The Hot Spot Solution

DispensingCell – the new entry-level solution for challenging thermal management applications

The application of paste-like thermally conductive media often turns out to be a bottleneck in production. Since the used materials are primarily characterized by high viscosity and a high proportion of abrasive fillers, one has to consider an optimized system design for those applications.

In order to meet the market demands for quickly available entry-level solutions for thermal management applications, Scheugenpflug developed a comprehensive solution which has been precisely tailored to this task. The new DispensingCell serves as a fully pre-configured and parameterized dispensing and potting cell. Even before delivery, it is adjusted to tested and released 1C and 2C thermally conductive materials by renowned manufacturers.

Quick production launch thanks to Plug and Produce

Based on the Scheugenpflug modular system, the DispensingCell is manufactured with standardized system modules. Apart from the high quality of the components, users especially benefit from the system being available on short notice. Thanks to Plug and Produce, the cell also guarantees a quick production launch.

Complete package consisting of powerful single components

Depending on the demands, the DispensingCell is available in three sizes. The single system components can be precisely adjusted to the requested performance, the required dispensing range and the tested potting medium. Kanban and lean production provide the basis for short delivery times and an excellent price-performance ratio.

In order to enable high dispensing speed, the system is equipped with the Dos P016 TCA, a piston dispensing system optimized for highly viscous and abrasive materials. Compared to the standard Dos P model, this system can dispense up to three times faster. The material feed to the dispenser is managed by the proven cartridge expulsion unit A90 C, which is available in four variants for Semco and Euro cartridges.

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Generation Change at Scheugenpflug: Erich Scheugenpflug Initiates Succession Plan

To set the tracks for the ongoing corporate success, Erich Scheugenpflug restructured the management of Scheugenpflug AG.

As of April 1, 2017, Christian Ostermeier (37), previous Head of Sales and Marketing, is the new Member of the Managing Board of the company. With that, he supplements the existing Member of the Managing Board, Johann Gerneth (52). The former CEO, Erich Scheugenpflug (56), switched from the Managing Board to the Supervisory Board, where he joins three experienced representatives of the German large-scale industry as new Chairman of the Supervisory Board. From there, he will keep an eye on the future development of the company.

A strong signal of continuity
"After more than 25 years of successful development work, I finally decided to hand over the management of the company to the next generation," explains Erich Scheugenpflug. "With Mr. Gerneth and Mr. Ostermeier as the new executive team, the company is in the best hands. The succession plan sets a strong signal for continuity and stability as well - both for our employees and our customers."

Prior to his change into the Supervisory Board, Erich Scheugenpflug was at the head of Scheugenpflug AG for 27 years. With the establishment of the Chinese subsidiary and the conversion to a public company (German AG) in 2003, the company founder provided the basis for the further internationalization of the company early on. In 2007 and 2016, further subsidiaries were founded in the US and Mexico, respectively. Currently, there are more than 450 people employed at Scheugenpflug worldwide.

Focusing on further growth
First and foremost, both Members of the Managing Board, Johann Gerneth and Christian Ostermeier, will create the necessary framework for future growth and advance the internationalization of the company. Through the development of new locations as well as the expansion of the production capacities of existing subsidiaries, the strong market position of Scheugenpflug is supposed to be expanded even more in the future.

Cost-Saving and Absolutely Process Reliable

The cartridge expulsion unit A90 C is the system of choice when the material feed is handled through commercial standard cartridges.

The new model of this feeding unit, the launch of which is planned for fall 2017, will feature a vacuum docking function. It allows for a fully automated degassing during cartridge changes and thus ensures a 100 % bubble-free docking process.

When realizing the new function, the challenge was to prevent the introduction of dispensing material into the ejector, which generates the necessary negative pressure for the degassing process. Specifically for this purpose, Scheugenpflug developed a patented docking shell with an integrated filter.

Material waste reduced by up to 90 %
Vacuum docking not only offers absolute process reliability, compared to manual degassing. Users also profit from a significant material waste reduction of up to 90 % per cartridge change – and thus from considerable cost savings.

Cross section of the new, patented docking shell
In order to facilitate the operation with the proven A90 C material feeding system, Scheugenpflug enhanced its previous model. Not only does the new A90 C excel through an improved operability, it is also shorter and lighter than its predecessor. The weight reduction amounts to a whole kilogram in the case of a 20 oz-cartridge unit.

In order to allow a more facilitated filling level control, a digital display has been integrated that indicates the current filling level of the cartridge when it is almost empty (< 30 mm) by means of variously colored LEDs. The facilitated cartridge exchange, which can now be performed with only little effort, contributes to the overall operating comfort as well.

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A dispensing system is only as good as the employed preparation or feeding system. For highly viscous, non-abrasive potting media, a new, compact entry-level solution is now available.

The A220 Basic enables a bubble-free feed of highly viscous, non-abrasive potting materials. In addition to focusing on the functions needed for the feeding process, the system excels through facilitated control and an attractive price-performance ratio.

Just like its big A220 sister system, the new A220 Basic is equipped with a reciprocating pump. Since material is delivered during both the upward and downward stroke, the pump ensures reliable and continuous material feed. The patented Scheugenpflug vacuum follower plate enables a clean and bubble-free docking process. It is made of polypropylene (PP) and is disposed of together with the empty hobbock after the feeding process, which prevents the transfer of residual material. The docking process is performed manually by means of a two-hand circuit and can be monitored with a visual check via the pressure gauge.

All process-relevant data in view

The A220 Basic has an integrated filling level control unit and an electro-pneumatic pressure control unit, the latter of which makes elaborate readjustments to the feeding pressure by the operator redundant. Both units contribute to the high process reliability of the new feeding system. The A220 Basic is controlled via the proven Scheugenpflug SCP200, which facilitates monitoring, maintenance and analysis tasks while supporting the operator during a flawless and quick feeding process.

Material feed on a solid basis

Process reliable and cost-effective – the new A220 Basic offers an economical entry into the material feed of highly viscous media.

(Adam Cerek, Sales)
The requests of the tier 1 automotive customer were ambitious: They required a fully equipped dispensing and potting cell to be integrated into their production line. The available space amounted to less than one square meter only, however. Scheugenpflug devised the optimal solution.

The assignment was to design a cell for the application of a highly viscous and rather abrasive 2C thermal interface material onto automotive control units. Apart from a compact layout (footprint < 1 m²), the customer strongly emphasized the need for a cycle time of 9.5 seconds. They additionally requested a large enough dispensing range, the installation of extensive sensor technology for position and quality control as well as the integration of a belt and return conveyor. Immediately adjacent system modules in the production line complicated matters, since they only allowed the cell to be accessed from one side.

“In the 27 years of our market activity, we successfully realized more than 5,000 customer projects. However, despite our extensive pool of experience, this project was a real challenge for us,” states Marco Murgia, Sales Manager at Scheugenpflug. “But we want to take the opportunity to grow with challenging projects. Because everybody can do simple.”

Small footprint, peak performance
The realized cell is based on the standardized system units of the Scheugenpflug modular system. This system is oriented towards the platform strategies of the automotive industry and offers the highest flexibility to users, all the while featuring short delivery times and an attractive price. Even in the case of spatially limited production environments, the modules allow for a custom-tailored and appropriate system design, fit for the respective application.

In order to guarantee a smooth integration into the customer’s fully automated production environment, a standard multifunctional CNC cell was downscaled to a size of 800 x 1,000 mm (W x D). The operating panel is already included within these dimensions. To achieve the required dispensing range, the rugged portal axis system, which has been designed for high quantities, was rotated by 90°. Not only did this move free up space for the installation of the requested sensor technology but it also allowed for the installation of the belt conveyor for the 240 x 240 mm workpiece carrier. Additional space could be saved by positioning the return conveyor beneath the actual dispensing chamber. The employed operator software UVIS provides a facilitated and intuitive control, while the innovative CAD/CAM interface enables an easy programming of the dispensing contour. Apart from the fully automated scales and the proven needle measurement unit, high process reliability is guaranteed by object sensors for component recognition and position detection.

Optimized for abrasive media
To be able to meet the requirement of short cycle times, the compact CNC cell was equipped with the Dos P016 TCA, a piston dispenser specifically optimized for the application of thermally conductive materials. It can apply up to three times faster at consistently high application accuracy.
Internationalization is a vital factor for sustainable company success. For this reason, Scheugenpflug brought EP-TeQ on board as a new and competent sales partner.

The company, which is located in Skanderborg, Denmark, is responsible for the distribution of Scheugenpflug systems and components in Denmark, Sweden, Norway, Finland, Iceland and in the Baltic States. They will also handle service tasks and the spare parts supply.

**Broad product portfolio**

EP-TeQ A/S was founded in 2004 and has been active as a distributor for machines and software for the electrical and electronics industry ever since. Apart from sales partnerships with numerous notable businesses, the company also supports its customers during process planning and systems configuration. Among other things, the product and service range of EP-TeQ covers solutions for the design and testing of electronic components, a broad spectrum of systems for electronics manufacturing as well as equipment and tools for process monitoring and quality control. Even training offers with regard to the operation and maintenance of the corresponding systems are part of the company's portfolio.

“We are very pleased to be chosen as sales partner of Scheugenpflug,” says Lars Kongsted-Jensen, Director of EP-TeQ. “Their adhesive bonding, dispensing and potting solutions offer first-class results and top performance to several customers in our area already. They are a perfect match to our already extensive product portfolio.”

Learn more about EP-TeQ at [www.ep-teq.com](http://www.ep-teq.com)
Preparation and Feeding of Media
Directly to the Dispenser

In 2015, the barrel agitator station has been developed especially for applications with high material consumption. It enables the comprehensive processing of self-leveling casting resins from large containers.

Apart from homogenizing and tempering of the potting medium, the system offers the opportunity to fully evacuate 200-liter barrels. With that, even moisture-sensitive media like PU can be processed reliably.

A new variant of the barrel agitator station will be available to customers from fall 2017 onwards. Not only does this system allow for a bubble-free preparation of self-leveling media, it is also able to directly feed the potting material to the dispenser without the need for an interconnected material preparation system. Especially for applications with a high material consumption and – compared to vacuum potting – lower demands to preparation quality, the new model represents both a cost-effective and process reliable alternative to the currently available systems.

Battery Potting with Peak Performance

Several sources predicted the victory march of electromobility for the near future already. There could be more electric vehicles on German roads than cars with conventional drives for the first time in 2028 already.

Efficient adhesive bonding, dispensing and potting technology ranks among the key enablers for the economical series production of batteries – and with that for the mega trend of e-mobility as well. By customer order, Scheugenpflug developed a volumetric high-performance dispenser for potting of e-car batteries which has been precisely tailored to this market’s demands. It enables top flow rates – even when processing very abrasive and paste-like potting media.

In the course of dispensing tests with a highly viscous potting material (100,000 mPa-s), this prototype was able to achieve a dispensing rate of 20 ml/s. The accuracy amounted to ≤ 3 % and therefore met the customer’s specifications. Based on Scheugenpflug’s proven volumetric piston dispensers, this high pressure dispenser, too, offers unparalleled service life when processing paste-like and abrasive media.

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