

Fresh breeze for fan coating

The new Chain-on-Edge Coating Machine to coat rotor bodies for the fan and motor manufacturer ZIEHL-ABEGG meets even complex requirements

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Calendar 2018

Imprint

Dear Reader,

Whether as preparation for the assembly, protection against counterfeiting or as part of Industry 4.0 – product markings are being used for more and more workpieces. Products that are equipped with the latest marking technology offer many advantages. In the event of a recall campaign, for example, the affected items can be narrowed down more precisely and identified thanks to the permanent product ID, which leads to significant cost savings for the manufacturer.

A leading manufacturer in this area is one of our long-standing partners Nill+Ritz who, with their dotpeen marking machines, scribe and laser marking machines or engraving machines, offer both semi- and fully-automatic machines as well as in-line production solutions. To find out how such a marking process proceeds in combination with the coating process for a brake disc and about the advantages offered by the Data Matrix codes, read the section "Strategic partnerships" on page 4.

On page 2, we also show you a current project in which our in-house Applications Center made a significant contribution to the success of the project. For ZIEHL-ABEGG, a manufacturer of fans and motors, Sprimag supplied a new chain system which satisfies even complex coating requirements. With a modified 2K System, the paint supply can now also



Joachim Baumann, Managing Director of Sprimag

effortlessly deal with smaller flow rates.

And last but not least: As an international company, Sprimag operates in many countries. Today, we therefore want to tell you about our current activities in the USA where, thanks to our subsidiary, Sprimag Inc., we have been frequently processing orders for many years.

Enjoy reading!

Joachim Baumann

Sprimag donates € 3,000 to Lebenshilfe Kirchheim e. V.

On December 20th, 2017, Sprimag Spritzmaschinenbau GmbH & Co. KG handed over a € 3,000 donation check to Lebenshilfe Kirchheim e. V., a support service that advocates for the interests of disabled people and their families

Joachim Baumann presented Martin Wirthensohn, the Managing Director of Lebenshilfe Kirchheim e. V., a € 3,000 donation check on December 20th, 2017. The Lebenshilfe Kirchheim support service represents the interests of disabled people and their families in Kirchheim and the surrounding area, with the aim of increased participation and independence. It provides a varied range of services for people with disabilities in the spheres of family, education, work, leisure and housing, with many of these services are based on an integrated level.

As a company with a long history in Kirchheim-Teck, Sprimag aims to further support the work of the Lebenshilfe support service in the region. The aim of the donation is to continue pursuing various special projects – existing and new ones alike – such as the "Geschwistertreff" project which arranges meetings for siblings. Since the beginning of the year, siblings of disabled children from 6 to 12 years old have been able to meet to talk about their experiences and spend time together as part of this project.

"We hope to set a good example and inspire many other donors to support social facilities such as the Lebenshilfe Kirchheim support service," explains Joachim Baumann.

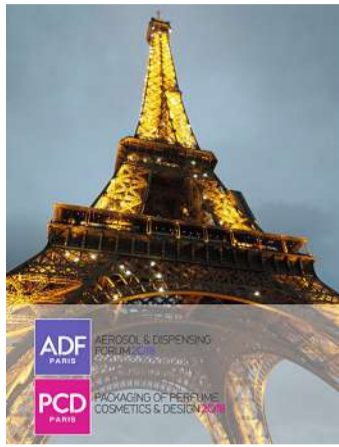


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NEWS

ADF & PCD: Aerosol and packaging trade fair in Paris

From January 31st to February 1st, 2018, the leading experts from the aerosol and cosmetic packaging industry got together at the ADF&PCD event in Paris. The annual trade fair is seen as the leading event in the cosmetic packaging industry and brings together Sprimag's Surface Coating and Internal Coating divisions in perfect unison: One part of the hall focuses on the industry of aerosol can manufacturers and suppliers, while the other half is centered around perfume bottles, packaging and surface finishes for various cosmetic parts. The trade fair achieved record numbers this year with almost 500 exhibitors and more than 7,000 visitors.



In the area of the trade fair dedicated to aerosol cans, visitors showed both interest in Sprimag's well-known internal coating machines and in the new segment of testing machines for aerosol cans with the Leak Detection Machine alongside the Compact Camera Inspection Machine for the final can inspection. There was a great deal of interest in the surface technology area too, since, with its varied machinery concepts for surface coating, Sprimag covers a wide range of different applications. Starting with pretreatment or aftertreatment in metalization processes through to (internal) glass coating for various quantities. One particular trend that came to the fore here was flexible machinery concepts – this was a focal point not least because of the increasing rate of change in this industry and the associated shorter product life cycles.

We are taking a look back at two successful days at the trade fair and are already looking forward to the next event, which will take place in January 2019.

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Fit for the future

Thanks to a range of different modernization techniques, existing systems can be retrofitted to be brought into line with the very latest technology

Though Sprimag coating systems are famed for their longevity, over the years new technical advances or new guidelines make it necessary to regularly update existing systems. It is not always a case of replacing old machines with new straight away. For many years, Sprimag's Customer Care department has been successfully updating coating systems to the latest technical specifications in terms of not only quality, but also productivity and energy efficiency. Offering a wide range of specialist services relating to systems technologies, Sprimag can even manage the entire project coordination for particularly complex systems, if requested. This includes commissioning the system, providing extensive training for operating staff, and even an after-sales service incorporating maintenance, remote maintenance and repair – and more besides. Another benefit that makes this kind of modernization service worthwhile is the fact that the retrofitted components are covered by the same manufacturer guarantee that is applied to a brand new system.

Both internal and surface coating systems can be modernized. Several retrofits were recently carried out on the popular SPRIMATIC series, including Sprimag round table, chain-on-edge and three-axis coating machines, which had been in service for over 20 years. To ensure current safety standards and system availability requirements were still met, it was necessary to replace certain elements of the machines' control, drive and automation components. Since more and more components are being discontinued, however, there is no guarantee that replacement parts can be sourced and that system availability can be maintained. Once the retrofit is complete, the systems once again fulfill the current applicable safety standards prescribed by the Machinery Directive 2006/42/EC. This incorporates risk assessment as well as identifica-

tion of hazards and, in some cases, a risk estimate. The retrofit is subject to the same CE acceptance test as a new machine and is issued with a new CE Declaration or Declaration of Incorporation according to the new Machinery Directive 2006/42/EC.

Further to this, much has been done in the field of usability in recent years, facilitating significant improvements to user-friendliness by means of a new panel. If desired, customers can also take the opportunity to have the system fitted with a convenient remote maintenance unit. In case of a machine breakdown, our service team can analyze the fault remotely via the new router, and remedy the problem straight away or initiate further measures, as appropriate. This can help customers to reduce downtime and save on servicing costs.

By integrating the latest sensors and measuring points as well as the possibility to send data relating to production, machines and operation to ERP and SQL via an OPC server, Sprimag ensures that any system it updates is well equipped for "Industry 4.0" and that every opportunity is available to the system's operator.

In many cases, a retrofit can therefore represent an alternative to a new machine – whether it is a Sprimag internal coating machine or a surface coating machine. Our Service Team is on hand to offer advice.

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The internet-enabled router allows ensures fast service

INTERVIEW

What's new, Sprimag Inc.?

With its subsidiary in Cincinnati (OH), Sprimag has a direct interface to the companies located there, and from there now serves not only the automotive sector but also customers in the field of beverage cans and bottles as well as the aerosol can sector

Over twenty years ago, the US subsidiary Sprimag Inc. was founded in Cincinnati, Ohio to establish Sprimag's coating systems in the North American market. Meanwhile, Sprimag Inc. also serves many customers with facilities in other countries, such as South and Central America or Asia. In the last issue of our Sprimagazine, we presented the country of Mexico, in which many of our customers are based and with whom we maintain extensive economic relations. In this context, of course, the language came again and again to the US, as Mexico's economy is significantly influenced by its economic relationship with the United States. In this issue, we would now like to focus on the US and introduce some of the recent major projects there. Joseph Vanden-Eynden, Managing Director of Sprimag Inc., answered some questions in this context:

The US economy experienced a considerable up-swing, is this also felt in the painting industry?

While the US auto industry is now beginning to come down from prior record-setting sales year, the market is still holding at a very respectable sales level due to the improving financial position of the average American household. Sprimag is continuing to see strong demand for coating lines for automotive components like brake discs and plastic trim parts.

What are the biggest challenges in the US market right now?

There is still some uncertainty in the



Joseph Vanden-Eynden,
Managing Director
of Sprimag Inc.

minds of corporate decision makers, due to the possible renegotiation of the North American Free Trade Agreement (NAFTA). We have seen a "pause" in purchasing in certain import and export sectors, and it is everyone's hope that this get resolved quickly and in the best interest of all the related countries. On a positive note, there was recently a significant reduction in the US corporate tax rates. It will be very interesting to see how this will influence capital spending going forward in 2018.

How has the painting industry evolved in recent years?

One of the biggest drivers in the USA and Canada is air pollution abatement. We have completed several recent projects with customers where we were able to recirculate the spray booth air in order to concentrate the solvents and use just a fraction of the normal amount of exhaust air. This concentrated and fuel-rich

exhaust air was then used to reduce the size and cost of the required air abatement equipment (oxidizer).

What are the biggest trends in coating technologies in the US? What has changed here in the last 5 years?

The painting industry has been developing coating technologies that are being driven by environmental regulations and demand for increased functional performance. More environmentally friendly powder coatings, high-solids coatings, radiation-curable coatings, and water-borne coatings all show promising growth prospects. A similar growth is being seen in the increasingly demanding coatings designed to provide corrosion resistance in under-body parts, and to reduce friction in the internal engine components.

Since 2012 Sprimag Inc. has significantly increased its activities in the field of internal coating systems for tubes and cans. What has changed here in the US market?

The increase in US market activity for Sprimag was jump started by two fortunate opportunities. The first was a large order of machines to be supplied to the US-entirety one of our very good long-term European customers (Ardagh Group). Having a proven history with the EU customer opened the door for this type of transplant business. The second opportunity was more of a technical-driven solution, where Sprimag developed a unique high-speed machine for the chal-

EXCERPT FROM LAST YEAR'S PROJECTS:

» **Federal Mogul, Germany**

Showed the benefit of combining both the Sprimag Germany and Sprimag USA technical resources to produce a fully automatic system that can be globally deployed for the coating of engine cam-shaft bearings.

» **Woodworth Inc., Detroit, Michigan**

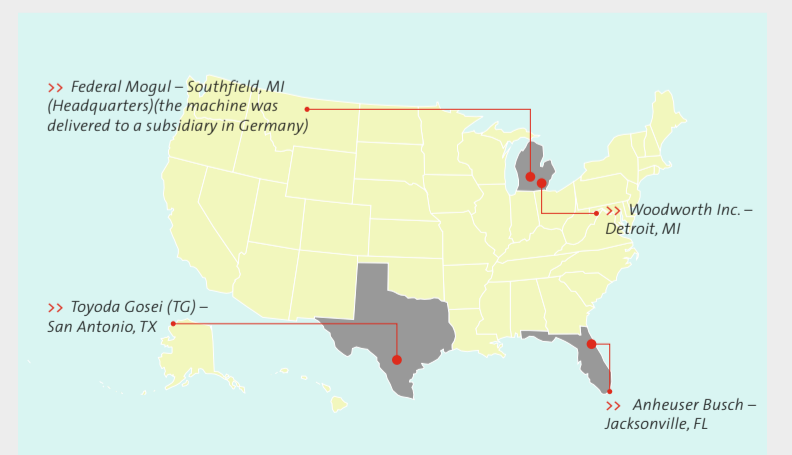
a coating line for the application of corrosion protection coatings on brake discs. The project emphasised the vast experience that Sprimag has developed over the past 30+ years in the field of spraying brake discs.

» **Toyoda Gosei (TG), Texas**

originally intended to be a copy of a similar power-and-free coating line for plastic front grills installed in 2016 for their TG Missouri sister plant; the machine in Texas grew further in scope to include an air-recirculating spray booth, an oxidizer, and a unique implementation of two conveyor elevators in order to double-deck the machine for significant floor space savings.

» **Anheuser Busch, Florida**

this project involved the installation of both HIL-05 inside spray machines for bottle coating and HIL-34 inside spray machines to can coating, resulting in a near side-by-side flexible plant that could spray both cans and/or bottles to suit consumer demand with limited change-over.



lenging application of inside spray coating for new aluminium bottle shapes being produced by Anheuser Busch. The development work also led to consider-

able subsequent orders for other aluminium bottle-producing customers.

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Mixing it up:

New 2K coating system for ZIEHL-ABEGG

Sprimag's new coating system for fan rotor bodies provides a breath of fresh air to fan and motor manufacturer ZIEHL-ABEGG, because its chain system is capable of handling even complex requirements

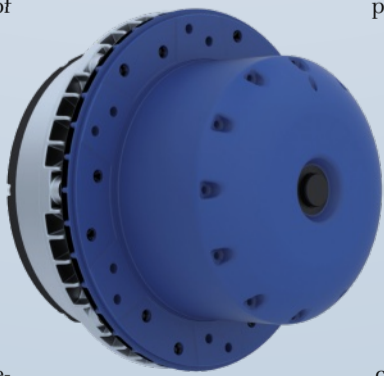


For their client BritNed in Maasvlakte, Netherlands, ZIEHL-ABEGG replaced the fans that cool the converter stations. BritNed is the operator of the high-voltage direct-current cable system that connects Great Britain and the Netherlands via marine power cables. The new fans enable BritNed to reduce their electricity consumption and lower their CO₂ emissions.



Fans have an extensive range of application, including in everyday ventilation, automotive engineering and even in machine and system technology, such as that produced by Sprimag. When it comes to these and many other areas of application, ZIEHL-ABEGG is widely regarded as one of the leading manufacturers of fans and ventilation systems. The increasing global demand for energy-saving fans and rising quality standards have prompted the fan and motor manufacturer to expand its production capacity by means of a new building and additional production facilities. Among the new equipment installed is a Sprimag coating system, which has been coating rotor bodies of energy-saving fans (EC technology*) since the start of 2018.

Sprimag rose to the challenge and, through close collaboration with ZIEHL-ABEGG and a series of trials in the Applications Center, succeeded in meeting even the most complex requirements of the new facility. "The foundations were laid for a trusting working relationship from the very beginning of the project, particularly through an extensive series of initial trials. It was important to us that the system operated a fully dependable coating method that guarantees us maximum process reliability," explains Jürgen Rehauer, Head of Process Planning for EC Fans at ZIEHL-ABEGG. The first challenge to overcome was the spatial requirements, because space was at a premium on this project, especially in terms of height. This gave rise to a compact chain on edge coating system that was in every way a perfect fit for the new ZIEHL-ABEGG production hall. As requested by the customer, the coating system's dry spray station was deliberately positioned facing outwards for the added benefit of easy access for maintenance staff when changing the dry extraction filters for the coating, for instance. A large viewing window at the start of the evaporation zone gives the operator a clear view of the rotor once



coated, meaning the quality of the coating on the parts can always be inspected before the parts move on to the two-stage drying process.

Another requirement of the coating system was that it needed to be able to process a wide range of parts that vary greatly in terms of the size and dimensions of the rotor bodies. As well as large rotors measuring 275 mm in diameter, the system should be capable of coating compact ECblue* rotors with a diameter of just 146 mm. The system is required to coat a total of 23 different types of part.

A number of trial series, conducted in Sprimag's in-house Applications Center, ascertained whether the SprimixII 2K paint supply would be suitable for ZIEHL-ABEGG's purposes. During these trials in the technical center it was initially established that the existing SprimixII 2K paint supply had found its limits: The technology was currently set up for significantly higher flow rates, and so needed to be honed into a new solution. Sprimag rose to the challenge and was ultimately able to adjust the mixing technology to also accommodate low flow rates with ease.

The coating system is integrated in a working environment with two other work stations. Once the shafts have been pressed, the operator places the rotor body on the coating machine's transport system. Once the coating process is complete, an operator conveys the parts to the pick-up station, ready for magnetization. The Sprimag Chain-on-Edge Coating System features a transport system that is ideal for conveying heavy parts weighing over 5 kg. To avoid the need for time-consuming retrofits, a universal retaining chuck is used here, which is suitable for the full range of different parts.

The parts are rotated in the spray station and coated by a coating robot. The transport cart is connected to the spray station by the chain system in operation, ensuring that parts that require only partial coating are coated with precision. Because the industry-wide rise in quality standards leaves no room for

compromise in this area, we drew on our extensive experience and were able to meet the customer's exacting requirements for precision coating of rotor bodies.

The overall ventilation technology was created in consultation with ZIEHL-ABEGG's technical plans for the building design. The objective was to ensure that the air needed for the system is not taken from the hall.

and all the way through to commissioning, we are now in a position to meet ever-growing demand and our own integral quality standards," reports Jürgen Rehauer, who is looking forward to further opportunities to work together.

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» It was important to us that the system operated a fully dependable coating method that guarantees us maximum process reliability «

Jürgen Rehauer

To achieve this, fresh air is taken from outside and the exhaust air from spray booths, paint rooms, evaporation zones, dryers and cooling zones is fed into an air collection system. The requisite fans and automatic throttle valves ensure a smooth connection to the exhaust air system.

Sprimag was on hand offering in-depth advice throughout the entire collaboration. As a result, in the space of just two weeks all 22 coating programs were set up and the operating staff were trained on coating processes and using the Sprimix II. This was possible thanks to the trials conducted in the Applications Center at the very start of the project, which enabled us to adapt our Sprimix II to the customer's requirements and gain experience with the coating system at an early stage in the project.

"Thanks to the excellent partnership with Sprimag, from the trials to the system design and construction

* EC stands for "electronically commutated". This type of motor needs less electricity to operate.



Sprimag's 2K paint supply, Sprimix II, adapted to the customer's requirements, enabling the system to also accommodate low flow rates with ease

STRATEGIC PARTNERSHIP

Brake discs with Data Matrix codes

Nowadays, a Data Matrix code (DMC) is applied to many brake discs once they have been coated: This makes the workpieces clearly identifiable and aids the subsequent assembly process

Though laser marking was once the reserve of high-performance brake discs in the premium sports car sector, it has now become an established practice and is applied to brake discs for a wide variety of automotive manufacturers. Nill+Ritz is a leading system partner for these sophisticated marking systems – whether dot peen markers, scribing machines, laser markers or engraving equipment. The very latest fully and semi-automatic machines are used together with in-line production solutions to mark all manner of components, including not only brake discs but also crankshafts, gears and wheel hubs.

Nill+Ritz has developed a laser-marking system for use in fully automated production lines, which applies a Data Matrix code and alphanumeric plain text to the brake discs for the purposes of clear labeling. This is done in a marking station after the coating process. Not only does this mean the brake discs are always traceable, but it also ensures that the correct brake disc reaches the correct axis during the subsequent assembly at the manufacturer's plant.

for the index hole. This enables the positioning system, controlled by a servo drive, to guide the laser to the precise position for marking. The pneumatically driven lift gates on the inlet and outlet form a light-tight seal around the laser safety cabin and a Data Matrix code and plain text are lasered on to the disc. Once the marking is complete, another camera mounted on the positioning system reads the code and checks the quality of the code in accordance with a defined standard. Once successfully scanned, the brake disc is moved on to the packing station, where it is subject to one final visual check before making its onward journey to one of the many assembly facilities around the world.

How has the market evolved in recent years? What major changes have been witnessed?

The use of lasers in industrial settings is expanding. Operators are utilizing laser technology in a growing number of applications in order to perform individual manufacturing tasks more effectively and efficiently. This trend is also strengthened by the new robust lasers (and laser systems) that are easy-to-integrate into production lines, like the ones on display again at AUTOMATICA. The ISN fiber laser from Nill+Ritz is one such example. Never in the history of laser technology have lasers been as safe and simple to use as they are today. At the same time, there has been a major shift in who is using lasers, with customers now demanding straightforward, hard-wearing lasers that they can easily learn to use.

Mr. Bechtold, how did Nill+Ritz get into the field of lasers?

As a result of growing interest and customer requests for us to supply fully automated laser-marking systems alongside our existing dot peen markers and scribing machines, we made our first foray into the field of laser marking in the early 2000s. One customer put in an order for an existing production line to be fitted with a laser station, including handling systems to position components. Because we weren't producing our own laser markers at that time, we installed a laser that we had bought in. I can still remember it clearly, because the laser did not work. I don't know why, but the laser simply could not be controlled via the interface. Following this experience, we formed a team of four or five employees to work on developing the laser and adapting it to our own marking software, WinCamPro, so that we could fulfill our customer's request to be



able to control the new laser-marking system via the same marking software as the dot peen markers and scribing machines they already had installed.

What does Nill+Ritz do differently when it comes to marking brake discs?

The major selling point of Nill+Ritz is that our solutions are flexible and individual. It starts with the laser we developed ourselves and continues right through to the customized marking software WinCamPro, which guarantees better scalability and free axis configuration. Even when it comes to complex one-off adaptations, as required for brake discs, we have the ideal equipment in the shape of the latest Windows PC controls and integrated cameras, which allow marking technology to be simply and seamlessly integrated into automated production.

Which industries make use of your marking and laser systems?

Our client list reads like a 'Who's Who' of the automotive industry, medical technology, aerospace and mechanical engineering. Germany is our biggest market, though our products are also sold internationally via sales offices, including many European countries, the USA, China, Mexico, Brazil and South Africa.

What future do you see for dot peen marking? Could this soon be replaced by other techniques?

I believe dot peen marking will still have its place in direct part marking (DPM). Dot peen marking is used in the automotive and aerospace industries to apply alphanumeric codes and 2D Data Matrix codes to security-relevant single components and assembly groups. The

key advantages of dot peen marking are the small initial investment and the durable marking of the products, such as on brake discs. Because the indentation is only applied to the surface, it does not damage the products or impair them in any other way.

What is the advantage of machine-readable codes like the Data Matrix code?

The DMC marking allows the manufacturer to trace parts back through the entire production process, as well as through the entire supply chain. The technology is ideal for keeping track of parts that require maintenance or are subject to recalls, and is also useful when dealing with liability or warranty claims. 2D codes allow more information to be stored in a small space using a variety of direct marking methods.



Our interview Partner
Andreas Bechtold, Sales
Manager at the Nill+Ritz
CNC-Technik GmbH

In order to integrate this type of marking system into Sprimag's automatic coating systems, a variety of solutions are available, which are tailored to the specific machine design, output or component. One aspect that is also of critical importance to this integration process is a data interface that ensures the consistency of customer-specific and part-specific production data.

This exemplary laser-marking station is used to perform technically demanding process steps: A brake disc reaches the marking station via a roller conveyor. Because of the short cycle times, the brake disc remains in a location within the laser station that is not precisely defined. A camera, mounted on the third axis positioning system, locates the workpiece, identifies the position and orientation of the hole pattern and looks

ANNIVERSARY

Congratulations!

There will be two anniversaries for Sprimag Application Technology in 2018: This year we will produce the **1,000** diaphragm pump and the **2,000** pressure regulator.



IMPRINT



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Fuchseckstraße 7,
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Picture Credits:
Title: Wang An Q (shutterstock.com)
P. 3 ZIEHL-ABEGG
on the bottom right: Sprimag
P. 4 pictures above: Nill + Ritz
CNC-Technik GmbH
All other: Sprimag

Reproduction and Printing:
GO Druck Media GmbH & Co. KG
Einsteinstraße 12-14
73230 Kirchheim / Teck

CALENDAR 2018

PAINTEXPO

17th – 20th April 2018
Karlsruhe, Germany
Hall 2, Booth No. 2226
www.paintexpo.com

CANNEX & FILEX 2018

15th – 18th May 2018
Guangzhou, China
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spgevents.com/cannex-filex