and internal coating perfectly because specialist visitors are equally interested in internal coating machines and inspection solutions as well as in surface coating for diverse cosmetic parts. Alongside system concepts for pre-treatment and follow-up treatment in metalization processes or for glass (internal) coating, particularly flexible system concepts are in high demand due to the fast pace of the sector and the associated product life cycles, which are getting shorter. The multitude of specialist lectures and conferences bring a lot added value to the two-day trade fair. For example, the company Mühlbauer presented the CIM-12 camera inspection machine to a specialist audience – a cooperation project between Mühlbauer and Sprimag, which we have reported on in previous editions.

We are reflecting on two exciting days at the trade show and are already looking forward to the next event, which will take place in January 2020.

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CHANGES TO PERSONNEL

New Head of Mechanical Engineering in the Surfaces Department

Klaus Beck has been the new manager of mechanical engineering in the Surfaces department since December last year. He replaces Dieter Kouba, who has retired after 40 years at Sprimag. Mr. Beck started in the Production and Assembly departments at which point he attended the technical school for two years. Mr. Beck has been part of the Mechanical Engineering team since 2008, and celebrated his 10th anniversary at the company last year.

Thanks to his many years of experience at the business and his work in different departments, he knows the company well and has comprehensive know-ledge of the sector.

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STRATEGIC PARTNERSHIP

Leak Detection with Bonfiglioli Engineering

Thinking one step further together, using synergies and profiting from each other's experiences. This and more distinguishes a strategic partnership. This is also the case with Sprimag and Bonfiglioli, whose successful cooperation has already resulted in two corporate machine projects

With the leak detection machines for aluminum tubes (LRP-20) and aerosol cans (LRP-30) Sprimag has already realized two large projects together with the international supplier of testing machines and technology Bonfiglioli. For Sprimag this cooperation meant the entry into the field of testing technology, while Bonfiglioli was able to benefit from Sprimag's profound experience in the field of monobloc aerosol can production. Thanks to Bonfiglioli's tried and tested testing technology, the cooperation was able to focus on pure machine development and thus strike out in a new direction. The aim of the cooperation in both projects was to develop testing machines for aluminum tubes and monobloc aerosol cans that could be perfectly integrated into the line-oriented production process.

Bonfiglioli Engineering was founded in 1974 near the Italian city of Ferrara and is still based there today. The company has always been very innovative, as the first model of the leak testing machine for plastic containers shows. Diversification followed in 1985 with the market launch of testing machines for metal cans & aerosols. In 1988, Bonfiglioli launched its first patented testing machines for the pharmaceutical industry.

The potential of Bonfiglioli resulted in its exponential growth and transition from a family owned business to a merit-based company when it was acquired by the Tasi Group, world leader in superior inspection instrumentation tests & systems, in 2012, taking Bonfiglioli Engineering from local to a truly global company. This move further strengthened its market presence worldwide and offered new input to its internal organizational structure. Like Sprimag, Bonfiglioli is also ISO 90 01 certified.

Today, Bonfiglioli covers a wide range of industrial sectors with its testing technology products, in particular the areas of:

- pharmaceutical industry
- food & beverages industry
- cosmetics industry

The KBA machine is one of the best known and best-selling Bonfiglioli machines and is used for testing 3-piece aerosol cans

Bonfiglioli is based in the town of Ferrara in Northern Italy, famous for its Castello Estense

Bonfiglioli Engineering today is present in over 75 countries worldwide with an international portfolio of over 5,000 accounts. At the beginning of the year, Bonfiglioli moved to a new and larger location with a total area of 11,000 square meters, hosting a staff of over 90 employees. At the same time, the new quarter has expanded the production area to 4,000 square meters. In addition, the new site also boasts of a large warehouse and an exclusive showroom, displaying machinery and containers.

For Sprimag the cooperation with Bonfiglioli means an expansion of the product portfolio with full concentration on the development of machine technology. Together with the Bonfiglioli testing technology and the expansion of the product portfolio to include robot packaging systems, Sprimag has become a strong supplier of end-of-line solutions.

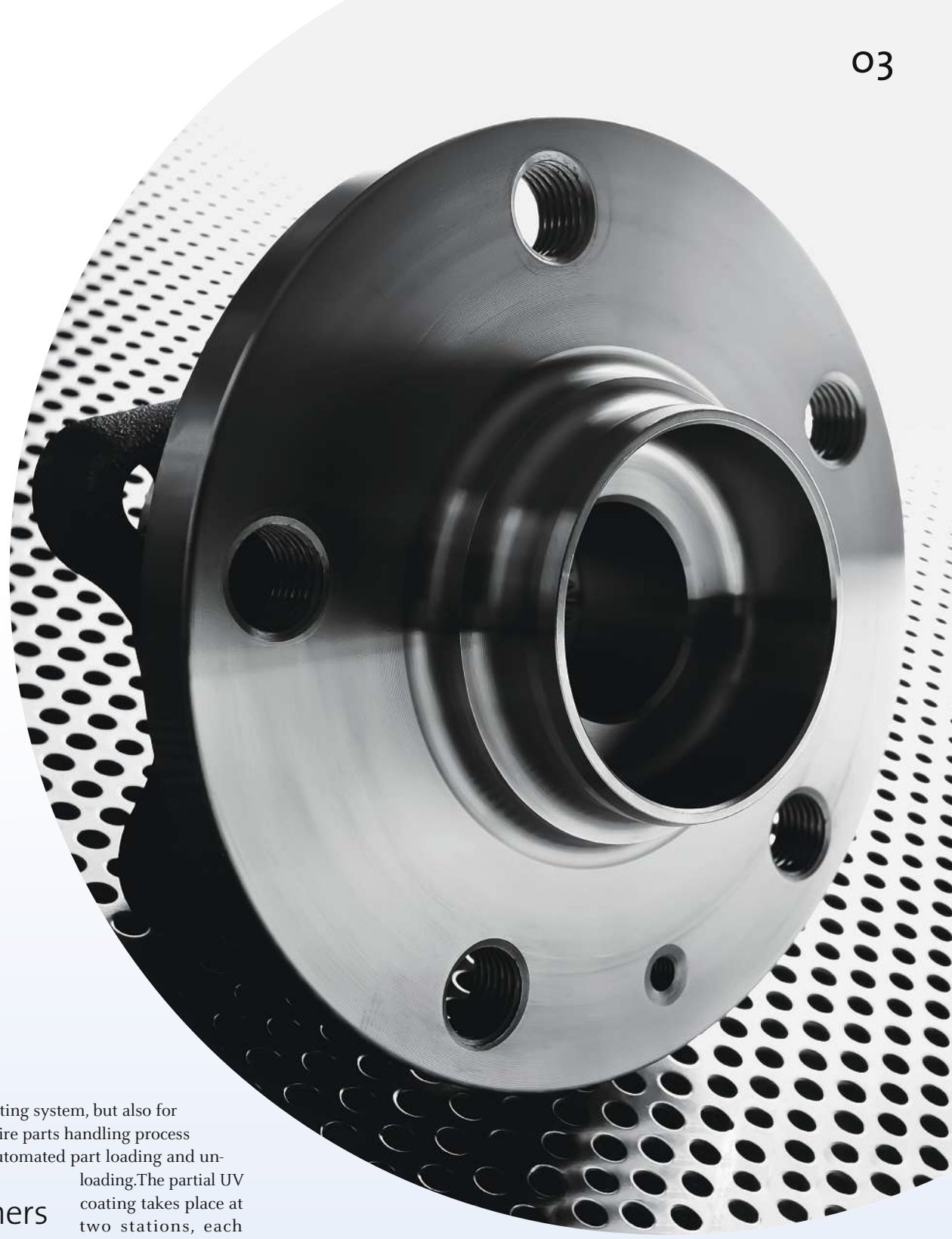
For Bonfiglioli, the cooperation with Sprimag opens up new markets and additional technical synergies, giving Bonfiglioli a competitive edge in the field of aerosol can testing technology. Both parties benefit equally – a real win-win situation.

» **Joachim.Baumann@sprimag.de**

The jointly realized inspection machine projects LRP-30 and LRP-20

Don't lose your *bearings*

Whether zinc flake or UV systems, automatic round table coating machines or chain-on-edge coating machines: With sophisticated application and system technology, Sprimag offers tailored solutions for wheel bearing coating



While coating brake discs is a well-established practice in the automotive industry, more and more wheel bearings are being equipped with anti-corrosion protection these days. The reason for this is the extension of service lives, which means that manufacturers are eager to coat wheel bearings to avoid them from failing prematurely. An increased use of aluminum in automotive manufacturing also means that contact corrosion occurs more frequently, which can be countered with an appropriate coating. And last but not least, aesthetics also play an increasingly important role and can also be used as an argument in favor of coating. Whether to coat wheel bearings and which process to use is both a strategic and economic choice. For example, some OEMs (Original Equipment Manufacturers) are fundamentally set on using 100% rust-free parts, while others only require anti-corrosion protection on certain parts or in certain places. Requirements surrounding the durability of the coating also vary greatly, to the extent that the target values used in the salt spray test fluctuate between 100 and 720 hours. Moreover, there is a difference between a complete and partial coating, which also ends up having an effect on the entire system concept. All of these factors mean that there are now different painting systems on the market for a variety of coating requirements.

One special feature of wheel bearing coating is that no high temperatures can be used in the drying process as this would damage components that have already been fitted. For this reason, either solvent-based zinc flaking systems with comparatively low drying temperatures of between 80 and 120 °C or UV paints are used. Sprimag fulfills these varying requirements with coating systems that are tailored to the process, no matter which system the customer chooses. Over the years, we have implemented compact automatic round table coating machines and powerful chain-on-edge coating machines with complete and partial wheel bearing coating across the world.

> » Our customers particularly appreciate the customized system technology and the support during pre-series production. «
>
> Mark Dekreon

Compact system technology with the automatic round table coating machine

The third automatic round table coating machine for wheel bearing coating for one customer left our assembly hall in Kirchheim over a year ago. For this project, Sprimag was not only responsible for the coating system, but also for the entire parts handling process with automated part loading and unloading.The partial UV coating takes place at two stations, each with two spray guns with the parts rotating. A special paint heating system, which ensures constant temperature control and viscosity, conveys the paint to the spray guns. The UV paint is also dried at two stations within a few seconds. The system allows the parts to be independently rotated at this point during drying. This means that the parameters for the UV hardening can be set independently of the coating parameters.

Two further automatic round table coating machines for wheel bearing coating have been sold to a customer with production sites worldwide. This customer also chose the UV paint coating option. For a coating on all sides, robots are used on the system, which allow partial and complete coating. Furthermore, an integrated paint heating system is also implemented as well as independent part rotation during the UV drying process. Furthermore, the automatic round table coating machines are supplemented by a hot alkaline degreasing system as well as connective automation technology. This means that, alongside the transfer of parts between the cleaning and coating systems, this also ensures automatic connection to the existing material flow.

Proven system technology with the chain-on-edge coating machine

At the moment, Sprimag is realizing two chain-on-edge coating machines for complete coating of driven and non-driven wheel bearings. For both projects, Sprimag is also supplying a hot alkaline degreasing system as well as connective automation technology. Additional drive and pneumatic centering units are implemented for precise positioning of the transport trolleys in order to allow the systems to be securely interacting. Several robots completely coat the wheel bearings while they are rotating. Areas can be left without coating by using the appropriate nozzle technology or automated masking units. Components in wheel bearings, such as seals and lubricants, cannot be subject to high temperature drying processes as are found in the customary zinc flake systems. The implemented solvent-based zinc flake systems only require drying temperatures of 80–120°C . Alongside good anti-corrosion protection, this drying feature is the decisive factor for our customers because the wheel bearing is in its final assembled state. After the cooling zone, a product check, and therefore also a process check, is carried out. The flange to the brake disc side, which has tight tolerances, is measured at many points with a contactless coating thickness measuring system. At the subsequent station, the rotation of the wheel bearing can be adjusted and the diameter of the wheel and brake disc seating is checked. Then a Data Matrix Code and text is applied using inkjet. The positions of the DMC and text are strictly defined and are precisely applied by proper alignment of the part. A DMC testing unit is also integrated into the system to check this step of the process. If deviations are detected, the parts are conveyed to an unloading unit and are then removed manually by the worker. Finally, the parts that pass the test are presented to the worker via a conveyor belt for manual unloading.

Our customers include notable wheel bearing manufacturers that value their working relationship with us not only because of our own Applications Center but also because of our proven system technology and support in pre-series production. At the beginning of each project, extensive testing is carried out in the Sprimag Applications Center in order to determine the relevant process parameters and thus to decide on the customer-specific system design. Alongside process evaluation, small batch samples are also coated for the customer to inspect the quality and also to deliver them to their customers for their pre serial test procedures.

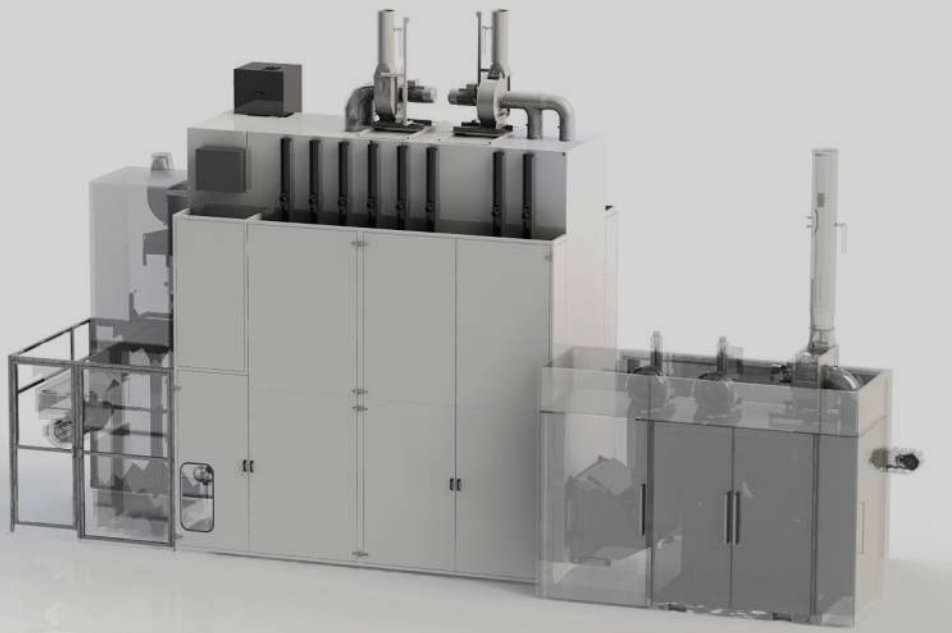
For many OEMs, wheel bearing coating is still an economic consideration. We are catering to the varying needs of our customers by continuously developing our system concepts and, therefore, we offer compact, robust and cost-effective systems with the suitable application technology.

» Mark.Dekreon@sprimag.de

The Data Matrix Code is applied to the wheel bearings using inkjet

PRODUCT ENHANCEMENT

New DIT Drier Generation



The tried-and-tested Sprimag internal drier for cans DIT shines in a new light: The new series of the 2-row internal drier will convince you with a reduced footprint, efficient energy concept and its broad combination possibilities

Ongoing improvement processes with the aim of continuously optimizing machine and system quality form an important part of the Sprimag business strategy. Therefore, it's hardly surprising that Sprimag has even subjected its tried and tested developments, like the internal drier for aerosol cans, or DIT for short, to another worthwhile improvement process. Not only will the Sprimag DIT need less floor space but its energy efficiency has also been improved yet again.

Furthermore, many improvements have resulted in detailed technical solutions. The innovative modular design offers a wide range of combination possibilities. Depending on the requested drying time, the production speed and the diameter range of the can, it will be possible to compose an individual drying concept out of four basic modules.

Henceforth, the DIT series will be offered in designs with common drying times between 7–10 minutes instead of in three parts with only 2-part drying segments like they are now. This has been made possible by exploiting its installation height potential while maintaining the same optimal heat distribution. This has allowed a source of potential heat loss to be eliminated. In future, Sprimag will offer preferred types that will cover all cycle ranges up to 250 cpm.

Alongside our extensive experience in constructing this drier series and the fact that over the last few years we have supplied more than ten systems per year, our consistent implementation of detailed improvements has allowed us to further expand our lead in competitive designs once again. The door locking mechanism has been vastly improved, which means that it will be even easier and safer to open

Safe production process due to monitoring and control systems

and close the driers. Furthermore, the new mechanism creates a perfect seal. In addition, the new drier generation will be equipped with a revised basket transport system. Its significant weight reduction is not the only advantage of this system. The baskets are designed so that no oil can get to the can during the lubrication process using the automatic Sprimag lubrication system. At the same time, the new basket fixation on the transport chain simplifies change procedures during services.

In future, all driers from Sprimag will be equipped with a safety hand rail, which vastly improves safety when inspecting the drier. The basic version at the base price is even equipped with a hand rail on one side with mount fixing points. Sprimag also offers other versions as options with a safety slide rail system or a hand rail that goes all the way around with a safety cage ladder.

Sprimag has particularly focused on increasing operational safety during this process of further development. Double-shaft redirection will allow all chain redirection shaft tensioners to have precise, linear guidance. In addition, the transport chain was further calmed down by an improved combination of weight tensioners and pneumatic tensioning devices.

The air distribution has been optimized even further by implementing a cross-flow fan for distributing drying air. These functional improvements are complemented by additional stainless steel covers at the infeed and outfeed chutes.

For many years, Sprimag has been offering the SESS Energy Saving System for intelligent exhaust air control depending on the operating status. Alongside this and a coherent improvement concept, Sprimag can now offer a new drier generation for aerosol can internal coating systems that fulfill all the requirements associated with safe and energy-efficient operation.

» **Joachim.Baumann@sprimag.de**

The hand rail on one side with mount fixing points brings increased safety

New locking mechanism on the drier doors

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