Operational Excellence: High Quality in Production
Focus on Quality

The debate about the quality of medicines is not new. In recent years, however, since the Food and Drug Administration (FDA) launched its “Pharmaceutical cGMPs for the 21st Century” initiative in 2002, it has gained considerable momentum. In addition to the FDA, a second international regulatory body, the European Medicines Agency (EMA), has become active in this field – also in joint projects such as a pilot program on Quality by Design. The International Society for Pharmaceutical Engineering (ISPE) has launched two projects that focus on the quality of pharmaceutical production with its initiatives on the subjects of “Drug Shortages” and “Quality Metrics”. The time line below lists selected milestones in this development and demonstrates that quality is one of the key challenges of the future for pharmaceutical production.

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<th>Year</th>
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<td>2004</td>
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DEAR READER,

Quality remains one of the most crucial topics for the pharmaceutical industry. That applies equally to both products, and production processes. This is demonstrated, among other things, by the new EU GMP guidelines that came into force on 1 March 2015 and the GMP documents that are currently still being revised. Issues such as the prevention of cross-contamination, process validation and the continuous monitoring of global supply chains play major roles here.

We aspire not only to help you do your job by providing the best technology, but also to support you with our expertise. That is why, in the last four years since the foundation of Excellence United, we have developed joint offerings that are available to you worldwide. We bring together state-of-the-art technological solutions for your entire value chain – from development to production and packaging to service.

The name of our magazine “we connect” puts this aspiration in a nutshell. We connect people, technology and processes. Working with you, we develop the best possible solutions to meet your needs.

On behalf of Excellence United I would like to cordially invite you to find out about our products and services in this magazine.

Yours sincerely,

Markus Ströbel
Spokesman of Excellence United
Towards a New Culture of Quality

Pharmaceutical companies have recently experienced problems in their production processes, leading to bottlenecks and shortages. Another result has been intense scrutiny of industry procedures that for years were considered tried and true. Government authorities in the US and Europe have now taken the initiative and are working with manufacturers to establish a new culture of quality in the pharmaceutical industry.

Consequently, by April 2013 there were significant shortages of some 300 drugs in the US alone, with the cost of compensating for the shortfalls estimated at 400 million dollars. According to the European Medicines Agency (EMA), disruptions in the production of critical medicines in Europe have also increased dramatically in recent years. A study published in June 2013 by the International Society for Pharmaceutical Engineering (ISPE) shows that the problem often stems from quality assurance difficulties during production, a phenomenon that has caught the attention of government authorities. At the end of 2012, the EMA therefore launched an initiative to reduce the number of cases where compliance with good manufacturing practices (GMPs) is not met. Similarly, the FDA initiative Pharmaceutical cGMPs for the 21st Century, begun in 2002, has moved into its next phase with the creation of a new “super agency”, the Office of Pharmaceutical Quality. The OPQ will pool regulatory expertise on quality-related issues in pharmaceutical production processes. It will also cooperate with other agencies and with drug makers to further develop the international framework in this area.

In 2014 the number of letters issued by the US Food and Drug Administration (FDA) was almost 20 times greater than in 2009. The government agency sends out the warnings when production procedures or facilities do not meet the relevant good manufacturing practice (GMP) standards. In 2014 the number of letters issued by the US Food and Drug Administration (FDA) was almost 20 times greater than in 2009. The government agency sends out the warnings when production procedures or facilities do not meet the relevant good manufacturing practice (GMP) standards.

It’s an eye-catching statistic: between 2010 and 2013, the number of warning letters issued by the US Food and Drug Administration (FDA) for noncompliance with pharmaceutical industry regulations increased tenfold.

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Increase production requirements

A number of factors are forcing pharmaceutical manufacturers to change their production processes, such as cost pressures resulting from new competitors based in emerging countries, patents on blockbuster drugs that are now expiring and the globalization of production networks. Innovations in pharmaceutical research are also having an impact on production – in the form of “personalized medicine”, for example. In the future, drug-based therapy will not only depend on the standard diagnosis for an illness, but also on a patient’s individual characteristics such as genetic factors. Pharmaceutical companies will therefore need to have a range of individual, precisely formulated medicines available. At the same time, the growing use of highly potent active ingredients will require that production systems meet even more stringent safety standards. All of this means that drug makers will need production processes and machines that are highly efficient and reliable. Manufacturers of pharmaceutical production machines therefore have a key role to play in improving quality.

Excellence United – Production at a high level

Numerous elements must come together seamlessly if production processes are to be efficient: processing equipment and facilities must run smoothly, maintenance and other services must be available as needed, and operating personnel must be properly trained. Above all, there can be no disruptions where processes overlap, and quality levels at all points in the production chain must meet current – and coming – requirements. Excellence United therefore provides state-of-the-art production technology for the entire value chain, from product development to packaging. It also offers a comprehensive service portfolio, including consulting and training. Here, too, quality plays a key role. The alliance members pool their expertise in workgroups in order to develop uniform standards and processes. That allows them to help customers upgrade existing production processes and create new facilities that meet tomorrow’s standards today.
The production of drugs and medical products makes the greatest demands on quality. The more people worldwide have access to basic health care, the more important a flawless supply chain becomes. It is for good reason that the pharma industry is one of the most strongly regulated sectors in the world, because only if patient safety is guaranteed can the entire industry continue on its successful growth course.

The knowledge and experience of employees at all levels play a decisive role here. In recent decades, as Excellence United, we have accumulated a unique wealth of specialist knowledge. Our planners, pharmacists and project managers work in close cooperation with their contacts on the user side. In the process, they gain unique insights into the subjects that really matter in practical everyday working along the entire pharmaceutical value chain – beginning in the laboratory and progressing all the way to the packaged product on the pallet.

Within Excellence United we pool this knowledge. And with our specialist symposia we have created a platform that enables experts to exchange ideas and experiences of the latest challenges and future trends in pharmaceutical production. The focus is on clearly defined topics relating to the laboratory and production. As a result, participants can increase their knowledge in selected areas and benefit from international best practices. In addition to the experts from Excellence United, specialists from the field, from universities, organizations and industrial associations share their knowledge at these symposia. Thematically, the symposia cover the entire range of pharmaceutical production. Which subjects are dealt with in a specific country is determined by the concrete needs of the users in that country.

You can find up-to-date information about planned symposia on the Excellence United website. We would also be very pleased to receive your suggestions for topics by email at: info@excellence-united.com

20% of the input produces 80% of the result. This formula is also known as the 80-20 rule or the Pareto Principle. It provides insight into economic relationships and indicates where you can find optimization potential. For pharmaceutical producers, for example, this effect is especially evident when it comes to maintenance. Here, according to the Pareto Principle, 20% of the critical parts in a machine cause 80% of the breakdown costs. If manufacturers optimize these 20% in a targeted way, the whole machine will run dramatically better. The key to this increase in efficiency is the FMECA, a new analysis service offered by Excellence United.

Excellence United recently invited customers to Frankfurt am Main for its second Experience Days workshop. Under the heading “Maintenance Management 2020”, a group of specialists sat down with customers and examined requirements and future trends in production. The discussion focused on new opportunities for planning and optimization. It emerged that the Failure Mode, Effects and Criticality Analysis (FMECA) method is a highly efficient means of optimizing machines. FMECA is a formal method for prioritizing equipment on the basis of economic targets.

This involves identifying the critical parts that have the greatest impact on machine operation. The analysis makes it clear which components have the highest failure rates and can cause the greatest economic damage. The method uses this information to identify ways of reducing critical factors. The results increase production availability and provide valuable information for optimizing spare-part management and developing the best possible maintenance strategy.

Are you interested in an FMECA analysis? The after-sales service of the Excellence United partners would be happy to support you in this area. The strategic alliance has pledged to use a pragmatic and standardized approach on behalf of its customers.

Would you also like to attend the next Excellence United Experience Days?

Then contact us at: service@excellence-united.com

Quelle: Glatt GmbH

**MAINTENANCE MANAGEMENT**

Pareto Principle in the Machine Room

| Functional Units | Valves, and Chamber Valves | Housing, Canisters, Body | Heat Exchangers, Spares | Dosing Pumps | Filters Incl. Meeting | PC/SACDA | Steam (technical) | Hubs/Valves | Pipeline/Valves | Incl/Outlet | Sales | Compressed Air / Pipeline | Sensors / Explosion Prevention Center | Pressure Relief Valves | Parts / Window | Scales / Pumps | Sabe / Pressure Relief Valves | Operating Unit / Control Elements | Coupling / Connections |
|------------------|---------------------------|-------------------------|------------------------|--------------|----------------------|---------|------------------|------------|--------------|-----------|-------|--------------------------|-----------------------------|------------------|----------------|-------------|----------------|------------------|-----------------------------|----------------|
|                  |                           |                         |                        |              |                      |        |                  |            |              |            |       |                          |                             |                  |              |             |                |                   |                             |               |

Quelle: Glatt GmbH
There can be no compromises on the quality of medicines.

In your opinion, what role will research play in coming years?

Where is the pharmaceutical industry heading? Five questions to Birgit Fischer, Chief Executive of the Association of Research-Based Pharmaceutical Companies (VFA).

Which overall trends are discernible?

Research-based pharmaceutical companies are prioritizing the areas where the need is greatest: for example, serious and life-threatening diseases. Accordingly, one third of all projects aim to improve cancer therapy and 20% of all projects focus on the treatment of inflammatory diseases, such as MS and rheumatism. Another important advance is personalized medicine, in which there is direct interaction between diagnostics and drugs. In this therapeutic approach the most suitable medicine is chosen on the basis of the results of genetic and other tests.

Which products are now set to enter the market?

In the next few years we anticipate additional improvements in therapy – for example, for people with hepatitis C, pulmonary diseases and coagulation disorders. In many of these cases too, Germany is likely to benefit as the production location.

In which countries do you expect to see the highest growth rates over the next few years?

Until a few years ago, the industrialized countries were by far the most important sales markets for medicinal drugs. Today this position is shared with the emerging economies of China, India, Latin America and Eastern Europe. What does that mean for the pharma industry? Now that production has already become strongly globalized, R&D and sales will increasingly also use the new growth markets. But, of course, the industry will not give up its activities in developed markets.

How important, in your view, is quality in production?

There can be no compromises on the technical quality of medicines. And because that is the case, production plants in Germany can be competitive in the globalized world economy: they verifiably create the required quality assurance for highly complex products (for example, biopharmaceuticals and vaccines as well as for challenging synthetic chemical medicines). The key to this is intelligently controlled, highly automated machines combined with well-trained and highly motivated personnel.

MINIMIZING INTERFACE PROBLEMS – PRODUCTION LINE PROJECTS FROM A SINGLE SOURCE

Should the new production line guarantee efficient processes from the very start? Of course. That’s why integrated project management is so important.

The key to success in production line projects with different equipment manufacturers is coordination between the companies involved. Cost, quality and date targets can only be met if all the participants work hand in hand. Unified project management enables Excellence United to reduce typical interface problems and offer customers the reliable completion of ambitious production line projects. Among other things, the business offering includes:

- Integrated project management with established processes and problem-solving expertise.
- Coordinated after-sales packages for hotline/support, spare parts, maintenance, training, updates, upgrades and a joint Service Portal.
- Transparency and cost certainty because Excellence United partners work together without any mark-up. Furthermore, the guarantee for all components of the complete installation only begins when the entire production line is in place at the customer’s plant.
- Compatibility of all sub-systems and machines.
- Coordination after-sales packages for hotline/support, spare parts, maintenance, training, updates, upgrades and a joint Service Portal.

Contact: info@excellence-united.com

Excellence United milestones: Highlights from the last four years show how fast the alliance has developed. The partner companies have expanded their German sites and developed their presence in international markets.

2011

- Five specialist engineering companies working in the field of pharmaceutical production came together in a strategic alliance to form Excellence United. Ever since the network has offered its customers technologically advanced production solutions of the highest quality and comprehensive service around the globe.

2014

- The foundation of Excellence United Marketing GmbH enables the alliance to offer its customers a comprehensive service from a single source in the future.
**New “Small” Models from B+S**

**INNOVATIONS**

The Bausch+Ströbel range has always included semi-automatic machines for small batch production that are generally used in the laboratory sector. Their special feature: the same filling and closing methods are used as in high-performance machines. B+S has now completely updated its “smallest” products and is presenting them for the first time at ACHEMA.

These small units have been completely designed for use in an isolator. All parts can withstand VHP sterilization without a problem, they are unaffected by hydrogen peroxide vapour. Interesting combinations are possible with the modular VarioSys system. In addition, the “new” models can do more than their predecessors: for example, the control system has been completely upgraded. Operators can now conveniently carry out all adjustments on a touchscreen. Parameters can also be stored and filed there.

In addition to the basic models, all models are now also available in enhanced versions offering even more convenience. It is possible, for example, to integrate 100% IPC with a scale. The filling quantity is automatically adjusted during production. Batch logs can be stored, and an interface for a printer is also available.

The new “small” models are perfectly matched:

- EDM fillers are available not only rotary piston pumps, but now also with peristaltic pumps. The newly developed and patented single-hose pump has been deployed here.
- The SVP stoppering machine is also available in many different versions. An automatic feed is now possible. Another possible additional function is gas-flushing.
- A crimping unit and a combined screw-closing and crimping station has now become available with the HV series.

**Bausch+Ströbel**

2012

**THE LARGEST BUILDING PROJECT** in the company’s almost 50-year history results in a new assembly shop, a spacious order-picking warehouse, additional rooms for seminars and customer meetings, offices and a company restaurant with roof terrace.

2013

Bausch+Ströbel acquires Swiss company Wilco AG, thereby expanding its range of filling and packaging equipment to include high-precision FULLY AUTOMATIC INSPECTION MACHINES for leak detection and visual control as well as spectroscopic systems.

2014

Bausch+Ströbel finds the **B+S ACADEMY**. The processing of pharmaceuticals is becoming increasingly complex, and high quality standards require well-trained personnel. B+S now offers its customers a wide-ranging program of seminars and training courses. Among others, subjects include plant availability or overall equipment effectiveness (OEE). The modular pro gram is especially tailored to address customers’ needs. The academy is also responsible for ensuring the B+S team keeps abreast of the latest developments in research and technology.

**SPECIALIZED MACHINES FOR THE PHARMACEUTICAL INDUSTRY**

Bausch+Ströbel has been manufacturing specialized machines for the pharmaceutical industry for nearly 50 years. Its technology offers massive benefits for the industrial processing of medicines in liquid and powder form.

The machines made by this specialist company range from semi-automatic machines for the laboratory to fully automatic stand-alone units and even highly complex installations for processing containers such as vials, bottles, syringes, ampoules and cartridges. A large number of individual work steps have to be carried out here, such as unpacking, cleaning and sterilizing the items before they are filled, closed, inspected and labelled.

Bausch+Ströbel has steadily grown over recent decades, so that approximately 1,100 employees now work at its Ilshofen site alone, while its global workforce already exceeds 1,400. The company maintains production sites in north Germany and the USA as well as over 50 sales and service facilities worldwide.

In 2013 the company bought Wilco AG in Switzerland. Its fully automatic high-precision inspection machines for leak detection and visual control and its spectroscopic systems complement the Bausch+Ströbel range perfectly.

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Virtual Reality can be used for the entire duration of a project: from planning to the training of operators. A virtual mock-up can be seen at ACHEMA.

The patented single-hose peristaltic pump makes do with just one hose per dosing station, which make handling much simpler and increases process reliability.

The KCP5060 is a specialized filling and closing machine for small batch production. Special clean-room robots transport the vials, syringes or cartridges to the filling and closing stations.

VarioSys is a highly flexible production solution. A wide variety of modules for filling, dosing and closing can be fitted in special isolators using the lock-and-key principle.

The patented single-hose peristaltic pump makes do with just one hose per dosing station, which make handling much simpler and increases process reliability.
Three Machines for Maximum Tableting Productivity

The machines in the FE Series stand for the very highest efficiency and quality standards in pharmaceutical production. They combine maximum performance with simple operation as a result of Fette Compacting’s TRI.EASY design. They have set completely new standards in tablet production.

With the FE Series, Fette Compacting began developing tailor-made technologies to meet the highest efficiency standards in tablet production in 2011. The most efficient production solution depends on the product in hand. The production of generic drugs, for example, requires high quality at minimum cost. When it comes to products with highly effective substances, on the other hand, special precautions are required to protect operators.

In 2014, following the development of the FE75, Fette Compacting rounded off the series and launched a machine with the highest output: the double rotary press can produce over 1.65 million tablets per hour – on a floor space of just two square meters.

Like the other machines in the FE Series, it is very simple to operate and offers short production changeover and maintenance times as a result of its easy to fit components. The FE75 complements the first two models in this innovative series – the FE55 and the FE35 – with a machine that sets new standards for the production of large batches of tablets.

TRI.EASY design – simple operation is the key to efficiency

One major feature of the FE Series is the new TRI.EASY operating strategy. The underlying idea is straightforward: technology can only be efficient if it is equally simple to use in the three dimensions of operation, changeover and maintenance. That is why the TRI.EASY design was consistently devised to meet the needs of users, offering extensive support in all tasks so that operating errors are practically ruled out. Short training periods and significantly improved handling safety for operators ensure the highest standard of product quality in even the most demanding jobs.

Fette Compacting rounds off the FE Series with the world premiere of the FE75 double rotary press. A new SUBSIDIARY commences work in Mexico.

Fette Compacting founds a new CUSTOMER AND COMMISSIONING CENTER at the Schwarzenbek plant near Hamburg.

INNOVATIONS

Pmax Turret with FS12 punches – High Performance for Tablet Production

Pmax turrets with FS12 punches significantly boost productivity: they enable users to increase tableting output by up to 40 % – without increasing production time. The turrets with 45, 66 and 110 punch stations are also available for retrofitting.

Using hidden performance reserve – Fette Compacting is presenting its new program for plant optimization for the first time at ACHEMA 2015. The total of four packages – Uptime, Output, Quality and Yield – are optimally tailored to address specific production problems. Users benefit from measurable improvements within a very short time as well as a sustainable improvement in their machines’ processing of relevant products.

Global Customer Support – global know-how on all aspects of tableting

Fette Compacting offers swift support on all levels through a digitally networked service system. It covers everything from pressing tools and OEM spare parts to plant modernization and refurbished machines to worldwide training courses for your employees.
Glatt is one of the world’s leading suppliers of fluid bed systems, high-shear granulators, granulating lines and tablet coaters. Additionally, the company also offers a wide range of services and technological solutions.

Werner Glatt built his very first fluid bed system for the pharmaceutical industry with a dozen employees in 1959. Today, the company employs more than 1,500 people at facilities in Germany, the USA, Switzerland, India, Russia, the UK, China and the Czech Republic. The goal of the specialists who work for the Binzen-based company has remained unchanged over the years: continuously improving the standard of technology and developing highly efficient production solutions.

Glatt is organized in four divisions:

• **Pharmaceutical Services** develops and produces solid dosage forms as a service provider. Key areas here are multiple unit dosage systems such as pellets and micropellets as well as granules.

• **Process Technology Pharma** develops fluid bed systems, high-shear granulators, granulation lines and tablet coaters. Additionally, the company also offers a wide range of services and technological solutions.

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• **Process Technology Food, Feed & Fine Chemicals** develops, plans and markets fluid bed and spouted bed systems for the food, animal feed and chemical industries.

• **Process & Plant Engineering** plans and realizes plant engineering projects worldwide. Its range of expertise covers the expansion and conversion of existing facilities to the partial or total construction of newbuild plants.

### PROCESS INNOVATIONS

The Glatt rotary process unit makes it easy to move from stepped batch to integrated continuous production: it enables batch fluid bed machines of the GPCG 2 and GPCG 10 series and larger to be converted into continuous fluid bed granulators. Afterwards the time the product spends in the machine can be very precisely controlled – and that guarantees high quality. An ingenious automatic discharge system also provides process reliability.

### FROM PRODUCT DEVELOPMENT TO PLANT ENGINEERING

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- **Process Technology Pharma** develops fluid bed systems, high-shear granulators, granulation lines and tablet coaters. Glatt developed its original core business in a targeted way, expanding it to include important processes in the production of pharmaceutical solids – from weighing materials to the transfer to packaging and associated product handling steps in the production chain.

- **Process Technology Food, Feed & Fine Chemicals** develops, plans and markets fluid bed and spouted bed systems for the food, animal feed and chemical industries.

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2013 Construction of the new TECHNOLOGY CENTER begins in July 2013 at the headquarters in Binzen. It is also planned to extend the production plant during the second construction phase.

2013 In mid-2013, Glatt takes over a modern production operation in Pune, India. The facility is meant to help its sales and service organization to develop BUSINESS IN INDIA. An additional office, which is maintained jointly with Fette Compacting and Harro Höfliger in Mumbai, helps provide optimum customer support.

2014 The first Glatt CONTI PRODUCTION LINE MODCOS is produced, delivered and successfully begins operation.

2015 With the launch of GCC, THE NEW BENCHMARK IN COATING, Glatt introduces its new coater at ACHEMA. Glatt sets new standards in drum coating with TOP SPEED, TOP PRECISION, TOP UNIFORMITY, TOP FLEXIBILITY and TOP HYGIENE.
From a one-man show to a technology leader in many fields – Harro Höfliger, a specialist in pharmaceutical production and packaging machines, is continuing its expansion course. Approximately 900 employees achieved a turnover of € 160 million in 2014. The export quota was 75 %. On one hand, the international success of the company with sites in Canada, China, France, Russia, Switzerland, Singapore and the USA is based on growth in the core business of developing customized solutions. On the other hand, it is the result of Harro Höfliger’s ongoing specialization: the company excels with specialist knowledge, technical support and production assistance. Harro Höfliger has long since become the technology leader when it comes to machines for product assembly, for the processing of web materials and for the filling and assembling of powder inhalers. Guaranteeing safety with pharma services

Materials and substances containing active agents are tested for their process capability as part of the company’s extensive service offering. Harro Höfliger has a wide variety of testing machines and units available for this purpose at its headquarters. These can be used to investigate the original product under actual production conditions – including test runs with customer’s machines in a pharmaceutical production environment. This guarantees safety and reliability. The motto “ALL YOU NEED” says everything about Harro Höfliger. This means that Harro Höfliger stands by their customers with technological support to ensure that the solutions are 100 % tailored to meet their requirements.

The fundamental qualities INVENTIVE. QUALIFIED. RELIABLE. reflect the principles that Harro Höfliger upholds when realizing customer-specific system solutions.

2014 The HH Academy opens its doors in June 2014. With its new TRAINING CENTER Harro Höfliger lays the foundation for a forward-looking training system. More than 70 young people concentrate on training for the future at the over 800-square meter facility. 2014 On 1 October 2014, Harro Höfliger founded the 100 % SUBSIDIARY HARRO HÖFLIGER MENA S.A.R.L, which now also offers local assistance and direct service in the MENA regions (Middle East & North Africa). 2014 Harro Höfliger expands its global network with the foundation of new SALES AND SERVICE OPERATIONS in Scandinavia, Turkey, Korea and Mexico. 2015 Shaping the future: Harro Höfliger becomes active in another technology center offering over 3,500 square meters of space after taking over an almost new PRODUCTION FACILITY in Backnang. Harro Höfliger is optimizing the production and assembly of capsule-filling machines here. It aims to become even faster and more efficient in order to grow with its customers.
Packaging Tablets Efficiently and Flexibly

Flexibility is especially important in the field of pharmaceutical packaging technology. A large number of different products often have to be processed on a single line – swiftly, economically and flexibly. One Uhlmann solution sets new standards.

A total of 72 different packaging combinations and a large number of secondary variants form the impressive packaging solution for one hormone drug. At the German plant of an Uhlmann customer there are two identical production lines, consisting of a blister machine, pillow pack machine, cartoner and stretch-banding machine. The lines are configured in such a way that the pharmaceutical manufacturer can respond flexibly and cost-effectively to the needs of its customers. “In addition, we have developed the lines so that a changeover of product variants from one line to the other is possible without any problem,” explains Christian Link, Head of Customized Packaging Systems. “Depending on the packaging variant, the blister machine processes up to 400 blisters per minute.”

300 cartons per minute

Even at high speeds, the two lines guarantee production reliability. Feeders accurately place the tablets in the individual blister pockets. A camera inspection system then checks correct filling. The integrated downstream cartoner processes the individual blisters using a dancer magazine or the finished pillow packs using a double-lane stacking belt feeder.

Assisted start of production

Uhlmann experts not only configured the production line, but also accompanied start of production and trained the operating personnel. "We ensure that the customer production processes run smoothly from the very start," explains Christian Link.

Top: Added performance, improved user-friendliness and greater application versatility. The new Blister line BEC 300 is the outcome of many optimization measures as well as specific feedback from the market. For a maximum output of 300 blisters and 150 cartons per minute.

Center: The Blister line BEC 500 processes up to 500 blisters and a maximum of 450 folded cartons per minute. A Case packer E 4012 then packs 600 cartons into 12 transport cases per minute. All the modules in the line are optimally coordinated.

Bottom: From the bottle to the pallet, the Bottle line IBC 120, Labeler L 180 and Case Packaging Center 10, combining a case packer and a palletizer.

Proximity to customers, proximity to the market

The experts also offer an extensive range of services. Uhlmann Customer Services ensures smooth machine operation over many years. Against this background, the experts have subsidiaries in the USA, Brazil, the UK, Sweden, Spain, Russia, Switzerland, France, Singapore and China. Furthermore, Uhlmann maintains a competence center at its headquarters in Laupheim, which guarantees maximum reliability and productivity in the pharmaceutical manufacturing and packaging process with innovative inspection and printing systems.

Uhlmann sets a new standard in flexible and efficient packaging of solid dose products with its Blister line BEC 500.

2012

Uhlmann is investing a double-digit million euro sum in new buildings at its HEADQUARTERS in Laupheim over the next few years.

2015

After 5 years, with more than 150 machines placed on the market, Uhlmann is presenting the new Blister line BEC 300 at the ACHHEMA.
www.excellence-united.de

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