Dear readers,

The world is marked by movement more acutely now than ever before. This is true not only of people fleeing from war and terror, but also of countries and markets. Coping with fluctuations continues to be a challenge for medium-sized businesses like Sprimag. However, sophisticated interaction between our divisions, continuous development of our tried-and-tested machine concepts, as well as sustained endeavors in specialization and further diversification, have already led to a good, sustainable capacity utilization at the start of the year in spite – or perhaps as a direct result – of this, we will remain committed to supporting the interests of our customers this year and continue to work on our products. A number of large trade fairs, such as the PaintExpo in Karlsruhe, the Cannex in Düsseldorf from 19th to 26th October, and at the K trade fair in Düsseldorf from 19th to 22nd April, will give us the opportunity to present ourselves once again and nurture the exchange we have developed with our customers. Our intensive analysis of customer projects and discussion with customers themselves is also reflected in the Sprimagazine in front of you right now.

Page 1 introduces you to one of our latest innovations from the Application technology division. The new centrifugal gun is perfectly suited to producing coatings with sharp edges. The centrifugal unit was developed as part of a specific customer project. In future, we will be able to use the unit in many more projects that have special coating requirements.

Progress in the development of industry 4.0 demands that our machines and systems are capable of producing usable data for networking and process control, as well as process and quality monitoring. You can find out how this is implemented in practice in modern coating systems on page 2.

Now that the short and gloomy days of winter are behind us, we look forward to giving you a warm welcome at one of our trade fairs.

Until then, I hope you enjoy reading our latest issue of Sprimagazine!

Joachim Baumann, Managing Director of Sprimag
Award-winning design

The Sprimag Hil-94 horizontal internal coating machine was awarded the silver design prize at the 2016 VD Druck World Fair in Düsseldorf. In 2015, the design of the internal coating system for cans, developed jointly by Sprimag and the industrial designer Knut Braake, stood out with its clear, uniform line concept. This was continued in the attached internal coating dryer for cans. The large glass doors enable optimum access and an excellent view of the coating process. A high level of ergonomic operating comfort is achieved with a variable, movable operator control module. As a cross-system, color-coded design element of the doors, an abstractly sprayed yet makes the system’s operations visible. The machine design of the Hil-94 is to be introduced across the entire internal coating system product range.

Sprimag online shop

All parts from the standard range of Sprimag application technology are available nine at shop.sprimag.com. The various spray guns, including the nozzle sets, spare parts and any other coating supply products you need, can all be selected conveniently from your PC. After a one-off registration process, you can log in to your personal memory list at your convenience and send your request directly to Sprimag Customer Care at the click of a mouse. You will then receive a custom quote and can complete your order at any time. The Sprimag online shop has been redesigned using responsive web design guidelines. This means that however you choose to access the Internet, the website will detect whether you are using a computer tablet or smartphone and fit the user interface to the screen.

Process monitoring for quality assurance

To achieve consistent coating quality and to increase the rate of production, Sprimag is increasingly using real-time monitoring of the relevant process parameters.

One reason for the increasing demand for integrated process controls in coating systems is the rise in documentation requirements within the automotive industry. However, coating system owners themselves are keen to monitor, analyze and document coating processes, to ensure consistent production quality, and as such, to reduce rejected parts. So that consistent coating quality and production reliability can be achieved, the complex interactions between system technology, coating material and environmental conditions must be controlled. For this reason, in addition to the already standard process controls, systems to monitor coating thickness, viscosity and flow rate as well as the temperature of parts or coatings are increasingly being used in modern coating systems.

These new systems are also being increasingly used in Sprimag coating systems. In a recently completed coating system for adhesive agent applications, two process control technologies were integrated. A color sensor checks the first coat immediately after application. Following the application of the second coat, the entire coating thickness is measured using a system for contactless coating measurement. Data collected from process controls and the system program are stored in the control system.

Another piece of technology for integrated real-time process monitoring in an anti-friction lacquer coating system is a camera system that checks the quality of the coating. As part of this process, a fluorescent assembly anti-friction lacquer is applied initially, and the coated area is photographed multiple times under UV light. After the pictures are assessed, the operator receives the signal as to whether the part has been coated correctly or not. Process monitoring to maintain a consistent quality of coating is vital, particularly for components from the engine compartment, in order to continue to ensure that the engine will function correctly. The metal parts are pre-warmed before coating to ensure consistent coating quality. Therefore, the temperature of parts is measured and checked directly before the coating process, with any deviations being reported directly to the control system.

Today, the possibilities for monitoring, analyzing and documenting processing processes are very varied. Choosing the right systems from the available plant technology is dependent, among other things, on the function that the coating must perform, quality requirements and also economic aspects. In addition to the integration of process monitoring into a new coating system, existing systems can also be upgradable.

Retrofitting ensures future plant availability

A 15-year-old Sprimag machine used for the internal coating of aluminum tubes has been updated by means of extensive modernization work.

Linhardt GmbH & Co. KG, a packaging manufacturer based in Vochtrich in Bavaria, supplies the pharmaceutical, personal care, food and non-food industries with aluminum and plastic tubes, aerosol cans and other packaging made from these materials, such as pipes, cans or cigar cases.

Roughly 220 million aluminum tubes, cans and pipes, as well as approximately 260 million aerosol cans are manufactured in Vochtrich each year. At present, there are 16 Sprimag machines used for the internal coating of aluminum cans and tubes at the production site. One 15-year-old tube internal coating machine – a Sprimag Hil-42 – should now be fit for future use. “The decision to have the internal coating machine retrofitted was determined by the need to ensure future plant availability and reduce downtime. We also wanted to bring it up to the same technological standard as other internal coating machines that were manufactured more recently. The aim of modernization is also to reduce ongoing maintenance costs in the long term and guarantee the availability of spare parts,” says Stefan Ernst, Maintenance Manager at Linhardt, explaining the reasoning behind their decision.

In addition to converting the HIL-42 internal coating machine, the retrofitt also involved converting the tube annealing oven (TGO) and the tube internal coating dryer (TIT). Since some of the components in the 15-year-old machine had been discontinued, the control, drive and automation components had to be replaced to guarantee the supply of spare parts and continued availability of the plant. Working closely alongside Wago Kontaktechnik, it was possible to retain the existing fieldbus modules, so that only the obsolete PROFIBUS technology had to be replaced with modern PROFINET technology. The control structures were implemented using a safety concept based on Safety Integrated technology. One particular step was very quick, taking just one week to install. Since the Atlas Copco servo technology had already been discontinued some years previously, it was replaced by an up-to-date version manufactured by Baumüller. The control system was also updated, with the Siemens S7 controller now replacing the NPS 85 machine controller. In addition, all the displays were replaced with new HMI displays for more convenient operation.

The full conversion of the internal coating machine and dryer was completed in just three weeks, including recommissioning, training and production support.

“Thanks to close cooperation between Linhardt and Sprimag, the conversion was completed in the shortest time possible. Two of our electricians were on hand to assist Sprimag personnel, which encouraged the exchange of information and helped us keep to the tight schedule,” summarizes Stefan Ernst.

Contact for conversions and retrofitting: » Mark.Gotzmann@sprimag.de

Camera to control the coating quality

Information on whether the parts are ok or not are displayed on a monitor

New Sprimag Webshop for an easy and comfortable inquiry of application technology parts

The comprehensive retrofit includes the renewal of control, drive and automation components

The comprehensive retrofit includes the renewal of control, drive and automation components

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» shop.sprimag.com

NEW PRODUCT

Sprimag online shop

All parts from the standard range of Sprimag application technology are available nine at shop.sprimag.com. The various spray guns, including the nozzle sets, spare parts and any other coating supply products you need, can all be selected conveniently from your PC. After a one-off registration process, you can log in to your personal memory list at your convenience and send your request directly to Sprimag Customer Care at the click of a mouse. You will then receive a custom quote and can complete your order at any time. The Sprimag online shop has been redesigned using responsive web design guidelines. This means that however you choose to access the Internet, the website will detect whether you are using a computer tablet or smartphone and fit the user interface to the screen.

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Comparison of process energy for various types of coating systems.
New machine for growing markets in the beverage can sector

The latest generation of the Sprimag HIL-34, an internal coating machine for beverage cans and tins, is impressive due to its excellent reliability and high production capacity.

The beverage can industry is continuing to grow all over the world. The USA, where the first can went on sale in 1934, remains the largest consumer. In 2014, the European market achieved a considerable growth rate of just short of four percent according to a current market report written by the BCME – Beverage Can Makers Europe. This means that the number of filled beverage cans rose to 63 billion in Europe alone. BCME considers the continued positive development in Eastern European countries such as Hungary and Poland to be one of the factors encouraging the strong growth. But Germany is also experiencing a significant rate of increase: In 2014, the number of filled beverage cans increased sharply by around eight percent here, reaching its current figure of over 3.6 billion. The soft drinks sector in particular expanded by an impressive 22 percent. The continued popularity of energy drinks is one of the key factors in this great upsurge. In contrast, the number of beer cans filled in Germany increased by only 1.1 percent, a growth rate which was achieved by special promotional cans and marketing campaigns.

To allow Sprimag to further improve the services it offers for the growing beverage can market, it developed a new version of the HIL-34 internal coating machine. The new generation was presented at the Metpack trade fair back in 2014. The machine is particularly impressive because of its flexibility, for example it enables beverage cans and tins to be processed on identical basic machines. The modern machine design of the Sprimag HIL-34 was developed together with industrial designer Knut Bräake. The paneling, entirely constructed from stainless steel, is a perfect example of how a sophisticated design can be combined with functionality. The new paneling also ensures that the machine is easier to access. The cover opens upwards in a straight line with pneumatic support, leaving the entire machine interior accessible for cleaning or maintenance work. An automatic opening can also be set in the paneling, for example to provide a visual signal for pre-set cleaning intervals. The first generation of the Sprimag HIL-34 was put on the market back in 1995. Sprimag has therefore been able to collect feedback from customers based on their experience with the machine over the course of two decades and continually further develop and improve the machine. One modification which was implemented in the latest version of the HIL-34 is the fine adjustment of the spray gun’s angular position, for example. This ensures that the position of the gun can be reproduced with precision. Other optimization measures achieved simplified maintenance, reduced maintenance times and increased intervals between maintenance work. To shorten cleaning times too, the spray area and extraction system surfaces which need to be cleaned were designed to be only as large as was absolutely necessary.

For certain applications, the HIL-34 can also be equipped with three instead of two spray guns, thereby lacquer can be saved.

» The flexibility of the machine is a significant advantage. «

Matthias Allar

TECHNICAL DATA OF THE HIL-34:

- Production speed: up to 352 cpm
- Standard diameter: Dmin 52mm, Dmax 85mm
- Standard length: Lmin 85mm, Lmax 180 mm
- Spray guns / spray runs: 2 / 2 times
- Maximum spray run: 3.5 times, 2 / 2 times
- Maximum spray gun: 3 / 3 times, 2 / 2 times