



Functionality meets design

The impressive features of the new internal coating machine HIL-94 for aerosol cans include improved machine performance and optimized maintenance friendliness coupled with a fresh design.

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Knut Braake, Braake Design

Imprint



Joachim Baumann and Philippe Nollet, Managing Directors of Sprimag

Dear Readers,

Spring is in full swing and is bringing many new things this year.

Summer will entail a move for some of our employees: the office building on the neighboring site purchased last year is currently being refurbished and will provide the Design, Development, Sales and Marketing Departments with new offices offering great scope for expansion. A new assembly hall with ample room for future projects is also being built on the site. You can find more information on this topic in the article entitled "New building at Sprimag" on the right.

There is also something new to report on our internal coating machines for tubes and cans. Thanks to the great dedication of our employees, we have extended the portfolio and will be able to present several product innovations simultaneously at Metpack in Essen. The highlight is the HIL-94. The impressive features of the new machine for

interior coating of aerosol cans include improved machine performance and optimized user-friendliness. The external appearance of the machine has also been modernized. Braake, a Stuttgart-based design office, came up with a fresh machine design for this purpose. You can read more in the interview on Page 4.

We hereby cordially invite you to attend Metpack, the meeting-point for the metal packaging industry in Essen. You will be able to see the HIL-94 there exclusively from May 6 to 10, 2014 and also experience the HIL-34 for exterior base coating of drinks cans and the new collapsible tube latexing machine TGA-200.

We look forward to seeing you at Metpack!
Sprimag at Metpack:
Hall 03 Stand A22

Joachim Baumann *Philippe Nollet*
Joachim Baumann Philippe Nollet

New building at Sprimag

Sprimag is investing in the construction of a new assembly hall and the complete refurbishment of an office building.

In June 2013 Sprimag purchased the neighboring site of the insolvent model-making company Graupner. A new assembly hall is currently being constructed on the site, which has an area of around 1.8 hectares. The existing administration building is being completely refurbished. The Mechanical and Electrical Design, Development, and Sales and Marketing Departments will move into the new spacious offices in the middle of the year. The assembly hall (area: over 2,000 m²) will be used in future as a final assembly hall for Sprimag coating machines and will be connected directly to the existing assembly hall.

The newly acquired neighboring site will provide Sprimag with increased capacity in future. However, the complete site is not being used by Sprimag at present. The existing high-bay warehouse containing a logistics area and associated office space has already been rented out to Graupner SJ, the successor company to Graupner, on a long-term basis.

Philippe Nollet, Commercial Director at Sprimag: "We are pleased to be able to use the new opportunities and not only create future prospects for Sprimag as a company, but also offer our employees a modern and attractive place to work."

» bettina.maier-hermann@sprimag.de



The assembly hall with over 2,000 m², will be used as a final assembly hall for Sprimag coating machines.

NEWS + FACTS



Sprimag attracted a record number of visitors to its exhibition stand at K 2013

UV coating at K

Sprimag presented the latest coating solutions for the plastics industry at K, the world's largest trade fair for plastics and rubber, in Düsseldorf. The focal points at this event from October 16 to 23, 2013 were machine concepts for plastics coating using UV technology. The energy-efficient solutions proved very popular with visitors. The large number of discussions concerning the latest trends, specific projects and future visions proved very beneficial to our company. We would like to take this opportunity to thank you once again for your visit.

» marketing@sprimag.de

Modernized sawing center

Sprimag has realized and modernized its fully automatic sawing center, including a bar storage system. The objectives of this investment were to improve the material flow, obtain additional assembly and storage space, and ensure that raw materials for production are supplied more quickly. "Thanks to new hardware and software, we are becoming quicker, more reliable and more user-friendly. The modernization will also minimize downtimes and improve processes significantly" Production Manager, Jochen Quattlender.

» jochen.quattlender@sprimag.de



The modernized sawing center is helping to speed up deliveries of spare parts

Sprimag at PaintExpo

PaintExpo, the 5th Leading Trade Fair for Industrial Coating Technology was held in Karlsruhe from April 8 to 11, 2014. Sprimag was also represented at this important meeting-point for the coating technology industry. We presented a wide range of flexible coating solutions on Stand 2510 in Hall 2. The large numbers of visitors and the positive mood were also reflected on our exhibition stand.

» marketing@sprimag.de

Flexible machine for anti-friction lacquer coating

Sprimag is developing a flexible process solution for coating bearing shells for a customer in the USA.



The compact automatic round-table coating machine enables the anti-friction lacquer to be applied for two different processes

Design a flexible machine to coat bearing shells and also develop and optimize a process for current application methods: This was the order received from one of Sprimag's regular American customers operating globally in the drive technology sector. In order to find an ideal solution, the machine concept was formulated in cooperation with Sprimag Inc. and the customer in the USA. The machine applies the anti-friction lacquer with two different processes. It can be used both to coat large bearing shells for the commercial vehicle sector and for development projects.

The automatic round-table coating machine has a reference diameter of 1,150 millimeters on which 24 spindles are mounted. The parts are placed and removed manually. Designed for operation in the cycle control mode, the machine operator can choose between 1, 2, 3 or 4 cycles. This is necessary, for example, if larger parts are to be coated. The machine demonstrates its flexibility as soon as the parts are fed into the

spraying station. "The machine features two coating strategies. Firstly, the bearing shells can be coated by a rotating extension nozzle and fixed parts, and secondly by a spray gun with a fixed extension and rotating parts," said Mark Dekreon, Sales Manager at Sprimag. A vertical linear unit is attached at the spraying station. Either a spray gun with a rotating extension or a Sprimag S-75 spray gun with an extension nozzle can be attached to this vertical linear unit. When the S-75 spray gun is used, the spindles are driven by friction from belts. "When the coating process is changed from a rotating spray gun to rotating parts, the fixed spindles can be turned by removing the pin and the friction belt is mounted. The spray gun with a rotating nozzle is replaced by the Sprimag S-75 spray gun," said Klaus Künstle, a mechanical designer at Sprimag, explaining the process. And Mark Dekreon added: "This is the ideal solution for the customer's planned application."

The next station in the coating process is the circulating air dryer. This dryer heats the circulating air up to a maximum temperature of 120 degrees Celsius. Since application of the anti-friction lacquer involves a multi-layer structure with pre-heating and intermediate drying, the parts pass through the dryer and the spraying station several times. The operator can adjust this at random on the operating panel - an ideal condition for work in the process development environment.

Thanks to the excellent cooperation and our many years of process experience, we managed to implement an overall machine concept tailored perfectly to the customer's needs. In future the customer will be able to flexibly coat small series and carry out process and development projects.

» Mark.Dekreon@sprimag.de

Screen printing at Sprimag?

The Pico Electronic coats pistons with anti-friction lacquer in the screen printing process

Yes - Sprimag has a screen printing machine, i.e. the Pico Electronic. "Pico" stands for piston coating in this case. Millions of pistons have been coated with the Pico Electronic since 1999. It runs 24 hours a day - frequently in 3-shift mode - at the major piston manufacturers, i.e. Mahle, KS Kolbenschmidt and Federal Mogul.

Screen printing of pistons involves functional coating with anti-friction lacquers. After being applied to the piston, these lacquers prevent them from being attacked when the oil film breaks, thus increasing the reliability of engines. Breakdowns are minimized, especially when the engine is cold. By reducing the gap between the piston and the cylinder, fuel consumption is also improved. The advantages of the screen printing method are that the coating material can be purposefully applied and that no contamination occurs through overspray.

The latest Pico generation has now been delivered. The current "Simotion" drive system was introduced in this case and replaces the old system "Sinumeric FM 357-2".

In conjunction with the converters, the utilized CPU 435 allows a synchronous rotary table for pistons with the hori-

zontal screen movement underneath the fixed squeegee section. The two squeegees - one each for the top land and the piston shaft - were designed with new Festo slides and can now be adapted to

» Thanks to the purposeful application of the coating material, no contamination or overspray occurs. «

Harald Kern

different piston types without a tool. It has long been a matter of course that the pressures in the squeegee cylinders are set reproducibly with proportional

valves. This is also true of the management system for recipes, which can save the parameters of up to 150 different pistons.

The spectrum for diameters of aluminum extends from 53 to 150 millimeters. Reinforced bearings were developed for steel pistons. These bearings must have a minimum diameter of 70 millimeters, but can support pistons weighing 5 kilograms.

The machine is operated via a swiveling desk with which the operator can move to his required position. Loading takes place either manually or automatically via a robot.

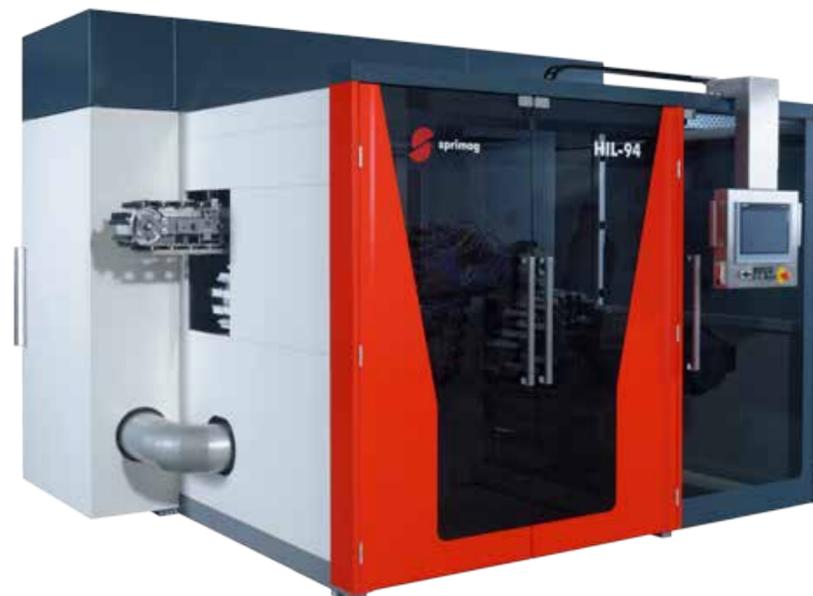
With a large number of already realized options, the machine can be adapted to your needs.

» Harald.Kern@Sprimag.de



The two squeegees can be fully adapted to the different piston types without a tool.

Striking exterior appearance: design and functionality merge to form a unit thanks to smooth lines and a clear view of the work area.



HIL-94 – an evolution for the next success story

A success story comes to an end and a new one starts straightaway. After eleven years successfully marketing the HIL-64, the company's most important internal coating machine for aerosol cans, Sprimag will present a successor machine with the type designation HIL-94 right on time for Metpack 2014. Since the internal coating machine and the internal coating dryer form a homogeneous unit, both products were systematically improved at the same time.

In the last few weeks, the first spontaneous question was frequently asked by customers who were already acquainted with the machine: "Why HIL-94 in particular?" The Sprimag nomenclature was reorganized together with this machine. As has been the custom with internal coating machines for several decades, this nomenclature always comprised the term HIL (standing for Horizontale Innenlackiermaschine = "horizontal internal coating machine") and a rather random two-digit number. In future, the first number 9 will therefore be used as a prefix for all high-speed wet coating machines in the aerosol can segment.

The technical features and innovations in the HIL-94 are naturally far more exciting than the type designation. Just like its predecessor, the HIL-94 will be based on triple-coating in a triple cycle. In order to meet the important development goal of a machine speed of up to



Two or three rows in the internal coating dryer in future: The newly developed, dirt-resistant equalization distribution drum permits new dryer combinations.

300 cycles/minute, the central bearing system was completely redesigned. Special attention was paid in this respect to a solid mechanical design coupled with freedom from vibrations. The entire mechanics have also been much better protected against overspray of internal coatings containing solvents, a process that

» This spray gun will offer other advantages in terms of its operating weight, fixing and operability. «

Joachim Baumann

cannot be completely excluded. With regard to overspray, the previous exhaust unit was also thoroughly tested together with scientists from Stuttgart University, who possess deep experience in this field. Based on this, test attempts were made to derive further improvements. In particular, the exhaust hood of the HIL-94 was therefore optimized from fluid mechanics aspects.

The machine rear power unit room now contains all drive components such as servo motors and gearboxes, but also valve clusters and the entire pneumatics for the spray gun control unit. In order to keep this room clean in future, full wet coat separation, exhaust piping and the prefilter unit were redesigned and the prefilter unit was moved to the machine infeed area. Together with optimized exhaust performance, shorter cleaning times will be guaranteed in future.

Sprimag has been continuously cultivating and extending its leading edge in the area of coating and application technology for decades. Sprimag is characterized, in particular, by its extensive range of spray guns for every application. Therefore the company developed a new spray gun that was optimized for internal coating needs in connection with the new HIL-94. In future, this spray gun will offer other advantages in terms of its operating weight, fixing and operability. This innovation is also accompanied by the completely new activation of the spray guns from the operating panel. In future, the spray guns will be selected via three proportional valves in process-oriented groups of three and the values for the coating air will be stipulated.

However, the ease of operation of the machine has not only been significantly improved through this feature. The operating panel itself with its 15" touch screen will be fixed in future on linear ball bearing guide rails and can be moved to different positions over the entire front of the machine.

One major technical innovation is the completely redesigned distribution drum at the outfeed of the internal coating machine in the transfer area to the internal coating dryer. Whereas the machine infeed with the two customer-specific variants of the vacuum infeed drum or alternatively a vacuum transfer drum was adopted from the predecessor machine, a new equalization distribution drum (AVT) was developed. The main stipulation here was to offer customers a dirt-resistant solution in future. The basic principle in future will comprise two cylindrical cams which, with their internal cam tracks, will ensure linear movement of the transfer drum carrier. The necessary swinging movement will also be triggered via dirt-protected levers. The AVT itself will be integrated in future in a self-supporting frame with main bearings on both sides. This will create additional advantages in the installation of

the machine and for subsequent maintenance work. The design is configured in such a way that two variants of internal coating dryers can be placed downstream in future.

In addition to a double-row internal coating dryer variant, Sprimag will therefore focus more closely in future on triple-row dryers. Sprimag believes that this offers other opportunities to bring its many years of experience with triple-row dryers into line with customers' demands for higher speeds and space-saving solutions coupled with energy efficiency and ease of maintenance. The next issue of "Sprimagazin" will contain more information on all the innovations in the internal coating dryer segment.

After all the above-mentioned technical innovations, it only remains to mention the most obvious aspects. Along with all the technical improvements, one of the stated development goals was to combine industrial design with functionality in the HIL-94. Together with the renowned industrial designer Knut Braake from Stuttgart (please also refer in this respect to the interview on Page 4), Sprimag has already started to follow this course with the HIL-34 internal coating machine for beverage cans and has now continued it with the HIL-94. All machines in the HIL series will show their affiliation with a product family in future. However, design was only the means to an end. A large number of functional aspects were included in the new solutions for the suspension of the operating panel, accessibility to the machine and the door handle haptics. The internal coating machine was also combined with its related dryer to form a single unit.

Everybody at Sprimag is now eagerly awaiting the reactions by customers during the official presentation on the exhibition stand at METPACK. Sprimag is extremely confident that METPACK 2014 will be the start of another success story.

» joachim.baumann@sprimag.de



Exhaust performance was optimized through scientific support: Overspray is extracted and fed directly out of the machine room.



Cleared up components and free access for maintenance work: Moving the exhaust unit creates space and cleanliness.



A moving front panel and direct electropneumatic control of the spray guns increase ease of operation.

“The customer is the focal point in design development”

Knut Braake, Braake Design



Every machine operator can individually adjust the height of the new operating quickly and easily.

Braake Design in Stuttgart formulated a design concept during the development of new machines for internal coating of tubes and cans. The close cooperation between designers and Sprimag's design engineers produced a modern machine design which has positive effects on operability. Interview today with Knut Braake, Braake Design Stuttgart:

What does design mean to you?

We primarily handle design developments for the mechanical engineering and plant construction industry. The variety of the design tasks is the special challenge here. I am still motivated by the range of tasks whose variety and difference are probably only found in this area of industrial design. It is always fascinating to link formal design with technical, safety-related and emotional aspects which flow into a new successful product. I also find it extremely interesting to develop products in entirely different industries. This extends from professional tools through to large production systems in the plastics industry or the paper processing industry. In every area there are other key aspects which have to be

integrated in our design developments. Exciting and appealing.

Is design also not always a question of taste?

Of course, design also always appeals to people at an emotional level. We are all surrounded by products and habitats which are designed. We experience our environment with different preferences, experiences and influences. We derive our view of products from them.

This creates an interaction between rationally objective conditions and the culturally influenced subjective expectations and perceptions of users.

Professional industrial design, especially in the capital goods sector, must take account of these influences and transfer them to valid long-term product design which ignores short-lived fashionable trends.

In your opinion, why is industrial design so important for companies?

A designed product shows at first glance the quality and innovation of the technical function of a product and the company brand. In the mechanical engineering and plant construction industry the product (the machine) is primarily

the long-term factor which creates the connection with a company brand and makes people perceive a company in a positive light. Design must distinguish a product from other rival products in order to counter the technological interchangeability of products.

Why do customers profit from a designed machine?

In addition to having an attractive external appearance, a designed machine is easier and safer to operate. When developing a design, it is also our aim to include potential customers and operators. What does the purchaser of a machine want? Where does the future customer see potential for optimization? A designed machine is always carefully designed as a whole and integrates new materials, convenience and safety requirements.

A well-designed and easy-to-operate machine also has a positive effect on employees and customers. The machine is handled more carefully, thus maintaining its value.

And finally, a new product should also look new. A company demonstrates its technological leadership with a designed machine.

How did the cooperation with Sprimag start?

Sprimag contacted Braake Design in April 2013 with a request to develop the design for the new HIL-34. In close cooperation with the Marketing Department, Design Department and the Board of Management of Sprimag, we developed different design concepts from which the current design for the HIL-34 was selected and improved in detail.

The HIL-34 is an outstanding product in the industry and showed the new and striking design elements of the Sprimag brand for the first time. The latest development is now the HIL-94 which will be premiered at the trade fair Metpack 2014.

What the main changes in the new design of the Sprimag HIL-34 and HIL-94 machines?

One main factor in our design development was to maintain the recognizability of the machine as a Sprimag product. This means that we deliberately dispensed with a revolutionary redesign and developed a calm, forward-looking design language which includes elements of existing machines.

Where possible, cubic machine structures were combined with arched areas, thus producing an exciting design contrast. We also reduced and simplified the number and variants of the operating elements and controls in all machines. The purpose of the higher proportion of mineral glass panels is to make it easier to clean the machines. Thanks to the new linear movable and height-adjustable operating panel in the HIL-94, we were able to optimize the operation of the machine.

A “spray jet”, which shows the core function of the machine in abstract form, is visualized at the window areas of the operating zones as a new and striking design element.

We therefore obtain a consistent appearance of Sprimag's machines which can be recognized straightaway as Sprimag products, irrespective of customer-specific colors.

How has industrial design changed in the last few years and what form will industrial design take in future?

Industrial design has also made positive inroads into industries such as mechanical engineering and plant construction which have traditionally ignored product design. This clearly shows that design has become an integral factor for competitive success. Just like developments in the automotive sector, all areas of a machine will be examined during design development in future. Intuitive operating concepts, easy and thus cost-effective assembly solutions, as well as new materials will be integrated in design development.

Industrial design in future will consider the higher expectations of customers and will take more account of factors such as operability, conservation of resources, safety and internationality.



OUR INTERVIEW PARTNER

KNUT BRAAKE

Knut Braake studied architecture and industrial design at Hanover Technical University and Folkwang University of Arts in Essen where he graduated in 1992 with distinction.

After working as a salaried designer and project manager in industrial enterprises and design offices, he managed the office bgp design in Stuttgart from 1997 onwards as the co-owner. This company won a large number of awards for its design developments.

In 2011 he founded the office Braake Design Stuttgart whose main task is to develop design solutions for technically complex products, especially in the capital goods industry. In the last year alone, this company won nine international design prizes.

Knut Braake has also been appointed several times as a lecturer in industrial design at Schwäbisch Gmünd University of Design and as a co-examiner at Pforzheim University of Design.

He is a member of the iF forum, Hanover, and aed (architecture engineering design) in Stuttgart.

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Sprimag
Spritzmaschinenbau GmbH & Co. KG
Henriettenstrasse 90
73230 Kirchheim/Teck
Telephone: +49 (0) 7021 579-0
Fax: +49 (0) 7021 41760
info@sprimag.de

Managing Editor:
Bettina Maier-Hermann
(Responsible for content)

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pr+co GmbH,
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SHORT COMPANY PROFILE BRAAKE

Based in Stuttgart, Braake Design is a design office specializing in technologically ambitious and complex design developments. It is a partner for innovative industrial design with the emphasis on the capital goods industry. Braake Design handles, for example, projects in the fol-

lowing industries: Mechanical engineering and plant construction, tool technology, sanitary engineering, laboratory equipment and medical technology.

For more information on Braake Design and references, visit the website: www.braake.com

HIL-34 was designed by Braake Design

