

Technologies

DAIRY MACHINES BY HOLSTEIN & KAPPERT

Milk saves the day

10/4/2018 , 5 min.

At the end of the 1920s Holstein & Kappert turned its attentions to the milk industry, marking the start of a success story which was to last almost two decades. The company focused its innovative strength on milk – never failing to also see the bigger picture.

RETURNABLE GLASS

RETURNABLE PET

PHOTOGRAPHY / ILLUSTRATION

Jessine Hein

COVER PHOTO

The combined Monoblock bottle filling and capping machine developed by Holstein & Kappert for the dairy industry in operation in 1957.

In the 1920s the advance of the bottle was unstoppable, with consumers wanting their products filled and packaged in place of bulk goods. This not only applied to coffee, butter, vinegar and oil but also increasingly to milk, more so in some countries than in others. In Great Britain, for example, the glass milk bottle standing outside the front door was a fixed feature of the early-morning street until well into the 1980s. In Italy the supply of milk was governed by law in 1929, which regulated not only the establishment of milk collection and distribution points at local and regional level but also the hygienic packaging of milk in glass bottles. Dairy centers were set up in Milan and Rome which were to set an example throughout Europe – and which operated machines made in Dortmund.

As far back as in 1928 Holstein & Kappert presented the first turnkey milk bottling system at an exhibition staged by the German Agricultural Society. The decision to supply equipment to the dairy sector was to prove successful for the company during the next almost twenty years. One important component in these systems were milk heaters made of solid bronze-galvanized plates which were initially procured from England. Base on an agreement with the Aluminium Plant and Vessel Company (APV) in London Holstein & Kappert was responsible for the licensed manufacture and sale of plate heat exchangers on the German market – a smart move for both sides resulting in the sale of around 4,000 such devices during the next few years.



↑
This old advertisement for the Phönix filler and capper system from the 1930s clearly illustrates the unstoppable advance of milk packaged in glass bottles.

Lean times

At the beginning of the 1930s, with the world economic crisis resulting in seven million unemployed and bringing about the end of the Weimar Republic in Germany, difficult times were also on the horizon for Holstein & Kappert. Its business in Germany with brewery machines, to date its economic mainstay, sank to just 5% of the total turnover and at the end of 1930 the company was in the red. It managed to keep its foundry above water with various third-party orders – mostly frames for tooling machines – and out of necessity its engineering works made paper bag gluing machines and ball bearing rings for vehicle trailers.

In view of the extremely taxing financial situation the high number of exports proved beneficial, this reaching a record level of two thirds in 1932. By 1934 this figure had been halved, however, dropping to a mere 10% at the outbreak of the Second World War. During this difficult period the supply of machinery to the dairy industry helped the company to overcome its low. In particular the Z-Platte or Z plate developed by Holstein & Kappert, a more cost-efficient heat exchanger plate made of stainless steel with vulcanized rubber strips, turned out to be a real bestseller, helping to protect the company from the direst consequences of the downswing.



↑
Thomas Redeker, sales director for
Dairy Europe at KHS

Three questions for... Thomas Redeker, sales director for Dairy Europe at KHS

How is KHS still profiting from Holstein & Kappert's past services to the dairy industry?

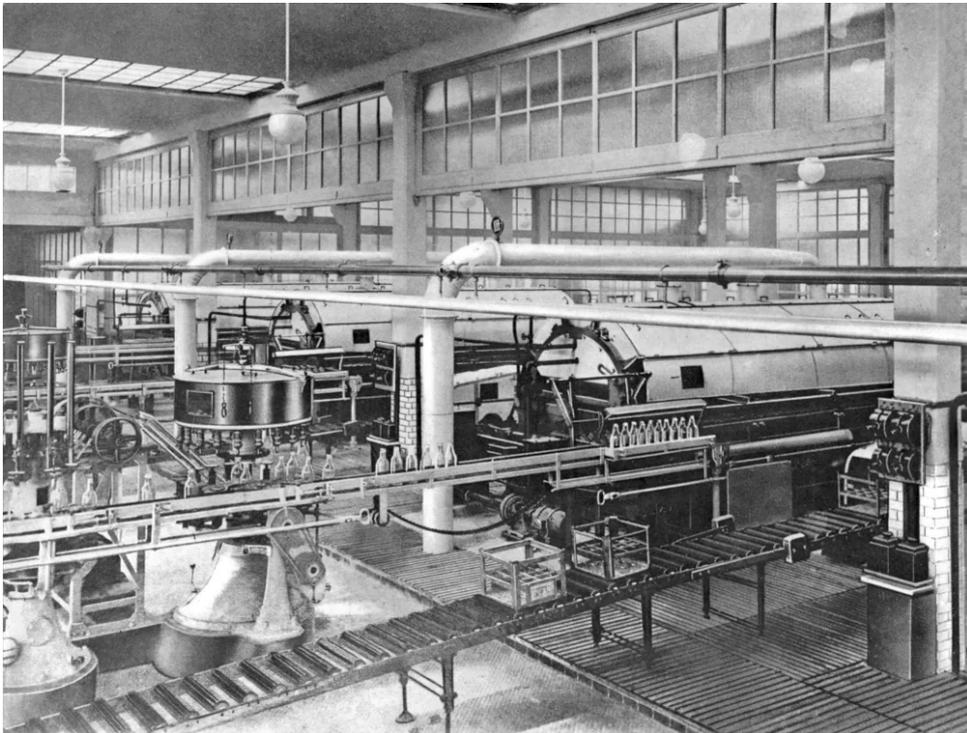
Thanks to our many years of experience with dairies we've had precise knowledge of the exact requirements of the dairy industry for many decades. This extensive expertise and many further engineering developments allow us to effectively help dairies with high levels of line efficiency and hygienic safety to produce and package top-quality products.

Which technological systems does KHS offer dairies today?

We now supply single machines, turnkey lines and block systems for all capacity ranges – from product processing and bottle manufacture through filling to packaging. With our new modular system we individually configure hygienically safe, cost-effective fillers to suit any dairy – for UCF, ESL and aseptic filling, on linear or rotary machines or with or without preform or bottle sterilization. And so that the milk makes a good appearance at the point of sale, we also provide a range of labeling technology and our Innopack packaging machines for all formats from single-serve to family size.

What's your vision for the milk packaging of the future?

PET will continue to grow. The dairy industry appreciates the simple processing and many options for design and exclusivity PET provides; consumers like the unbreakable material, pleasant handling and easy closures. In Germany bottles made of 100% recycled PET are no longer the future – they're already on the market. I'm certain that the milk bottle of the future will be a bio PET bottle made of renewable raw materials.



↑
View of one of the first milk bottling systems built in Dortmund (c. 1928).

Lucrative business

The sale of dairy machines had long proved to be a cash cow for Holstein & Kappert, giving the Dortmund company financial leeway for a number of further design developments. One of these was a milk can washing machine used for the washing and sterilizing of milk cans prescribed by the authorities; sometimes six of these a month were built. Other examples were automatic belt machines, which made aluminum caps and sealed milk bottles with them, as well as screw and centrifugal pumps.

In 1936 Holstein & Kappert made great headway in this field, sparking a veritable revolution in the way milk was heated in Germany: it designed a heat exchanger plate made of two preformed plates of stainless steel. These plates had to be joined as a unit without warping in a special welding process: a complex challenge which was only mastered – following many experiments – in cooperation with Krupp, the inventor of stainless steel. The result was well worth the effort: within a very short time indeed the Supra-Platte or supra plate replaced the

majority of stirrer heaters used in the dairy industry up until then and the Dortmund company had a new special product in the form of its plate heat exchanger.

Breweries also interested

Breweries now also began to show interest in the plate heat exchangers. Engineers had mastered the art of keeping the beer pressure above the CO₂ release curve during the entire filling process, meaning that the beer stayed stable and no hazing was formed. There was also some initial success in the hot filling of malt beer, albeit at first only in steel barrels.

At the end of the 1930s Holstein & Kappert was planning and erecting entire new dairy buildings. Its sales in the dairy sector were now just as high as those to the brewing industry. It helped that Holstein & Kappert's supra plates were considered to be so crucial to the people's nutrition by the authorities of the Third Reich that the production of these plates didn't have to be stopped during WWII. In the first post-war years the dairy industry was subsidized to help feed the starving population. Holstein & Kappert was kept busy producing machines for the country's vitally important dairies and thus put any further developments on hold.

In 1953 the supra plate became obsolete when APV launched a single-plate to the market which was superior in price and quality. The Dortmund company again signed an agency and licensing agreement with the British which turned out to be just as lucrative as the first.

Shortly before the end of the war the dairy machine plant was evacuated to East Germany. Operations first continued under the name of Holstein & Kappert but from 1962 could no longer be controlled by the headquarters in Dortmund owing to the division of Germany.