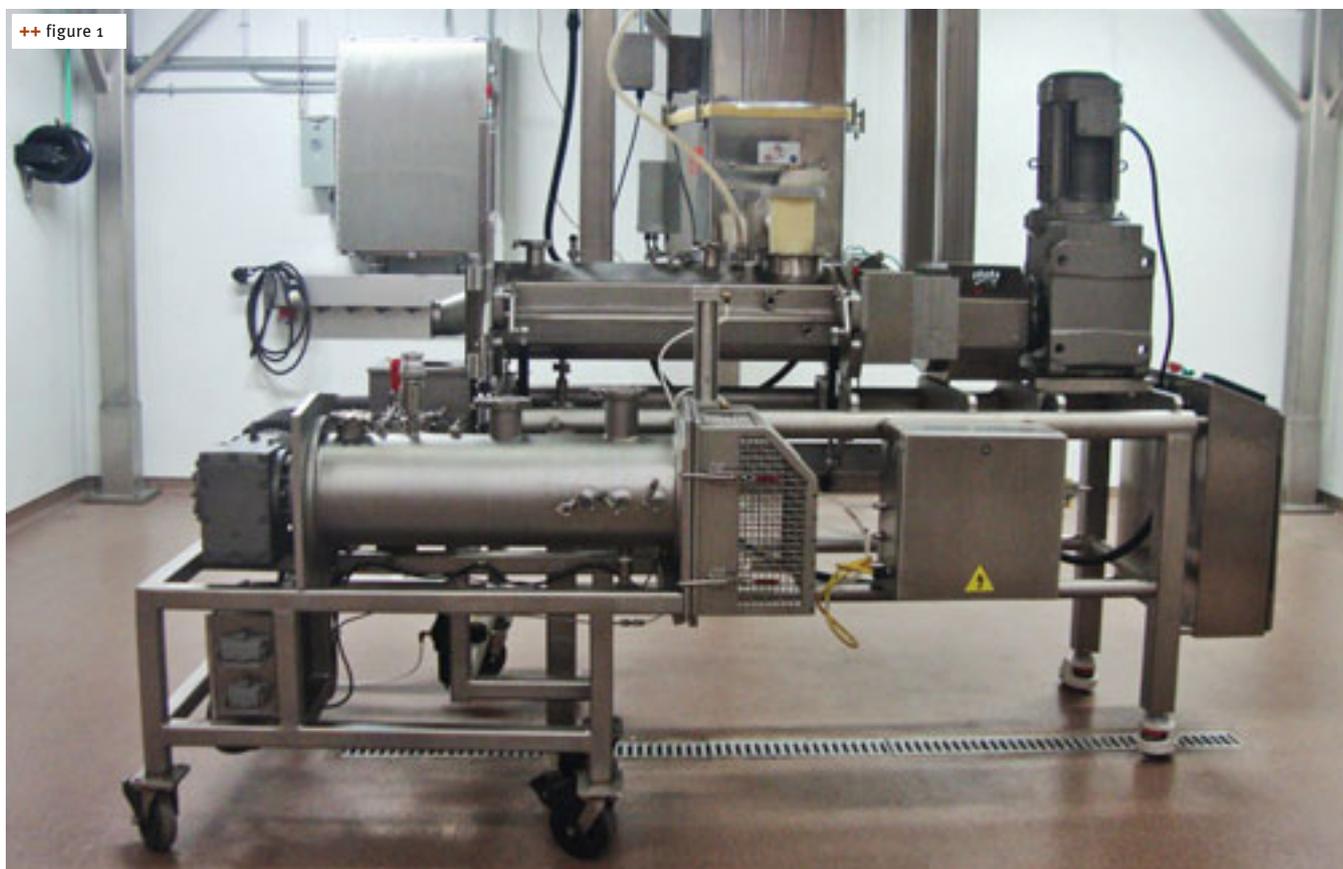


A new mixer for buns

FOLLOWING A HALF YEAR COOPERATION BETWEEN READING AND AMF, BOTH MEMBERS OF THE MARKEL GROUP, THEIR FIRST CONTINUOUS MIXING SYSTEM FOR BUN PRODUCTION HAS BEEN INTRODUCED

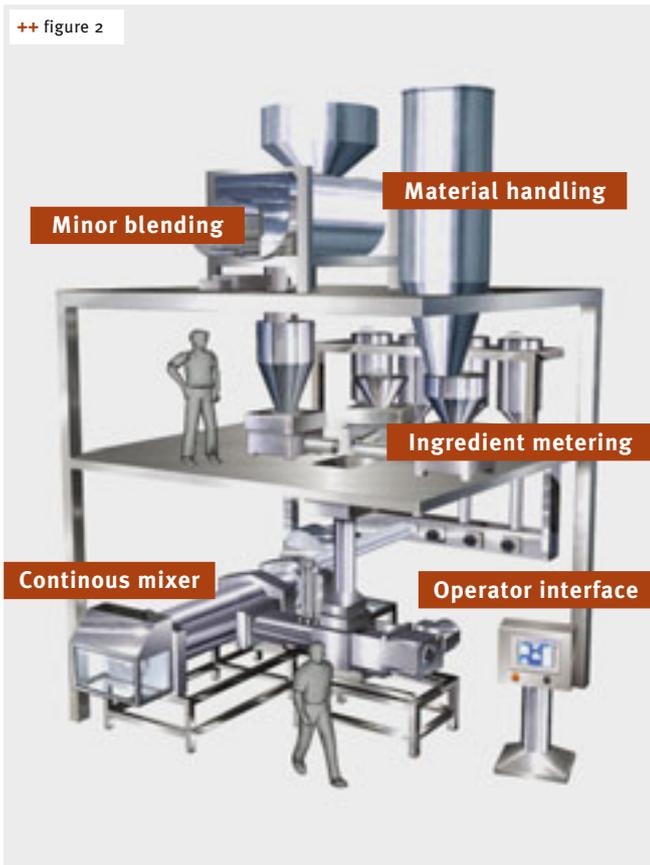


++ figure 1
AMF's new continuous mixing system for buns, developed together with RBS

Since September 2012, Reading Bakery Systems (RBS) from Robeson, Pennsylvania, USA, has been a part of the Bakery Group of the Markel Corporation from Richmond, Virginia, both USA. It is the latest acquisition of the finance company to which AMF Bakery Systems from Richmond also belongs. However, Markel doesn't only want to have a bunch of companies in the baking industry, it wants them to share technologies, to expand and therefore strengthen their product offering. RBS and AMF haven't wasted any time either. After six months of R&D efforts they are now preparing their first combined installation – a continuous mixing system for bun production.

Each of Markel's companies has its own specialty. RBS has been the expert for Exact Continuous Mixing Systems for the snack food industry for more than 20 years. Over the years, technology and equipment have evolved to allow the company to produce a wide range of snack foods ranging from pretzels to bagels, pizza, donuts and dinner rolls. AMF is the expert for high speed production lines for bread, buns and soft rolls. Furthermore, AMF has a worldwide manufacturing, sales and service infrastructure. Together, they have developed

a complete bun production line after the continuous mixer in the RBS Science and Innovation Center. The plant follows mixing and metering equipment, which feeds the raw materials into the mixer. The transition to the mixing unit depends on the customer's wishes and if he/she wants to use sourdough, pre-dough etc. The continuous mixing system itself can be divided into three different units: the mixer, the transfer section and the developer. The first chamber, the initial mixer, has a twin screw designed for 5 min of intense mixing of dry and wet ingredients. After this the dough is transported to the second zone where further ingredients such as yeast, salt, additional water, as well as small components such as raisins and nuts, are added. The specialty in the second chamber is the developer. The mixing and developing sections are separate units which offer more flexibility. The developer builds the final structure, especially the gluten structure. It works with a single screw for 3 min at a much higher speed to stretch and knead the dough properly. "For the continuous mixing of snacks, the developer wasn't needed, as there is enough energy itself to create a perfect dough structure. However, for buns, it is important, so we created it as an additive



++ figure 2
Complete RBS Continuous Mixing System

for our new mixing system”, said Jim Warren, Director Continuous Mixing at RBS. In this process, the dough temperature is held at a constant temperature by using a controlled temperature of 24–25 °C for the raw materials and by chilling the jacketed chambers with water or glycol to a temperature of 2 °C. Furthermore, it is possible to control the pressure in the chamber.

The cleaning in place (CIP) is done once a week with water under high temperatures and high velocity. If needed, approved cleaning agents can be used. Hygiene has become established as an important factor in the industry within the last few years, but according to Warren, the continuous mixers have the advantage that the dough is always moving. This means that dough does not remain lying inside the mixer. Similarly, less energy is needed compared to batch mixing, as with continuous mixing, there are no energy peaks, but a regular flow. “The motors are smaller with the continuous mixer, so approx. 20–30 % of energy can be saved. Studies, however are ongoing on this issue”, said Warren. Besides the option of energy saving compared to batch mixing, continuous mixing is also expected to deliver a consistent dough quality. The pilot project in Reading’s Science and Innovation Center started last year with a small version of the continuous bun mixing system, working with a dough production capacity of 1,000 lbs/h (approx. 460 kg/h). RBS and AMF carried out numerous unpublished tests to validate the technology. Later, they invited some customers to present their results. The first installation will be delivered to a customer in the USA in April 2013. It will start with an hourly capacity of 4,000 lbs



++ figure 3
Science & Innovation Center Mixing Area

dough (approx. 1,800 kg/h). There are further plans for lines in the international market for the end of the year with capacities of 8,000–12,000 lbs dough/h (3,600–5,400 kg/h). “Suppliers are increasingly searching for efficient lines, especially in the area of buns, which we can offer” said Bruce Campbell, VP Manufacturing at AMF. The new system will be sold under the AMF brand. Campbell explains that, “We with RBS have very concrete strengths. Reading is doing a great job in research and development; we are strong in the service, marketing and support through our large cross linking in the bread area worldwide. RBS will manufacture and commission; we will deal with all technical questions. It is the great concept of the group that we can offer not only mixing, but also proofing, forming, baking – all from one hand!” +++

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