Food Safety: Heading for the future
Interpack 2011: Buhler presents eleven innovations
Grüninger: Fully in line with the “New Art of Milling”
Discover.
Sustainable solutions for your success.

Buhler at Interpack 2011.

Buhler will present sustainable solutions at the Interpack 2011, with a focus on energy efficiency and food safety.

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>Editorial</td>
</tr>
<tr>
<td></td>
<td>Our contribution</td>
</tr>
<tr>
<td>04</td>
<td>Food Safety</td>
</tr>
<tr>
<td></td>
<td>Heading for the future</td>
</tr>
<tr>
<td>10</td>
<td>Divella</td>
</tr>
<tr>
<td></td>
<td>New high-capacity short-goods line</td>
</tr>
<tr>
<td>14</td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>Ensuring trouble-free operation</td>
</tr>
<tr>
<td>16</td>
<td>Interpack 2011</td>
</tr>
<tr>
<td></td>
<td>“Olympics for Buhler”</td>
</tr>
<tr>
<td>24</td>
<td>Great Wall Motors</td>
</tr>
<tr>
<td></td>
<td>Production know-how required</td>
</tr>
<tr>
<td>28</td>
<td>Leisi (Nestlé Suisse SA)</td>
</tr>
<tr>
<td></td>
<td>Centralized kneader control</td>
</tr>
<tr>
<td>30</td>
<td>Bakery Innovation Center</td>
</tr>
<tr>
<td></td>
<td>For innovative flour processors</td>
</tr>
<tr>
<td>31</td>
<td>News</td>
</tr>
</tbody>
</table>
Dear Readers

The trend is unmistakable: In connection with product safety, the food industry is facing increasingly rigorous requirements from year to year. The reasons for this development are related on the one hand to increasingly restrictive national and international legislation and regulations, and on the other hand to a change in consumer awareness. Consumers are better informed and have become more sophisticated. And they want to be sure that the foods they consume will not impair their health in any way whatever.

This development is primarily a challenge for the food industry, but also for Buhler as a supplier of plant, equipment, and services for the food industry. Read about how we contribute to satisfying consumers’ needs in this respect in various articles of this issue of Diagram.

We wish you much pleasure!

Calvin Grieder, CEO
Dr. Daryoush Sangi, Head of Vanguard Automation at Buhler.

The Food Safety issue is becoming an increasingly hot topic. In response, Buhler has become active at various levels in order to offer its customers effective support in mastering the future with new plant, equipment, and processes.

In the recent past, an increasing number of reports about contaminated or even tainted feeds and foods have caused fear in consumers worldwide.

Changes in consumption habits
Such horror stories are not the only challenges facing the international food industry. Changing eating habits and lifestyles are also a concern. Consumers have become more informed and demanding. Moreover, consumption habits have changed. More informed consumers are demanding natural products and clean labels, thereby putting pressure on producers to remove preservatives from recipes and deliver “less processed” foods. Simultaneously the consumer and legislative environment for Food Safety becomes more demanding. The implication of all these changes for the food industry is that it is now faced with higher technology and food safety requirements.

The Buhler Group in its capacity as a leading solution provider (plants, equipments and services) for the food industry plays an important role in
The traceability of products today is a requirement in all areas of the food industry. Plant operators can safeguard themselves against financial damage by installing a traceability system, which reflects the process as closely as possible and is complete from end to end. Such a system must on the one hand comply with the applicable legal standards and regulations, and on the other hand offer food producers the ability of proving to their customers – on the basis of tamper-proof documentation – the origin and the production process applied.

The “WinCos.Traceability” tool integrated in the proven Buhler WinCos process control system ensures complete product traceability, measures production weights, analyzes incorporated process lines, and graphically displays the product flow from the raw material going into the process to the end product coming out of it. “The ‘WinCos.Traceability’ module records the entire production process from beginning to end and provides a straightforward, immediate overview at the click of a mouse,” explains Thomas Widmer, Head of Sales and Quotation Automation at Buhler. “It registers all production stages and every processing operation and saves the data in a central database. Its large number of detailed options such as filtering and searching enable even extensive processing chains to be displayed in a user-friendly way.”

The “WinCos.Traceability” module works from the end product back to the raw material received from suppliers and vice versa. In other words, it takes virtually no time at all to determine the input materials and their suppliers on the basis of a given end product. On the other hand, WinCos.Traceability shows which raw materials have been incorporated in which end products. This allows a detailed analysis to be obtained at the click of a mouse, clearly reveals any irregularities, and thus enables immediate and targeted intervention.

The additional incorporation of identification systems such as RFID (Radio Frequency IDentification) or barcodes allows the production tracing chain to be optimally supplemented. This enables additional data such as quality values and the origin of the raw materials as well as of the end products to be managed. Thanks to transparent data maintenance, the data can be linked with the relevant suppliers or customers.

The WinCos.Traceability tool shows clearly what is stored and where it is stored.
the food production chain. Buhler is aware of its responsibility. With its expertise and experience accumulated throughout its 150-year history, Buhler supports food producers in coping with the challenges posed by the markets (see examples on pages 5 and 7). Compliance with legal standards is but one small part of the support provided in this context. More and more, Buhler is also investing time and manpower in finding new ways and building new competencies for making safe and sustainably produced foods. One instance of this attitude is the launch of the Food Safety Initiative, which Jens Ostergaard, Head of Food Safety, describes on pages 8 and 9 of this Diagram issue.

“Safe” technology
The plants and equipment manufactured by Buhler already have a very high standard in terms of sanitation and food safety, a standard which is based on the most rigorous legal regulations. Even so, Buhler plans to aim even higher with new market developments. Since last autumn, Dr. Daryoush Sangi, Head of Vanguard Automation and his team have concerned themselves with the question of how Buhler can support its customers by offering them technological improvements as they head into the future of food production.

Supporting customers
“Extending the shelf life of foods has always been a core subject for humankind,” says Daryoush Sangi. “In World War I, the death of soldiers caused by spoiled canned food triggered the development of the pasteurization and sterilization processes. Today, it is the changes in the markets and the legal regulations which trigger the development of new technologies. The sequence is clear: As consumers become more demanding, food producers are challenged and with them also plant and equipment manufacturers.”

Challenges galore
Daryoush Sangi sums up what this implies for Buhler: “We must further enhance the already very high sanitation standard of our plant and equipment. The keywords in this connection are: Repellent surfaces, absence of nooks and crannies, and automatic cleaning up to the point of sterilization of entire production plants. Also automatic process monitoring must be further pushed. In the event of operating trouble, processing plants must respond autonomously. Moreover, we can also further refine our processes, since chemical-free processes are playing an ever more important role in the context of new Green Technology. Consumers want natural products that have been processed in the most gentle manner possible – that is, without being impaired or even destroyed. Our challenge is to develop plant, equipment, and processes that will support our customers in satisfying the requirements of the market.”

Graduate mechanical engineer
Daryoush Sangi – who has a German mother and an Iranian father – was born in Braunschweig in 1965 and grew up in Tehran. When he was 16, the Sangi family returned to Germany, where he studied mechanical engineering and obtained a doctorate in Theoretical Mechanics in 1997. With his entry into professional life, Daryoush Sangi came into contact with the issue of food safety. “By pure chance, I was offered a job in the packaging industry and started with the sale of aseptic equipment,” remembers Daryoush Sangi. From then on, Daryoush Sangi as a mechanical engineer was hooked on “sanitation and food production plants.” Thus, he played a crucial part in the development of an aseptic bottling plant for Nestlé. Before moving on to Buhler, he headed the Central Research department at the German company KHS GmbH.
Example No.2: Nut and almond sterilization

Nuts and almonds are popular foods, but fairly tricky in bacteriological terms. This is reflected in the associated stringent legal regulations. If nut and almond producers and processors want to comply with the applicable standards and satisfy consumers’ food safety requirements, they must be able to rely on their production equipment. The Controlled Condensated Process (CCP) from Buhler Barth offers a pasteurizing process for all types of nuts, almonds, and oilseeds with a guaranteed bacterial count reduction of at least five orders of magnitude (Log 5). The process, which was developed by Buhler Barth in collaboration with food engineers and microbiologists, is based on the batch principle. The special feature of CCP is that pasteurization takes place under negative pressure and with an extremely low moisture input. Depending on the specific product being processed, all important parameters such as pressure, time, and temperature can be individually selected. “The secret of CCP lies in the combination of the three parameters,” explains Matthias Maier, Managing Director of Buhler Barth. “Our process operates with such high reliability that users no longer have to worry about any possible microbiological contamination of their products. We guarantee compliance with all legal standards.” The Controlled Condensated Process offers additional benefits. Matthias Maier: “Our process is extremely gentle, thanks to the low temperatures applied. Up to now, pasteurization changed the appearance of the products. But after treatment in our nut and almond sterilization system, almonds and nuts still look exactly the same as before – they retain their natural appearance. And neither does the feared detachment of the shells take place.”

The new CCP nut and almond sterilization system of Buhler Barth.

The new process is receiving a lot of attention in the marketplace and was distinguished by the renowned Institute of Food Technologists (IFT) with the Food Expo Innovation Award 2010 during the IFT Expo in Chicago. Matthias Maier: “This award encourages us to further develop the process by covering additional foods such as spices and specialty flours for medical applications.”

(bos)
Growing risks and an increasing demand for food safety solutions have prompted Buhler to launch an initiative for improving food safety.

**Tomorrow’s challenges**

The Food Safety topic is a top priority for consumers, customers, and Buhler alike. Neglecting food safety causes suffering and substantial financial losses for businesses. Buhler is, already today, supplying the global marketplace with leading-edge food safety innovations. However, these solutions are challenged by future higher expectations with regard to food safety. Industry experts forecast that by the year 2030, the food safety standards applied in the global food system will be on a par with those in the pharmaceutical industry. As a leading solution provider, Buhler feels committed to innovation in order to meet this challenge of the future. Food processors want to know how to raise the food safety standards in their plants to state-of-the-art levels in terms of people and equipment so as to eliminate risks and enhance confidence in food safety.

**Three strategic pillars**

In order to properly grasp the food safety issue, we must understand that there is no single definition of food safety. We have different risk levels and different methods of coping with them. As a result, we talk about different levels of confidence in food safety.

The Buhler Food Safety Initiative is based on three strategic pillars: Leadership, Innovation, and Compliance. Buhler as a technology group assumes the leadership by triggering an industry-wide dialog. For example, in North America three priorities were defined at Food Safety Round Tables: Collaboration, Hygienic Design, and Validation. In-house, Buhler has installed a network of so-called Buhler Food Safety Delegates. These individuals are the drivers in the business units and in the regions in the quest for outstanding food safety solutions so as to strengthen Buhler in the field of food safety.

**Innovations**

Buhler also understands it’s repositioning in the field of food safety as being a mission to further develop its business. The existing food safety solutions are to be further improved by rolling out new technology, new know-how and new services. E.g. with validated food safety solutions Buhler would create a good basis for decision making. Viewed from this perspective, the Food Safety Initiative is a systematic expansion of Buhler’s Customer Service program, which was launched in 2002. On the basis of its longtime tradition as a plant and equipment builder, Buhler plans to nurture its identity as a service company. Food safety is the latest step on the road to turning this vision into a reality.

Lastly, compliance with legal regulations by the plant, equipment and processes of Buhler pro-
vides the foundation for developing new solutions in the field of food safety. Buhler designs and constructs its plant and equipment on the basis of applicable regulations. However, the legislative environment is changing. For example, U.S. President Obama put the FDA Food Safety Modernization Act into force in January 2011, with the goal of giving consumers in the United States more confidence in the safety of foods.

Trust and respect
Our organization has numerous sound reasons to launch its Food Safety Initiative. The most important has not been mentioned up to now, for the core Buhler values also include trust and respect. Buhler with its existing expertise and experience has the duty to become involved in helping shape the global food safety system of the future. Our Group will do its best to roll out new food safety solutions and to strive for a better world for the benefit of consumers.

Jens Ostergaard
Head of Food Safety at Buhler, Uzwil
New high-capacity pasta line for short goods

Divella is an Italian pasta producer that can look back on a rich tradition and a successful past. But this company – Italy’s second-largest pasta exporter – is committed not only to tradition, but is also receptive to advanced technological innovations. Its new 6500 kg/h pasta line supplied by Buhler is equipped with two novel Polymatik pasta presses.

History scholars will continue to dispute for a long time to come who ultimately invented pasta. But one thing is clear for pasta aficionados: Italy is the homeland of this delicious food. In no other country has the production and preparation of foods made from durum semolina and water been pushed to such a level of mastery. This truth is also borne out by the national export statistics. In 2009, figures of the Unione Industriale Pastai Italiani (UNIPI) say that Italy’s pasta producers exported as much as 1,370,000 metric tons of dry pasta to almost every country on the five continents. The European countries accounted for the lion’s share with about one million metric tons of pasta. The largest importer in 2009 was Germany with 286,623 tons of Italian pasta.

One of the big ones

In Italy, there are three very large industrial pasta producers. One of them is F. Divella S.p.A. Set up in 1890 by Francesco Divella in the small village of Rutigliano in the Province of Bari (region of Apulia), the company has remained a family-owned operation to this day. It is managed by the third generation of the founding family by brothers Francesco, Vincenzo, and Pasquale Divella. And now, the young members of the fourth generation of the Divella family have already assumed responsibilities in various functions throughout the business.

The original grain mill for processing durum wheat has gradually evolved into today’s food group. Divella has been producing pasta since 1905, and since the seventies of the last century the Divella product range has also included other Italian cuisine specialties such as cookies (biscuits), fresh pasta, preserved tomatoes, sauces, olive oil, polenta, bakery products, rice, and of course also flours and semolina for household use. F. Divella S.p.A. today generates annual sales of about 250 million euros with 250 employees.

Significant pasta exporter

The headquarters of Divella are still located in Rutigliano in the midst of a vast Italian grape and durum growing area. The company produces the
semolina for making its pasta plus baking flours in its three own mills in Noicattaro and Rutigliano – each day some 1100 metric tons of durum semolina and 400 tons of flour. The total of twelve production lines installed in its large pasta factory in Rutigliano transform top-grade durum semolina into 200,000 metric tons of pasta of the “Divella” brand every year. The product range includes over 150 different pasta shapes. Of these 200,000 tons or about 75 % (160,000 t) are sold in Italy. Divella thus holds a market share of 9 % in the country. The balance of 40,000 tons are exported to Northern Europe, North and South America, Australia, Japan, and all countries of Eastern Europe. Moreover, 40 containers loaded with pasta are shipped to China every month.

Good track record of Buhler
As a consequence of the continuing market success of the pasta produced by Divella and the sharp growth in sales, the twelve production lines were stretched to their capacity limits. This prompted the company management to decide at short notice to replace one of the existing short-goods lines with a capacity of 2000 kg/h by a new C-Line® from Buhler with a capacity of 6500 kg/h. The decision in favor of Buhler was based on the good track record of Buhler pro-
duction systems at Divella. Dr. Francesco Divella: “In our pasta factory, you will find Buhler installa-
tions which have been operating reliably for over
20 years and which in conjunction with the durum
semolina that we process and our product formu-las enable us to make premium-quality pasta.”

**Opting for Polymatik®**
The Divella company management did not only
decide to order one of the largest short-goods
line ever supplied by Buhler with its capacity of
6500 kg/h, but also to equip the new facility with
two Polymatik pasta presses. “Before we opted
for the new Buhler C-Line® with Polymatik, we
asked an Italian colleague already operating a
Polymatik,” says Francesco Divella, explaining
the evaluation process. “We ran tests with our
durum semolina at our colleague’s plant. The
results fully convinced us in terms of both qual-
ity and economy.” Using a Polymatik press of-
fers several benefits at once. First, it enables
extreme flexibility in the application of the entire
line, which is crucial in the presence of such a
high capacity. Second, the compact twin-screw
mixer of the Polymatik pasta press allows con-
tinuous mixing of semolina and water in accord-
dance with the “first in, first out” principle, which
in conjunction with the enclosed dough extru-
sion process optimizes the sanitation of the pro-
duction process. Lastly, application of the Buhler
Polymatik allows fully automatic operation of the
entire production plant.

**Large, flexible, and top pasta quality**
The new C-Line® operated by Divella was in-
stalled in the most compact manner possible at
the location of the existing 2000-kg/h line.
Although its capacity of 6500 kg/h also makes
it Buhler’s largest model as a plant supplier, it is
shorter than some lines of lower capacity with its
length of just under 70 meters. Dr. Andreas
Kratzer, head of the Buhler Pasta market seg-
ment, explains: “The new giant installed at Divella is distinguished not only
by its compact design, but also by the operating flexibility it offers. Thanks
to the application of the Polymatik and the individual belt drives in the
dryer, the new pasta line can be switched over to any short-goods shapes
within a very short time.” But the high capacities achieved per hour depend
on more than just the use of the Polymatik presses. A contribution to high
output is also made by the twin-housing dryer with its belts with a width of
two meters and a half and the cooling section, which allows sanitary cool-
ing under absolutely dry conditions. Incidentally, the cooling section of the
new line impressed the Divella management to such an extent that they
had an additional existing pasta line equipped with the new cooler.

**Production started on schedule**
Replacing one of the twelve lines with ongoing production was a chal-
lenge for the specialists of Buhler in the sense that the inevitable loss of
production had to be reduced to the absolute minimum. The target specified was clear: Five months after the old line had been shut down, the new one would have to start production.

Preliminary work started after the signing of the contract in November 2009. The plant engineers created an exact schedule for proceeding. In June 2010, dismantling of the old pasta line started. Once the space had been cleared, the necessary building adjustments were made. Installation of the new "giant" of Divella started on schedule in July. Also the installation phase proceeded without a glitch or delay. And thus the goal was ultimately achieved: In the course of October 2010 – that is, even before the agreed five months had ended – the new 6500 kg/h line of Divella-line was producing its first pasta. “Compliance with the agreed delivery, installation, and start-up deadlines marked the optimal completion of our project,” says Dr. Fabio Divella, who as the representative of the fourth generation concerns himself especially with pasta production. “We were able to restart production on schedule and thus to satisfy the growing demand in the marketplace.” (bos)
Ensuring smooth operation

Maximizing efficiency by providing extensive customized services – this is what the Buhler Grinding & Dispersion business unit offers its customers throughout the life cycle of their production equipment.

Pastes for the electronics industry – for example silver pastes for manufacturing solar cells – or color filters for LCD display screens are but two of the many applications in which Buhler three-roll mills or bead mills are used. These are high-performance machines both in terms of productivity and the achievable product fineness values. This high performance can be maintained at an optimal level throughout the period of utilization of the equipment, thanks to tailor-made service packs. An extensive range of services and training courses ensures smooth operation and thereby allows the manufacture of top product qualities at high throughput rates – even in plants that have already been in operation for years.

Specialist training

Correct plant and equipment settings decide the quality of the end product. But a high level of operator knowledge is needed to take full advantage of all the available potential. “Especially our bead mills, which in certain applications use micro-grinding pearls, require fine adjustments that depend on the specific product. This is a challenge for operators,” explains Michael Meinhardt, head of the Services function of the Buhler Grinding & Dispersion business unit. “This means that it pays off for plant operators to delegate their operating crews to Buhler for training.” Training on the various machines by Buhler specialists is based on a hands-on approach and is held in the Centers of Competence (CoC) in For more information on Services, please contact:
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Customized range of services.
Uzwil / Switzerland and Viernheim / Germany or in the Regional Application Development and Education Centers (RADEC) in Yokohama / Japan, Wuxi / China, and Mahwah / USA. If required, training courses can also be held locally at customers’ sites.

In the centers mentioned above, Buhler also develops and fine-tunes manufacturing processes in order to give customers a sustainable competitive edge in the marketplace. Buhler experts conduct capacity tests in order to determine the right machine size and the optimal operating parameters for production.

**Maintenance and repair packs**

Bead mills and three-roll mills are rugged machines which are subjected to high stressing. Special attention must be paid to components particularly exposed to wear such as the rolls of three-roll mills or the process zones of bead mills. In order to minimize downtimes and production losses, these components must be checked at regular intervals and if necessary be reconditioned or replaced. The Buhler Service team will establish a customized service contract together with the customer which satisfies the customer’s specific production needs. From simple inspection contracts to full service packs, customers can make their individual selections from among different options in order to tailor their maintenance contracts to their specific requirements.

**Around the clock**

Should a repair become necessary, the required Buhler specialists will be available worldwide around the clock. A network of service stations ensures that a specialized technician will arrive on site within the shortest time possible in order to correct the problem. If necessary, the service technician will perform an analysis and order any spare parts required.

Preventive maintenance rules out unexpected production losses.
“Olympics for Buhler”

At the Interpack trade show to be held in Düsseldorf from May 12 – 18, 2011, Buhler will present no less than eleven innovations under the motto “Discover. Sustainable solutions for your success.” In addition, Buhler is inviting guests to its “Future Center” in Hall 3, Booth 3C43 / D28 to discuss the future of cocoa, chocolate, and coffee processing.

The Interpack is the world’s most important food processing show for packaging and processing. Every three years, the expert audience travels from all corners of the world to Düsseldorf to find out about the latest developments in the areas of packaging and processing. At the last Interpack held in 2008, the organizers counted some 2800 exhibitors and about 200,000 visitors from 121 countries. As explained by Thomas Bischof, head of the Interpack exhibition team of Buhler, the Interpack with its three-year rhythm sets the pace of development for the industry. “The Interpack is also a milestone for Buhler in its trade show agenda that covers several years. The seven Interpack days are so to speak the Olympics for Buhler, during which the terrain is charted for the next three years.”

1200 square meters of exhibition area

The exhibition booth of the Buhler Cocoa, Chocolate & Coffee, Pasta & Extruded Products, Sortex, and Aeroglide business units will be located at the same spot as at the Interpack 2008. And just like three years ago, the Buhler appearance will focus also this time around on processes and solutions for cocoa, chocolate, and coffee production. The Buhler booth covers an area of no less than 1200 square meters. Part of this total area is taken up by the Presentation and the Future Center area. Buhler’s appearance at the Interpack 2011 is governed by the motto: “Discover. Sustainable solutions for your success.” Thomas Bischof: “We are inviting our existing and prospective customers to embark on an exploration trip. We will show approaches and ideas for creating sustainable business success.”

The Presentation area offers Interpack visitors a glimpse backstage. They can gain an insight into innovative Buhler solutions that have been designed to enhance sustainability. The focus this year will be on “Energy Efficiency” and “Food Safety,” featuring papers and live demonstrations.

Eleven innovations

In terms of surface area, the eleven innovations from the areas of Cocoa, Chocolate, Coffee, and Extrusion will account for the main part of the Buhler appearance at the Interpack and will be presented to the specialist community in detail. Apart from these new developments, 14 proven systems will be displayed, including innovations of Buhler Sortex and Buhler
Aeroglide. Last, not least, Buhler will also present new solutions for growth markets, demonstrating how businesses with small production volumes can benefit from Buhler Group’s advanced technology solutions for cocoa, chocolate, and coffee production.

Discussions welcome
Just like three years ago, the Buhler Future Center is supposed to be the main attraction for the expert audience and the highlight of their visit to the exhibition. Together with customers, Buhler wants to shape the future of cocoa, chocolate and coffee processing. The Buhler experts will present their concrete ideas as well as their visions of future food production, for example cocoa, chocolate and coffee.

The Future Center offers visitors the opportunity to discuss and debate topics. Thomas Bischof: “Our intention is not only to show our innovations, but also to engage in intensive discussions with our visitors about the challenges of the future. We still vividly remember the uplifting experiences of 2008. Some of the results of the discussions held at that time have been incorporated full-scale in our innovations and can be viewed at this year’s event.”  

(bos)

More information: www.buhlergroup.com/interpack
Buhler innovations

At the Interpack 2011, the Swiss Buhler Technology Group will present no less than eleven new machines. The innovations on display cover the areas of Cocoa, Chocolate, Coffee and Extrusion.

CCP pasteurizing process

The Controlled Condensation Process (CCP) has been designed for germ control of bulk materials with a low water content. Developed for efficient inactivation of salmonella in nuts and almonds, the process can also be successfully applied for gentle pasteurization of spices and powders. CCP allows the degree of condensation on the product surface to be controlled, enabling assured inactivation by 5 log units. The original quality characteristics of the products treated such as taste, color, and shell surface are retained.

PreGrind™ cocoa pre-grinding

The combination of the PreGrind™ impact beater blade mill and the FineGrind™ bead mill allows the requirements of the cocoa grinding process to be fulfilled to a very high degree. The PreGrind™ impact beater blade mill reduces roasted cocoa nibs of a wide variety of qualities into a pre-ground cocoa liquor. Its integrated feature for mechanical calibration of the maximum particle size ensures optimal further processing by the FineGrind™ bead mills. The PreGrind™ impact beater blade mill is distinguished by its sustainable energy efficiency and food safety solutions. Its robust and functional design ensures high durability.
**FineGrind™ cocoa fine-grinding**

This low-speed FineGrind™ bead mill is used for grinding the preground cocoa to its end fineness. Its combination with the PreGrind™ ensures optimal and robust process of cocoa grinding. The functional design ensures easy and time-saving maintenance of both the FineGrind™ and the PreGrind™. The geometrically optimized process zone minimizes the energy input and ensures sustainable cocoa grinding. The combination of a PreGrind™ and FineGrind™ can also be applied for grinding nuts and oilseeds.

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**ShearMix™ SXMX mixer**

The ShearMix™ SXMX, which has been specifically designed for mixing and kneading chocolate and coating masses of average to high viscosities, mixes the ingredients into a homogeneous mass. Equipped with a variable-speed drive, the mixer becomes a kneader when operated in the high-speed mode. The result is an extremely efficient homogenizing of the chocolate mass. During the development of this mixer, special attention was paid to a high-sanitation design. The result: fast and complete discharge and optimal cleaning. The modular system ensures easy exchangeability of the Buhler SMC mixer.

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**FlexiNozzle™ depositing nozzle**

FlexiNozzle™ is the name of the revolutionary new nozzle for depositing a wide variety of masses across a broad range of viscosities. The new depositing nozzle with its self-closing character has a positive impact on depositing processes in the food industry. A high depositing accuracy, neat deposited shapes, and guaranteed cut of the product thread make the FlexiNozzle™ the ideal solution for a wide range of applications. The principle is simple yet effective: When unloaded, the nozzle is closed, and the valves shut off each other. As soon as a pressure acts on the nozzle, the nozzle will open for depositing the product. When the pressure drops again, the nozzle will automatically close and neatly cut off the thread of product – regardless of whether it has a low or high viscosity.
ChocoStar™ Compact moulding system

Perfect chocolate moulding at an attractive price: ChocoStar™ Compact is the name of the new Buhler chocolate depositing system for average throughput capacities ranging from 500 to 1500 kg/h. ChocoStar™ Compact is available in five basic variants, with a circuit system for solid articles constituting the starter version. The modular concept allows further functions – for example production of filled articles – to be added at a later date at relatively low cost. This enables the moulding line to be adjusted to the needs of an increasing product variety. ChocoStar™ Compact is a modular concept based on the proven Buhler process technology and available at an attractive entry price.

PowerShot™ 425 depositor

PowerShot™ 425 is a chocolate depositor designed for throughput rates ranging from 500 to 1500 kg/h. It constitutes the core of the ChocoStar™ Compact moulding system. Despite its attractive entry price, PowerShot™ 425 satisfies the high flexibility and quality requirements because it uses the proven PowerShot™ technology. The design of the new Buhler depositor optimizes handling, enabling very fast product changes and thus an increased uptime of the system. The production area is designed according to the latest hygienic design standards. This ensures easy and practical cleaning.

MultiTherm™ TC measurement unit

With its MultiTherm™ TC, Buhler is rolling out a new measurement unit for measuring the cooling curve of cocoa butter. On the basis of a high-accuracy thermal analysis, MultiTherm™ TC detects the crystallization enthalpy during sample cooling. The derived Buhler Crystallization Index (BCI) then shows the crystallization characteristics of the cocoa butter, allowing its quality to be made a prediction for subsequent further processing. MultiTherm™ TC additionally offers all the functions of the MultiTherm™ T Tempermeter. The new MultiTherm™ TC measurement unit is so far the sole instrument of this kind and in this price class capable of supplying reliable values within one hour. The MultiTherm™ TC thus replaces much more complex measuring procedures and expensive instruments.
RoastMaster™ 20 coffee roaster

The RoastMaster™ 20 coffee roaster with its processing capacity of 60 to 80 kg/h has been especially designed for flexible applications in small to mid-size roasting operations. The new design and the use of cutting-edge process technology ensure high-quality and uniform roasting. The innovative and easy-to-use control system guarantees a consistently high product quality and allows individual control of the roasting process at all times. The coffee and air temperatures are continuously recorded. The optimized roasting parameters can be separately saved for retrieval whenever needed. Manufactured from high-grade material, the new roaster offers top sanitation and practical cleaning.

GrindDefine™ coffee grinder

The GrindDefine™ coffee grinder has been especially designed for highly accurate grinding with exact particle size distribution. Two-sided roll gap control ensures a consistently high product quality. This makes the GrindDefine™ the ideal solution for fine grinding and for coffee capsule applications. The modular design of the grinder allows one-, two-, or three-stage grinding as well as homogenizing or compacting for use in all fields of application involving instant, filter, and espresso coffee up to the point of micro-milled coffee. An efficient cooling system protects the flavor in the best possible way. Moreover, operation under inert gas conditions is also possible.

PRIOtwin™ extruder

With its new PRIOtwin™ extruder, Buhler offers a solution tailored to the needs of breakfast cereals, food ingredients, and pet food production. This extruder operates with process pressures as high as 150 bar, a maximum torque of 11.5 Nm/cm², and maximum temperatures up to 200 °C and can therefore satisfy a wide variety of requirements. The lean system concept is particularly suited to processes involving large batches of a given product formula. A newly designed transition from the preconditioner to the extruder enables the product to be fed to the extruder without requiring any screw feeder. The functionality of the system ensures reliable production processes meeting high sanitation standards as well as unrivaled cost-effectiveness of production.
Buhler at the Interpack 2011 –
Hall 03, Booth 3C43/D28

Meeting room

Bistro

Chocolate bar moulding

Buhler Future Center

Chocolate Mass

Extrusion
Great Wall Motors

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Need for production know-how

Two turnkey die casting cells, customized production concepts, and extensive on-site support. These are the elements with which Buhler enables the Chinese automobile manufacturer Great Wall Motors to produce its own aluminum engine blocks.

The Great Wall Motor Company Ltd (GWM) is a large international group of companies. GWM is one of the up-and-coming Chinese carmakers and was China’s first private automobile producer to be listed on the Hong Kong stock exchange. In 2009, the Main Business Revue listed GWM among the “500 most important companies in China” and the “30 largest automobile producers of China.” The headquarters of Great Wall Motors are located in Baoding City, some 200 kilometers southwest of Beijing in Hebei Province.

Capacity increase to two million vehicles annually

The Great Wall Motor Company was set up in 1976 and has grown steadily ever since. Today, the Great Wall Motor Company incorporates more than 30 companies with a total payroll of 28,000. Its different factories are mainly located in the industrial zone of Baoding. In 2007, GWM had a manufacturing capacity of 200,000 cars a year. But its production capacities are being continuously expanded. At present, GWM is capable of manufacturing 800,000 cars annually, and by the year 2015 this figure stands to rise to 2 million.

The range of models comprises three vehicle groups: sport utility vehicles (brand: Haval), passenger cars (Voleex), and pickups (Wingle). In all, GWM offers 15 different models. About 40% of output is exported to over 100 countries and regions.

In-house engine block production

In its efforts to reduce the weight of its cars and thus cut their carbon emissions, GWM started in 2006 to equip its vehicles with engine blocks made of aluminum. Up to then, GWM had purchased its engine blocks from vendors. Initially only incorporated in the Voleex models, the proportion of such engines increased rapidly. The fast rise in the number of these components soon gave rise to the question of building them in-house. The “Die Casting” project was thus born. Its goal was to construct the company’s own factory for manufacturing engine blocks of die cast aluminum.

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The team of technologists of the Great Wall Motor Company.
**Turnkey systems**

Buhler-supplied plant and equipment has always had a very fine reputation in China. But this reputation is not founded solely in the quality and reliability of its die casting machines. It is also due to the sound process and production know-how of Buhler’s specialists. This was reason enough for the Chinese carmaker GWM to select Buhler as its partner for establishing its own in-house engine block production facility. The first order comprised the supply of two complete turnkey production systems with project support from A to Z – from inception of the overall plant; creation of the die designs; system supply, installation, and start up; to fine-tuning of the manufacturing process. All these steps were made in close cooperation with the customer. After all, once the project had been executed, GWM was not only to have top-class systems but also the skills to manufacture engine blocks using the aluminum die casting process.

**Twice 2700 tons’ locking force**

Great Wall Motors purpose-built a 12,000 square meter large hall for its new foundry in the industrial zone of Baoding. After the final construction stage, up to 30 casting cells of a wide variety of sizes will be in service there.
The heart of the two new die casting cells of GWM consists of one Buhler Evolution B 270 horizontal cold-chamber machine each (locking force 2700 metric tons). These machines are supplemented with peripheral equipment supplied by local vendors plus European partners. The cylinder liners are accurately positioned by a combined insertion and extraction robot. This unit at the same time extracts the cast components and handles all the parts in the casting cell. The dies are sprayed using a linear two-axis device based on leading-edge spray technology in order to ensure efficient application of the release agent and short cooling times. The thermal balance of the die is controlled by a combination of oil and water temperature control units, and a vacuum system supports pore-free production of the engine blocks. The molten metal is fed to the die casting machines by a ladling device allowing a high ladling accuracy and reducing the cycle times. A high-performance exhaust hood keeps the ambient air clean, which is highly appreciated by the operators of the cell.

**Intensive training**
The production of engine blocks of die cast aluminum is extremely demanding. The components are complex and their wall sections in some cases differ widely – with extremely thick sections at some points and rather thin ones at
others. Controlling the thermal balance of the production die is anything but easy, and the pressure-tightness of the components requires minimum porosity. In order to rapidly achieve a stable production process, very much production-related experience is needed beside sound concepts and systems.

Buhler die casting specialists from China and Europe supported the technologists of Great Wall during the start-up phase. The knowledge was transferred by intensive user training on how to operate the systems and on the specific process technology. This enables the benefits of the Buhler concepts to be fully utilized and optimal results to be achieved. Following initial sample casting of three-cylinder engine blocks, both production systems for the new four-cylinder engines are now up and running at the Great Wall Motor Company – round the clock. 

(mc)
Centralized kneader control

Having the right quantities available at the right time and in the right place: The centralized Buhler control system installed at the Swiss fresh dough producer Leisi (Nestlé Suisse SA) ensures a consistent quality of the finished product.

In 1938, a young bakery and confectionery master named Werner Leisi opened a food business in Basel together with his wife. At some of his customers’ request, he started producing dough by mechanical means. The resulting market success led in 1961 to the construction of a cake dough factory in Wangen near Olten. In 1984, this Swiss bakery goods specialist launched the world’s first finished sheeted dough. Marketed by the name of “Quick,” this ready-to-use fresh dough on baking paper quickly became a hit in the marketplace. Today, it is a firm part of modern-day cuisine in the form of pizza, cake, or laminated dough. “Leisi” has become synonymous with sheeted, ready-to-use dough.

Since 1989, the Leisi company has been completely integrated in the Nestlé Suisse SA Group. Today, Leisi with its 400 employees produces more than 42,000 metric tons of fresh dough annually, destined for the Nestlé brands in the European markets. This makes Leisi the largest fresh dough production site in Switzerland by volume.

Matched the components

The most important steps in the production of dough are accurate proportioning of the different ingredients such as flour, water, lemon juice, or manual additives plus subsequent kneading. Buhler supplies the bakery industry with complete raw material receiving (intake) systems, storage bins plus proportioning and weighing equipment and has accumulated vast experience in the development of control systems for commercial-scale bakeries. In January 2010, the automation specialists of Buhler were entrusted with raising the existing 15-year-old Buhler control system for pizza dough kneaders and cake and laminated dough kneaders to state-of-the-art levels.

Headed by project manager Roman Frei, process control system programmer Harald Neelsen and PLC programmer Patrick Zeier tackled the job. A mere four months and a half later, the new centralized control solution was put into service. This extremely short development time was only possible thanks to the close cooperation with Nestlé employees Stefan Aebischer (project manager), Stefan Roth (production planner), and Erwin Traut (technologist).

Minimized rebuilding time

A new programmable logic controller (PLC) was incorporated in the control cabinet, the electronics of the scales were replaced, various adjustments
were made to the network topology, and modifications and additions were made to the local kneader controls. After a mere three days, production restarted on the first kneaders. Then, during another seven days, the entire system was commissioned. This short downtime was made possible by careful preparation and it ensured that Leisi would incur only minimal production losses.

**Always the correct mixing ratios**

Though the functions of the control system developed by the two automation specialists on the basis of the Buhler WinCos standard appear to be fairly straightforward, they are in fact highly complex. Each of the dough kneaders produces ten 160–220 kg batches of dough per hour in different variants. As the central control unit, the PLC ensures that all dough kneaders are supplied with flour and liquids at the right time, in the right sequence, and with the right blending ratios according to the selected recipe. In addition, the PLC also controls the kneading formulas, which include the kneading time, the kneading direction, and the speed of the kneading tool. The real challenge starts at the latest when – after the fresh dough has been cut to size – the trimmings are returned to the dough mass during the kneading process, which changes the mixing ratio. On the basis of accurate adjustments, the Buhler control system ensures also in this case that the right ingredient blend is processed in the kneader in accordance with the basic product formula. It continuously adjusts the supply of raw materials so that the kneader always discharges dough of a consistent quality. In addition to ensuring the correct input into the kneader, the WinCos control system also creates all the required logs and statistics in order to ensure permanent retraceability of production. (bos)
Food production is subject to very high dynamism worldwide. Demand and supply are changing continuously. But consumers want ever-new products – and quality, health, convenience, and food safety are the drivers behind this trend. Innovative grain millers are therefore seeking ways and means to differentiate themselves on the basis of specialty flours. As a global leader and partner in the field of process technology, Buhler is faced with the challenge of showing modern-day millers and bakers sustainable solutions apt to optimize the quality and characteristics of their flours in order to satisfy their customers.

For this purpose, the Bakery Innovation Center (BIC), which was opened in Uzwil at the end of 2010, offers new application concepts in conjunction with cutting-edge process technologies. The customized solutions developed in the BIC comprise all the steps from raw materials checking to the perfectly processed end product. The BIC is also available to customers as a neutral facility for their own developments.

Beside targeted product and process developments, the BIC also offers training courses and supplements the flour milling courses of Buhler with its bakery-specific subjects. In addition, the BIC holds in-house continuing education courses in order to disseminate existing knowledge throughout the Group.

(bos)
First conference for managers of the feed industry

In October 2010, the Buhler Feed & Biomass business unit held its first conference for managers of European feed producers in Zurich. The central topic of the event was “Sustainable production of animal feeds.” Speakers included experts from Kansas State University, the National Veterinary Institute of Sweden, the Swiss Federal Institute of Technology in Switzerland, the Booz & Co. consultancy, and Buhler feed specialists. Their presentations were followed by plenary discussions and talks in individual groups. In view of the event’s success, it has been decided to hold the conference as a regular discussion platform every two years. The agenda of the next conference in 2012 has already been defined: the art of feed production, alternative and new feed ingredients, efficient utilization of input resources, feed and food safety, best practices, and case discussions.

New plansifter factory in Xian

Due to urban development measures, the plansifter factory in Xian/China that Buhler acquired four years ago had to move from its original site to a new building in the industrial park on the outskirts of Xian. In the presence of customers, government officials, and guests, the new factory was officially opened in a ceremony last October. The new factory operates on the basis of the Buhler Total Synchro concept and manufactures plansifters only. Plansifters are key pieces of equipment in the grain grinding process. In addition to meeting the technological requirements, plansifters also require very high design and manufacturing expertise due to their special gyratory motion.

Buhler is investing in Uzwil

The headquarters of Buhler in Uzwil, Switzerland are to remain the Group’s principal manufacturing site. In order to ensure the long-term viability of the location, the Board of Directors has earmarked 70 million Swiss francs for rebuilding the production facility in Uzwil. The factory will be rebuilt in two phases, with Phase 1 scheduled for completion at the end of 2014 and Phase 2 at the end of 2015. The factory premises in Uzwil have grown historically over the decades. Renewal of the current site layout (buildings and infrastructure) is required in order to maintain Buhler’s competitiveness also in the future. The new factory will create the basis required for optimal implementation of “Total Synchro” flow production principle.

New Chief Technology Officer

Effective January 1, 2011 Ian Robertson has succeeded Diethelm Boese as Buhler’s Chief Technology Officer. Ian Robertson is a British national, 40 years old, married, and with four children. He graduated in chemical engineering and then obtained his doctorate in process engineering from the University of Wales. In the past 12 years, Ian Robertson worked in various functions for Nestlé. He established the Chocolate Center of Competence for Nestlé and headed the Food Science and Technology unit in Nestlé’s research center in Lausanne, Switzerland.
Once a Buhler customer, always a Buhler customer

The Grüninger miller family has turned a dream into a reality: It celebrated the start-up of its new 100t/24h flour mill right in time for the 75th anniversary of its company Willi Grüninger AG in Flums, Switzerland. The new Grüninger mill satisfies the highest standard that Buhler can offer for flour mills.

Willi Grüninger AG with its annual grain processing capacity of 23,000 metric tons is a rather small milling company on an international scale. In Switzerland, it is currently the Number 6. Beside a few industrial customers – including the retailing chain Aldi Suisse – Willi Grüninger AG supplies its products primarily to small customers in the eastern part of the country. The company’s own fleet of 15 trucks also supplies customers in the remotest corners of the Grisons in Eastern Switzerland with standard bread flours and various specialty flours such as that for making “root” loaves.

Getting ready for the future

In 2010, Willi Grüninger AG celebrated its 75th anniversary and at the same time the commissioning of its new 100t/24h flour mill, which is located in the industrial zone of Flums. The Grünings’ made the decision to spend 23 million Swiss francs on this facility in 2006. “At that time, the question was how we should secure the long-term viability of our mill,” says Executive Manager Willi M. Grüninger. “Our existing 50t/24h mill was technically obsolete, and in addition we were encountering increasingly frequent production bottlenecks.” The Grüninger siblings decided to make a stride forward into the future. Willi M. Grüninger: “We wanted to raise the technical standards of our production equipment to a level that would enable us to cope with the fiercer competition arising from the expected further liberalization of the markets. And we have now succeeded. With our new mill, we have attained an international level and are excellently equipped to face the future. The fourth Grüninger generation can now step in.”

Partnering with Buhler

For the Grüningers, it was clear right from the moment they made their decision that Buhler would be entrusted with the project for designing and constructing the new mill. “We have always handled all our mill projects with Buhler,” says Willi M. Grüninger, summing up the situation. “The Buhler headquarters are located just a short distance from our facility, so to speak at our doorstep. And Buhler has convinced us over the years with its high

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Eight Antares four-roller mills are installed on the roller floor of the new Grüninger flour mill.
quality and outstanding service. Buying a flour mill from Buhler is like purchasing a Mercedes-Benz. You know what you get. As Grüningers, our rule is: ‘Once a Buhler customer, always a Buhler customer!’

The first meeting was held in October 2006; the ground was broken on October 31, 2008; and the new mill was officially opened on October 1, 2010 as part of the 75th anniversary celebrations of the Grüninger family-owned company. Willi M. Grüninger: “The meticulous project management of Buhler enabled us to easily meet the scheduled dates specified. Our birthday present came right in time.”

The New Art of Milling
In terms of process technology, sanitation, and automation, the new Grüninger flour mill reflects the highest Buhler standard, the “New Art of Milling.” Willi M. Grüninger: “We insisted on having a state-of-the-art facility. And that is what Buhler built for us. We are proud of serving for Buhler as a showcase plant and walking interested visitors through our new plant almost on a weekly basis. The flow chart of the new Grüninger flour mill is based on a multistage breaking system, a grading section, and a reduction process in which the stock is separated by quality, which ensures a maximum extraction rate.”

In the heart of the new mill, the grinding system, the three Buhler stars Antares, Sirius, and Polaris produce top-quality flour. The eight Antares four-roller mills are combined with a ten-compartment Sirius sifter with Novapur sieves and two Polaris purifiers. Using the three Buhler “stars” produces excellent grinding results with clearly measurable added business value.

Ahead of and after grinding
Cutting-edge process technology is applied not only in the grinding section of the new Grüninger mill. As far upstream as in the grain receiving (intake) system, the grain is graded and stored on the basis of defined quality parameters. In the cleaning section, a Combi-cleaner performs four...
important process operations at once: separation, grading, destoning, and removal of low-density impurities. Finally, an optical sorter of type Sortex Z+ ensures that foreign seeds and discolored grains are removed with high reliability. The very high degree of cleaning enables the Grüninger mill to produce high-grade end products such as flours for making specialty bakery products or fresh dough as well as whole-grain products of high purity.

At the end of the production chain comes blending and packing. The new mill of Willi Grüninger AG is equipped with an advanced flour blending and mixing system. Fed from the 24 large bins of the flour storage and handling system (1000 metric tons’ holding capacity), a batch mixer produces consistently high flour qualities by selective blending of basic flours and other ingredients. For efficient bagging and stacking, a high-speed bagging carousel and a fully automatic, highly efficient automatic palletizer are available.

Control and sanitation
The new 100 t/24 h flour mill of Willi Grüninger AG is fully automated. Its Buhler WinCos.r2 control system allows the entire production facility to be operated and monitored by two persons. “Our mill runs 24 hours a day,” explains Willi M. Grüninger. “During the daytime, two employees monitor production, and in the nighttime the plant runs unattended and is remotely monitored. In the event of operating trouble, the control system will alert the stand-by crew by SMS.” In conjunction with the systematic use of stainless steel and the absence of corners – the transitions between the floor and the wall are rounded throughout the mill – the latest Buhler flour milling technology ensures top food safety and thanks to WinCos.r2 also complete retraceability back to the grain trader. Grüninger also applies the new Buhler maintenance software WinCos.C@re. Willi M. Grüninger: “WinCos.C@re has already paid off. The software once reported that a machine was not running smoothly. Upon checking, we found that a V-belt was defective. We were thus able to avoid damage and high consequential costs.”

Using WinCos.C@re has a second positive effect. Willi M. Grüninger: “Our mill has been IFS-certified. Regular recertification is greatly simplified by WinCos.C@re, since it is enough to prove that the Buhler maintenance software is monitoring the plant.”
Antares premiere in South America

Grande Moinho Cearense is a traditional milling company in the northeast of Brazil. Now it is also the first flour mill in South America to have been equipped with a Buhler installation boasting Antares roller mills and Novapur sieves.

Fortaleza is a port city brimming with history and located in the northeast of Brazil. Founded in the middle of the 17th century by the Dutch, Fortaleza today has a population of 2.5 million and is thus the country’s fifth-largest city. It is the capital of the Federal State of Ceará and an important center of industry and commerce. Three grain mills are lined up in the port of Fortaleza, which share a ship unloading system equipped with two Portalino ship unloaders supplied by Buhler.

Farinha Dona Maria

One of the three mills is the Grande Moinho Cearense (GMC). This family-owned operation was set up in 1959 and is part of the group of companies of Carlos Francisco Ribeiro Jereissati. The Grande Moinho Cearense mill is headed by President Roberto Schneider. With its 175 employees, GMC generates annual sales revenues of about 175 million U.S. dollars.

The Grande Moinho Cearense facility processes semi-hard and hard wheat from Argentina, the United States, and Canada. They are used for making flours for bakeries and for pasta and cookie (biscuit) production as well as various household flours. To consumers, the flour produced by Grande Moinho Cearense is known by the name “Farinha Dona Maria.”
In view of the economic development of the northeastern part of Brazil, Grande Moinho Cearense decided in a first step to increase its storage capacity from 22,000 to 35,000 metric tons and then to double its grinding capacity to 1000 t / 24 h.

**Generating added value**

After the first step had been done and the storage capacity had been increased, planning work started on the new mill. Following a thorough and detailed evaluation, GMC decided to entrust Buhler with the installation of a new 500 t / 24 h flour mill in its existing building. “We opted for Buhler as our partner because we are convinced that the latest Buhler technology is the best we could find,” explains Roberto Schneider. “The quality of the Buhler milling systems and its service before, during, and after project implementation is second to none. We were certain that Buhler would enable us to achieve our goals of increasing our extraction rate, improving our process reliability, and reducing our maintenance costs.”

The new facility of Grande Moinho Cearense started production a few months ago. It is South America’s first mill to be equipped with the new Antares roller mill with Titanium rolls and a plansifter with Novapur sieves. Its cleaning line has a capacity of 24 t/h and is provided with Flow Balancers for achieving optimal blending of the raw wheat. Two differential feed scales of type Transflowtron ensure correct weighing and proportioning of the raw material through the cleaning section up to the roller mills. Combi-cleaners, separators, and scourers in combination with an air-recycling aspirator remove all possible impurities from the product stream. A wheat sterilizer prevents biological contamination, for example by insect-infested grains.

**Break passes and Titanium rolls**

The grinding section of the new facility operated by Grande Moinho Cearense is equipped with Antares roller mills, Sirius plansifters, and Puromat purifiers. The roller floor boasts twelve four-roller mills and five eight-roller mills of the latest
Buhler generation. The roller mills applied for the first two break passes are equipped with highly wear-resistant Titanium rolls. Flour sieving is done on three Sirius plansifters with ten sieve compartments each. These sifters are equipped with the newest Novapur sieves of polyurethane and stainless frames. Smooth pneumatic handling of the mill stocks is ensured by airlocks, cyclone separators, and low-pressure dust collection filters. All flours are also passed through small plansifters, magnetic separators, hopper scales, and sterilizers. The flours are transferred from the mill to the flour storage and handling system (flour silo) by generously sized pneumatic Fluidlift conveyors. At the end of the Buhler installation are the bagging lines. The MWPL bagging carousel installed there is capable of handling 800 50 kg bags an hour. The bran is packed by a separate bagging line into 40 kg bags. The capacity here is 600 bags per hour. The new facility of Grande Moinho Cearense is controlled by a centralized Buhler WinCos.r2 control system. (bos)

“The new mill achieves a higher extraction rate with the same flour quality and less maintenance.”

Roberto Schneider
President Grande Moinho Cearense
WinCos.C@re for service management

It has been available in the marketplace for only a year and has already sold 30 times over: WinCos.C@re is a successful service management tool for Buhler plants and covers everything from maintenance planning to parts procurement.

The Buhler WinCos.C@re service management tool has been ready for the marketplace since 2010 – also as an autonomous software package. Today, as many as 16 plants worldwide are already operating with WinCos.C@re. An additional 17 plant operators have ordered WinCos.C@re.

WinCos.C@re plans and organizes maintenance and servicing, inventory management, and the procurement process of entire plants. WinCos.C@re maps the whole plant installation. It offers all the required operation manuals and spare parts catalogs in an electronic form. What is more, its inventory management feature supports the correct procurement of the spare parts that are needed. Of each individual machine (Buhler and non-Buhler alike) of the plant monitored, WinCos.C@re maintains a so-called “job card” listing all the required maintenance measures, test criteria, and life cycle information.

The basis for the service jobs to be carried out is formed by the specific maintenance parameters, with customized additions being as readily possible as the selection between date-based or service-hour-based maintenance intervals.

WinCos.C@re reports clearly list all the maintenance and servicing jobs that are scheduled, must now be carried out, or have been done. This makes WinCos.C@re the ideal service management tool for covering the entire process chain from maintenance scheduling and spare parts inventory management to correct spare parts purchases in a lean and efficient fashion.

WinCos.C@re: small unit – big help.

WinCos.C@re is a service management tool whose maintenance function also complies with the International Food Standards (IFS) requirements. Documentation that a plant is monitored by WinCos.C@re supports regular IFS certification.

The Customer Service department of the Grain Processing division can offer customers around the world support through the Internet. Moreover, customers using WinCos.C@re benefit throughout the life cycle of their plants from additions, updates, and support services of this user-friendly service management software.

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Getting the shape right

Over the past few years, optical sorters have revolutionized the sorting of bulk commodities. The latest optical sorters of Buhler Sortex function not only as color sorters, but if required also as shape sorters or as combined color-and-shape sorters.

The first optical sorting machines sorted bulk commodities on the basis of color patterns. As a consequence, the first machines were called “color sorters.” Color sorting covers the majority of all sorting applications to this day. Today, the term “color sorting” refers to sorting by monochromatic cameras (grayscale) and color cameras as well as the use of light in the visible and infrared wavelengths.

New applications

In the course of the development of optical sorters, fields of application gradually emerged in which the capability of shape-sorting products is essential. The term “shape sorting” refers to the detection of product defects either on the basis of shape alone or the combination of shape and color.

One of the main drivers for the introduction of shape sorting technology into optical sorting machines was long the so-called “killer application” of detecting stalks on fine green beans. Once shape sorting had been identified as the optimal solution for sorting green beans, the principle was soon adapted to other applications in the fruit and vegetable sectors. Finally, shape sorting also became an important function in the optical sorting of dry commodities such as coffee, nuts, and pulses.

Object separation

The transfer of shape sorting to dry commodities brought new challenges, which required further enhancements to the technology. For example, dry products tend to be sorted at comparatively greater throughputs per width of machine, resulting in more clumping of the product stream. One of the main improvements in shape recognition was the addition of an image processing technique known as “object separation.” It enables sorting by shape of individual items even when some of these touch other product pieces.

Sorting by shape and color

Today, shape sorting is one of the core technologies of Buhler Sortex and is available on the company’s entire range of bi-chromatic optical sorters.

Shape sorting is an important add-on to color sorting. In most applications, the optical sorting machine sorts simultaneously by both color and shape. During shape sorting, each object is classified as either good

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or defective based upon its silhouette. This silhouette is the two-dimensional shape of the object. For example, an optical sorter “sees” a round object such as a pea as a circle, not a sphere.

**Two points to check**

There are two points to check in preparation for shape sorting on an optical sorter. The first is the feed quality of the product stream. The flow of the product past the cameras of the sorter must be as uniform as possible, ideally with each product item separated from the rest. In practice, however, some product will always be touching other product. If the product items are approximately round in shape, the technique of object separation can be used to separate touching product. The second point to check is that the silhouette of the product is a true image. Misleading results can occur if the glass of the machine is not kept sufficiently clean or if there is an excessive amount of water in the product flow.

Sorted stalks and bean fragments – the result of shape-sorting green beans.
Die Casting Tech Center opens in Bangalore

On February 9, 2011 the new Technology Center of the Buhler Die Casting business unit was officially opened in Bangalore, India. The ceremony was attended by Achim Klotz, head of the Buhler Advanced Materials division (left); P.N. Sandhu, representative of Alucast (right); Bernhard Fritsche, head of the Buhler Die Casting business unit; and numerous guests. The new Die Casting Training Center was built in collaboration with Alucast, the Indian die casting association. It is part of the Buhler affiliate in Bangalore. The heart of the Training Center is an automatic die casting cell of type Buhler Ecoline 53. This facility serves for training operators in the maintenance of die casting cells based on the latest Buhler casting technology. The new Die Casting Training Center is the first of its kind in Asia.

Successful anniversary year

The Buhler Technology Group looks back on a very successful fiscal 2010. The anniversary year will be remembered as the best ever so far in the history of Buhler. The order intake of CHF 2160 million or 21 % more than a year ago passed the mark of two billion Swiss francs, although the first quarter was still characterized by the turmoil in the global economy. All three divisions of the Group contributed to growth. The sharpest increase was 48 %, achieved by Advanced Materials, followed by Food Processing (+27 %) and Grain Processing (+15 %). The marked rise in order intake was attributable especially to the emerging markets in Asia (+39 %), to North and South America (+19 %), and to the Middle East (+96 %). Thus, business is now evenly split among the four main regions of Buhler: Europe, Middle East/Africa, Asia, and North & South America. An appreciable improvement was also achieved in Group sales, which increased 11 % to CHF 1907 million (+13 % adjusted for exchange rates).

Innovation Competition: India wins

The final of the second Buhler “Innovation for a better world” competition took place in Zurich at the start of the year. Of the 105 entries, four were selected for the final. The finalists from India (two teams), Switzerland, and a combined U.S. and Swiss team were given 20 minutes each to present their business plans to a prestigious jury. The winner of the “Innovations for a better world 2010” competition was Team BranBourn (photo), followed close behind by Team Silicash. Team BranBourn from India put forward a plan to add value to rice bran by transforming it into bran oil, functional food ingredients, and micronutrients. Team Silicash, also from India, propose that the minerals (ash) contained in rice bran be transformed into silicates for uses in the tire, agrochemical, construction materials, and pharmaceutical industries. Teams BranBourne and Silicash are offered the opportunity to attend a study course at the Harvard Business School.
The Buhler customer magazine Diagram has continued to evolve and now has a distinct face. The 22nd issue of January 1959 is the first time that Buhler representatives appear personally in the Diagram. In the first such editorial in Diagram No. 21, it was “Buhler Brothers” that addressed the readership. Then, in Diagram No. 22, the Director of the Milling Engineering department Max Zollinger directly addressed the “Dear Business Friends” on behalf of “Messrs. Buhler Brothers and their staff,” wishing them a happy New Year.

The Diagram issue No. 22 also took new approaches in terms of contents. For example, the “leading article” describes possibilities of automating modern flour mills. Though the still unknown author is of the opinion in the introduction that “modern Buhler grain milling plants are already essentially automated,” he does also think that the level of automation could be greatly increased in the areas of grain and flour handling. Examples of improvements in bulk storage, cleaning, and flour storage and handling offer the reader concrete ideas of wheat he means.

In the second part of the Diagram issue No. 22, headed “Modern Buhler mills the world over,” exemplary flour milling projects in Cuba, the United States, Canada, India, and Italy are presented. The reader thereby gets to know the Molinera Oriental SA in Santiago de Cuba, the Graber Mills in Canton/Ohio, the Ogilvie Flour Mills Co. in Montreal, the Krishna Flour Mills in Amritsar/India, the Jawala Flour Mills in Bangalore/India, and the Molino Niccolai in Castellina in Italy. (bos)