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case study

John R Boone and GC Hahn
A great combination

John R Boone Ltd worked closely with GC Hahn UK, a major manufacturer of food ingredients and additives, to design and install a mixing system to meet exacting standards of hygiene and to handle very demanding formulations. The end result has been a great success, mixing Hahn's most difficult materials to high standards while immediately reducing mixing time by more than 25%.

GC Hahn is a family company with a history that stretches back more than 150 years, supplying the global food industry with products that help determine the taste, texture and stability of foodstuffs from yoghurt and mousse to scones and bread. With offices in 32 countries, they are at the forefront of ingredient and additive technology. In the UK, they are celebrating their tenth anniversary at purpose-built premises in Mold, North Wales. GC Hahn holds the highest Halal accreditation outside Malaysia, as well as the highest Kosher standards, requiring stringent DNA testing on batches produced. A wide range of raw materials, including liquid oils, waxes and difficult, pressure-sensitive powders need to be blended to create free-flowing powders or granules. The nature of the food industry also means that as requirements vary, GC Hahn often has to respond to urgent requirements from customers, changing production plans.

When GC Hahn looked to increase mixing capacity, they therefore had a very demanding set of criteria to satisfy. No cross contamination, excellent mixing performance to ensure a homogenous final product, rapid mixing with the flexibility to blend a variety of materials. ATEX hazardous area approval for Zone 22 powder hazard was another pre-requisite. The UK operation is also keen to maintain a reputation as the technical leaders even within their own company – they are trusted with the most difficult products that GC Hahn makes anywhere.

John R Boone supported GC Hahn throughout the project, from early evaluation of production materials, testing of mixer types and design of mixer blade configuration to supplying a test mixer for production trials and assisting with the design of the entire blending complex within the factory.

At the heart of the installation is a Boone 2000 model horizontal helical blade mixer, or HHBM, tailored to suit GC Hahn's exact requirements. Components of some blends are pressure sensitive and need to be mixed gently to make sure they don't agglomerate, other mixtures require a higher level of shear and with this in mind John R Boone designed the mixer with a replaceable mixer centre to enable either a Paddle Blade or Delta Blade type agitator to be fitted for complete flexibility. In Helical blade configuration, the product is lifted equally inwardly, outwardly and obliquely, with a very gentle action.

Overall, mixing time has been reduced by more than 25%, and tests are under way with the intention of reducing mixing time still further.

To meet ATEX criteria, the mixer is pressure rated to PED PD 5500. To meet the stringent hygiene standards, which mean that the mixer has to be cleaned regularly by hand rather than using a CIP system, large access doors are required. John R Boone developed a clever pivot system to make sure that the doors are both large enough for access and easy to open yet close with little effort and form a gas tight pressure rated seal.

John R Boone installed and commissioned the system, including all the support structure, feed system and a hopper to discharge to the packaging line.

A very good working relationship has been built up between GC Hahn and JR Boone. As Darrel Wynne, UK Plant Manager of GC Hahn UK put it, " Our business is a living thing, it's moving and we have to move with our customers. John R Boone have worked with us every step of the way, and they continue to help us refine and develop the process".

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