

INNOVATIV 2 | 2019

Company founder celebrates 80th birthday
New lifting column HS SL
BTS with RFID equipment

Dear readers,

More than half of the year has already passed, and we can look back on eventful and dynamic months.

In the first half of 2019, we manufactured an impressive number of process machines again. Among them were numerous large-scale projects with granulation, blending and coating systems. Many of these systems have already been delivered to our customers all over the world. They are in daily production use. We would like to take this opportunity to thank you for your confidence and are eager to reciprocate this with reliability, high quality and adherence to delivery dates. The second half of the year also promises to be an extremely intensive time for the entire Bohle team. Various individual and system solutions are designed and being built for you.

Over the past few months, we have seen an increase in demand for ever more complex solutions, accompanied by a greater need for us to act as a total solution provider.

As executive directors of L.B. Bohle Maschinen + Verfahren GmbH, we can rightfully point to our first-class and, above all, extensive product range. From weighing, via wet and dry granulation, milling and screening machines, blending processes and film coating applications, to extensive applications for tablet handling, we offer machines and processes for your solids production or the manufacture of food-related products.

The list clearly shows that we are able to design and successfully install the system required for your application. And this not only holds true for batch processes, but also for continuous manufacturing.

Two test and development centers, the Service Center and the Technology Center,



are at your disposal at our headquarters in Ennigerloh for trials or for optimizing your processes. The Service Center houses a complete pharmaceutical solids production facility with modern machinery. Our Technology Center is dedicated exclusively to continuous manufacturing. The modular QbCon® pilot system enables continuous manufacturing of powder, direct compression, wet or dry granulation and coated tablets. We invite you to visit us and test our machines and processes to optimize your success with our support.

At the leading trade fair Interphex in New York in April, we presented our portfolio for the first time together with our partner Korsch AG under the slogan "Your Process in Mind". As in previous years at Interpack or Achema, the presentation was a great success. The joint exhibition booth attracted greater attention and we

were pleased to reach even more customers and potential buyers. The PMEC in India in November will be the next big trade fair at which we will jointly present. We look forward to your visit at our booth 11.A21.

Our aim is to be a competent partner not only at trade fairs. Due to our worldwide presence with more than 40 subsidiaries and sales partners, we always make sure that our sales, service and spare parts departments are close by in order to achieve optimum results for you.

Dear readers, we are looking forward to further trustful cooperation in numerous projects so that we can continue to contribute to your success with our machines, processes and innovations.

Best regards
Tim Remmert, Thorsten Wesselmann
Executive Directors

Lorenz Bohle Celebrates 80th Birthday

Courageous Entrepreneur Founded the Globally Successful Pharmaceutical Special Machine Building Company in 1981

On 12 August 2019, the company founder Lorenz Bohle celebrated his 80th birthday.

Lorenz Bohle, who was born in the Sauerland region of Germany, completed an apprenticeship as a machine fitter after graduating from high school in Brilon and then studied engineering in Kassel, where his passion for the still new science of process engineering was sparked. In 1972, he joined Rottendorf Pharma GmbH in Ennigerloh as Technical Manager, where he gained important experience in the production of pharmaceuticals.

More than 40 patented machines and processes

In 1981, Lorenz Bohle started his own development and design office with a small workshop. The first successful product was the tablet checker KA, a modern form of



Lorenz Bohle: Even at the age of 80, Lorenz Bohle is still full of zest for action. Many years of process experience and visions regularly bring about new patents.

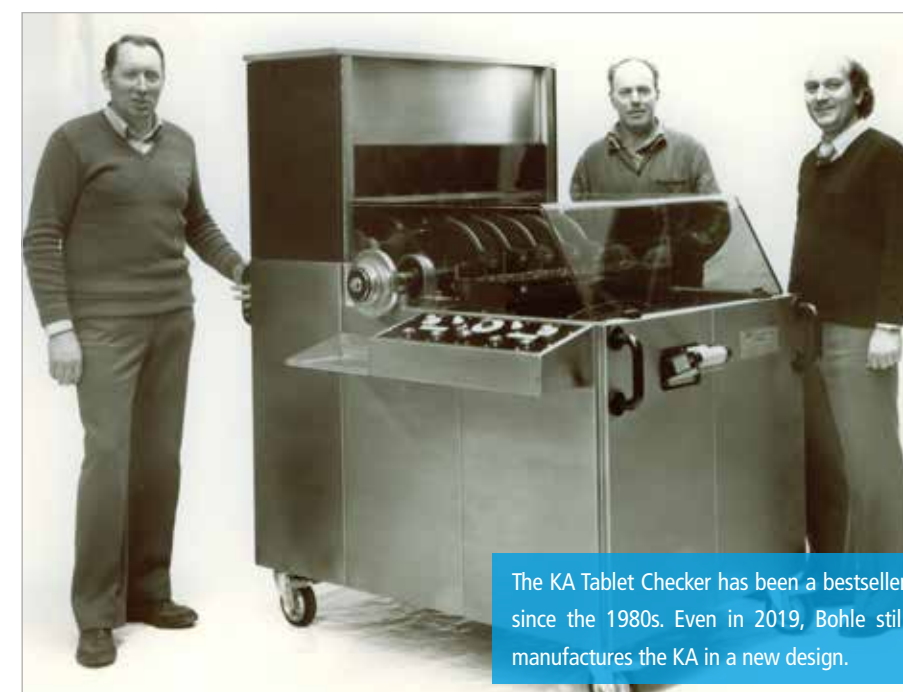
which is still on the market. Over the years, Lorenz Bohle and his team have developed

more than 40 patented machines and processes for pharmaceutical manufacturing. The blenders and coaters became international bestsellers.

Over the past few years, Lorenz Bohle concentrated his efforts on the research and development of continuous processes and advanced the further development of the QbCon® series until it successfully entered the market.

Future secured

At the beginning of 2017 Lorenz Bohle handed over the daily operations of the business to Managing Directors Tim Remmert (Sales) and Thorsten Wesselmann (Technology). The founder and owner became Chairman of the Advisory Board but continues to actively support the company's development.



The KA Tablet Checker has been a bestseller since the 1980s. Even in 2019, Bohle still manufactures the KA in a new design.

Agent Meeting in Spring

Experts from All Over the World Gather Information

This year, the two-day meeting focused on practical presentations and lectures on the extensive product range for batch and continuous processes. "Our high-tech products require extensive review. Our agents can only communicate the USP if they understand the technology," Tim Remmert continued. "The mutual exchange of experiences among the agents is always very important, too."

Sales growth through larger network

In the course of globalization and the worldwide interdependence on economic and production processes, L.B. Bohle's global agent network has also grown in recent

years. On all continents, customers will find competent contacts who will provide information about the product portfolio and support them during the project phase. "I still remember the first few years when we welcomed ten agents here. Now there are more than sixty," said Lorenz Bohle, Chairman of the Advisory Board, proud of the company's development. "This clearly shows that we have evolved from a special machine manufacturer operating in a niche to a globally recognized brand serving the world's major pharmaceutical companies." The larger network lays the foundation for further sales growth in the coming years.



The Manager Scientific Operations Dr. Robin Meier and his team informed the agents about the latest developments and trends for batch and continuous technologies.



More than 60 participants followed the trials and presentations very attentively on both days.

New Lifting Column with Small Footprint

Bohle Developers Optimize Lifting Column for Automated Processes

In the pharmaceutical solids industry, lifting devices in the form of lifting columns have been an indispensable aid in performing a great variety of tasks for many years. For example, lifting columns are used to feed tablet presses or coaters or in complex manufacturing lines.

In contrast to competitors who use hydraulic lifting technology, L.B. Bohle has been relying very successfully on robust and electrically operated chain drives for years. "These chain drives require less maintenance than hydraulic drives and do not pose hygiene problems in cleanrooms," said Thorsten Wesselmann (Executive Director), explaining the advantages of Bohle technology which has had a presence in the market for more than 30 years. Several thousand HS type lifting columns are reliably used every day for a variety of applications.

Slimmer HS SL lifting column expands portfolio

As the capacity in production rooms is often limited, customers increasingly expressed

the wish for a new design of the lifting column. Production systems with their auxiliary units often take up a lot of space, making the integration of a lifting column difficult. For this reason, L.B. Bohle developed a new SL lifting column, which was presented for the first time at Achema 2018. The HS SL impresses with its robust design and electromechanical lifting drive. In addition, it features a touch control based on a microcontroller. The lifting column is controlled automatically by an intuitive user interface. For Thorsten Wesselmann, it is a unique selling point that "the new lifting column, with already integrated control cabinet, requires only a footprint of 0.3 m² and can therefore also be used in very limited spaces". The HS SL guarantees gentle lifting, precise docking, swivelling and turning as well as the inte-

gration of containment valves, drum adaptors or other devices. Operation via a remote touch panel enables operation outside the danger zone. Of course, the HS SL also offers a wide range of options, such as a load handling device, which can be implemented at the customer's request.



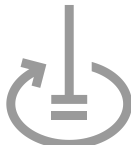
Easy operation due to a touch control based on a microcontroller.



Low-Maintenance Chain Drive



Remote Touch Control



Precise Turning



Precise Swivelling



Visitor magnet at Achema 2018: At the last Achema, visitors were informed about the optimized, space-saving lifting column. In the meantime, several lifting columns of the HS SL series have already been installed.

Conical Mill BTS with RFID Equipment

Permanent Control in the Sieving Process

The size reduction of pharmaceutical solids is a crucial step in the process of tablet production and has a significant influence on the quality of the final product. The required particle size distribution correlates with desired release characteristics. Therefore, the choice of the correct machine setup for the crushing process is critical for product quality. This means that the correct sieve insert must be selected and installed for a sieving machine.

For years now, the Bohle Turbo Sieve BTS 200 has been meeting the highest standards of process reliability thanks to its modern control system with recipe and user management. The sieving process can only be started by authorized operators. However, the operator is still solely responsible for installing the appropriate sieve insert.



Sieve insert determines product result

"The sieve insert has a decisive influence on the product result and must therefore be regarded as process-critical. For this reason, it must be carefully selected," said Executive Director Tim Remmert, highlighting the priority of the work process.



"In order to achieve a significantly higher level of process reliability and to avoid errors to the greatest extent possible, the BTS 200 can now be equipped with RFID (Radio Frequency Identification) technology," explained Remmert. The sieve inserts are equipped with unobtrusive transponders (data carriers) that clearly identify the sieve insert. Thus, a stored sieving process can only be started with the sieve insert stored in the recipe.

The antenna for reading the data is plugged into the feed hopper, ensuring easy cleaning of the BTS.

Enhanced process monitoring and safety

The use of RFID technology has further advantages for users: Storing the operating times makes it easy to draw conclusions about possible wear and extended process times. The integration of RFID technology into the BTS control system thus increases

Higher level of process reliability: RFID technology ensures permanent control of the screening process. For example, a stored screening process can only be started with the screen insert stored in the recipe.

process reliability and documents the sieve insert used in the batch report.

- The following data is stored on the sieve transponder:
- Serial number
 - Sieve design (Round hole sieve, friction sieve, square hole sieve)
 - Hole size
 - Article number
 - Date of manufacture
 - First and last use
 - Operating hours



Steve Chahidi Strengthens Sales Team

New Area Sales Manager for France, Spain and the Maghreb Region

Dipl.-Ing. Steve Chahidi, age 50, took over the area sales management for Spain and France, the French-speaking part of Belgium and the entire Maghreb region at the beginning of 2019. This important position had to be filled following the promotion of Dipl.-Ing. Burkhard Schmidt to Sales Director of L.B. Bohle Maschinen + Verfahren GmbH. "With Steve Chahidi, we have been able to recruit an expert for the sale of capital goods in mechanical engineering," said Executive Director Tim Remmert. His language skills and experience make him an asset to our company," Tim Remmert continued.

Greater proximity to the customer

Steve Chahidi, who holds a Master's degree in electrical engineering, will manage his sales area mainly from France in order to be

even closer to the customer in cooperation with the Medelpharm agency. "Our goal is to regain better penetration of the French market. By increasing our local presence, we want to achieve greater sales success there as quickly as possible," said Burkhard Schmidt, outlining the goals for the French market.

Spain and the Maghreb with great potential

The Spanish market is traditionally one of the largest pharmaceutical markets in the European Union and has been a successful sales market for L.B. Bohle for many years with a large number of implemented systems.

Algeria, Morocco and Tunisia have experienced an economic upswing in the pharmaceutical sector in recent years, enabling L.B. Bohle to install numerous process and



Language talent Steve Chahidi joined the Bohle-team in February.

handling machines. This positive development will be continued and strengthened by Steve Chahidi.



The compact system with the BFS 240 fluid bed granulator and the GMA 600 high-shear granulator was successfully installed in Algeria. Especially in recent years, the demand for process machines from L.B. Bohle has increased in the Maghreb states.

Bohle and Korsch Together at Interphex

Trade Fair Cooperation Successfully Expanded

At Interphex in New York, L.B. Bohle and Korsch AG, two globally renowned pharmaceutical machine manufacturers, made their first joint appearance in the USA. Having very successfully exhibited in Germany at Interpack 2017 and Achema 2018, as well as last year at Pharmtech in Moscow, the decision to exhibit together at Interphex was easy.

"The larger booth area has attracted more attention. The higher number of visitors and the positive feedback at the trade fair clearly show that it was the right decision to exhibit together", summarized Martin Hack, Vice President & General Manager L.B. Bohle LLC.

Further joint exhibitions 2019



Pharmtech
November 19th – 22th
Moscow, Russia



Andina Pack
November 19th – 22th
Bogotá, Colombia



PMEC
November 26th – 28th
Delhi NCR, India

Focus on process machines

A total of four machines for different production steps drew numerous customers and potential buyers to the booth. Out of the extensive range for granulation processes, L.B. Bohle presented the Roller

Compactor BRC 25. The dry granulators of the BRC series can be flexibly integrated into various production scenarios and can be used both in batch production and in continuous manufacturing. Visitors to the BTM 150 hammer mill and BTS 200 turbo sieve had the opportunity to find out about the latest innovations in milling and sieving machines. Both systems feature a touch screen for convenient operation. A further highlight at the joint booth was the BTC 100 coater. The tablet coater not only impresses with its fast and uniform tablet coating, but above all with its efficiency.

"Your Process in Mind" a complete success

At the end of the day, both Korsch and Bohle drew very positive conclusions from the joint trade fair. "We agree that the joint presentation brings only advantages. Our appearance under the slogan "Your Process in Mind" was very well received by customers and visitors. We received nothing but positive feedback", said Tim R Emmert (Executive Director) summing up the trade fair.

The next big joint presentation of the two tablet production experts will be at the PMEC India from 26 to 28 November 2019.



APV Seminars at the Service Center

Wet and Dry Granulation Workshops November

For many years, APV (Arbeitsgemeinschaft für Pharmazeutische Verfahrenstechnik e.V.) has been very successfully organizing seminars at L.B. Bohle's Service Center.

In November, the series of seminars on wet and dry granulation, aimed at employees from the development, production and quality control departments, will continue. The goal of the seminars is to gain a deeper understanding of processes, formulations and their interactions.

Both workshops are characterized by a successful mix of theory and practice. The seminars will be led by experts from universities, research and industry. The semi-

Seminar Dry Granulation
November 12th and 13th, 2019

- Basics
- Demonstration of the compactors
- Formulation aspects in dry granulation
- Practical training
- PAT methods for compacting
- Cleaning and dismantling of the granulator

Seminar Wet Granulation
November 14th and 15th, 2019

- Technological introduction
- Processes for wet granulation
- Continuous granulation
- Group work in theory and practice (fluid bed and single pot granulation)

nars in the Service Center are distinguished by their high practical content. By using the Bohle machine park, the participants always have access to ultra-modern equipment.

Further information:
www.lbbohle.com



Start of Construction Work for New Canteen

Completion in 2019

As you would expect from L.B. Bohle, the decision was made quickly and easily: "We're building a new canteen!" This decision was announced by Dipl.-Ing. Lorenz B. Bohle, Chairman of the Advisory Board of L.B. Bohle Maschinen + Verfahren GmbH at a staff meeting in November 2018: "Now that we have taken the first step in the right direction in our company canteen by switching to a full caterer, it is time to drive development forward", Lorenz Bohle continued.

Under the supervision of Lorenz Bohle, a canteen of approx. 300 m² will be built in the park at the headquarters in Ennigerloh, which will not only be a place for employees to feel at ease, but also for customers and guests.

Modern ambience for a feel-good climate

"We attached great importance to a bright and modern ambience when planning the building," said Lorenz Bohle regarding the detailed planning. The result is a building that blends in perfectly with the park and offers a large outdoor sitting area for eating or taking a break. "Our goal is to make our customers' stay here in Ennigerloh as comfortable as possible during trials or at the FAT. The new company restaurant will add to this," explained Lorenz Bohle.

More communication thanks to joint breaks

Thorsten Wesselmann (Executive Director) is also pleased with the new building. "As

a family business with a close relationship to our employees, we are very keen to create a feel-good atmosphere." The new canteen will further improve the framework. "Our employees will come together in the company restaurant, talk to each other, get to know each other better. This also improves the working atmosphere," Thorsten Wesselmann continued.



The inauguration of the canteen complex is scheduled for 2019, provided construction progresses according to plan.



A perfect blend with the park: the new company canteen features large windows and an outdoor seating area to enjoy a break outdoors.



Lorenz Bohle, Chairman of the Advisory Board (left) at the official ground-breaking ceremony with Oliver Spiekermann and Laurence Bell (Architects Spiekermann).

Thomas Altefrohne Wins Young Welders Competition

Top Results in Regional Competition

In the hopes of good results and being highly motivated, Bohle's two journeymen Thomas Altefrohne and Patrick Vossmann made the trip to Beckum to take part in the competition of the German Welding Association. A total of 26 young welders between the ages of 16 and 21 competed against each other in the various welding processes.

Competition between the different welding techniques

"Having our own trainees compete with others in the various welding processes is always a great opportunity to prove their specialist skills and to assess their abilities," said Klaus Emmerlich, Head of Industrial Technical Training. The tasks in-



cluded welding fillet welds and butt welds on sheet metal in different positions.

From L.B. Bohle, Thomas Altefrohne achieved the highest score of 100 points and was the winner in the field of tungsten

inert gas welding. Also, from L.B. Bohle, Patrick Vossmann finished with the excellent result of 3rd place.

Results confirm high educational level

After the competition, Emmerlich stated with great satisfaction: "The top positions confirm that we are a very good training company. Of course, the diligence and talent of the trainees are important as well".

L.B. Bohle offers training for industrial mechanics specializing in mechanical and plant engineering, and for electronics technicians specializing in industrial engineering. In addition, Bohle will also be training machining mechanics specializing in turning technology starting in September 2020.



Very satisfied with the results of the competition. Klaus Emmerlich, Patrick Vossmann and Thomas Altefrohne (from left to right).

Further information on our job advertisements and apprenticeships at: www.lbbohle.com

Christel Wienker with L.B. Bohle for 35 years

Celebration marks anniversary

It's hard to believe how quickly time passes. On April 15th, Christel Wienker celebrated her 35th anniversary as Executive Secretary to the Management and the Advisory Board.

Trusting cooperation for more than three decades

Company founder and Chairman of the Advisory Board, Lorenz B. Bohle, looks back on their years together with joyful gratitude. "Christel Wienker has accompanied the development of our company almost from the very beginning. Thanks to her determination and reliability, I could always rest assured that Mrs. Wienker's excellent support would keep things running smoothly," says Bohle with great satisfaction after the decades they spent working together in the company.

The small ceremony was also attended by Executive Director Thorsten Wesselmann, Global Plant Manager Robert Stauvermann, and Markus Splietker, Manager of Plant 3.



Harmonic atmosphere at the anniversary dinner. Of course, all participants looked back to former times.

Long retention time of the employees in the company

Robert Stauvermann has been a mainstay at L.B. Bohle since the first day of the company's foundation, while Markus Splietker was the first apprentice and now with the company since 1982.

"It is always a great pleasure for me to see how many employees have been working with me for so many years. This continuity in cooperation speaks volumes about the great trust we have in each other and the satisfaction the job brings," Bohle reports with pride.



They are happy about the long-standing employees: Lorenz Bohle (left) and Thorsten Wesselmann (center) together with Christel Wienker, Markus Splietker and Robert Stauvermann (from left to right).

