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Filling Focus: Food

INSIDE

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Tooling Developments
Shaping & Embossing



Getting into shape

Evert van de Weg speaks with Wallram Group on how the right tooling enables attractive shaping and embossing for cans

Shaping has always been important when attracting consumers. Giving nice shapes to cans strengthens the impact of the brands behind them and their contents considerably. That has been the opinion of producers of food and other stuff in cans almost from the beginning of the production of printed cans.

Printing tinplate for can making became possible by the end of the 19th century, and drawing presses to transform printed strips of tinplate into various shapes, had also become available around that time. Soon after, several food brands in Europe and in the USA grabbed the opportunity to use decoration, shape, often with embossing, to make a lasting impression of their brand in the minds of consumers. And, as a recent publication of the Metal Packaging Manufacturers Association (MPMA) showed, consumers kept these beautiful cans on average for more than seven years, using them to store various contents.

Can produced by Wed Bekkers for Driessen, embossed with a painting by Jan Steen



In the UK for instance, it became a Christmas tradition in the early 1900s amongst the major biscuit producers to market their products in finely decorated and beautifully shaped tins.

This kind of speciality tin became so widespread in the UK that more than half of the population had one. At the same time, some producers of cans in the Netherlands developed as their speciality the application of relief to sheet tin. In the first half of the 20th century, countless such tins were produced, usually silver in colour. In the 1960s there was even a know-how exchange between British and Dutch experts in can shaping and embossing.

Throughout the following decades, thousands of special and unique can shapes were developed and put on the market, in particular for fancy cans, often produced in China because of the low labour costs. New technologies to transform metal sheets into shaped cans were also developed, like for instance the 'blowforming' technology developed by Crown in the 1990s. An iconic example of the use of this technology was the introduction of the mini beer keg by Heineken in 1999. The technology was developed first by the French company Tecsor and further completed by can maker Impress from 2005 to 2006. A striking example of this is the Heinz brand Karvan Cevitam, packaged in such a can since 2007. And there are many more examples, based on different transforming technologies.

It starts with a special design and perfect tooling, says tool supplier Wallram

Wallram Group has made the production of precision tools, mainly for the metal packaging industry, as its core business. Jürgen Seel, vice president at the company, based in Herborn, Germany and Mike Simonson, vice president of Wallram LPT, based in Colorado Springs, USA, give us their insights.

Seel: “Wallram’s history can be traced back to 1912. It entered the can tooling market in 1973. The two-piece DWI process was invented in the US by the late 60s, came to the UK in 1970, and three years later the company started to supply tooling. Today, can tooling is not one of the many products but the focus of Wallram in tool manufacture. Only then can you offer customers the quality and expertise they need in this demanding market. This was realised by the owner of Wallram, Hans-Peter Kämpfer, investing in 2002 for the start-up Lieb Precision Tool in the USA which is today called Wallram LPT.”

Simonson: “At Wallram Group, we have focused on the manufacture of high tolerance parts made from hard materials which include various grades of tungsten carbide, ceramics and tool steels used in the can manufacturing business companies. The choices of these materials are specified by the customer, but often we will advise or recommend potentially different grades of materials, or even alternate materials for their specific applications. However, in saying this, we are cognizant and honour the many non-disclosure agreements which we have in place with the many companies which we provide service to and provide information based on these agreements when appropriate.”

Seel: “Also Kämpfer invested in the startup of our Polish company, Wallram CTE, in accordance with the Wallram strategy of always being able to offer customers local support. The original focus of Wallram CTE was to provide services of the can tool market for the regrinding of can tooling. This service of regrinds continues, but Wallram CTE also offers various other can tooling components for cupper, bodymaker and necker and continues to develop other offerings like shell press tooling.

In 2011, Wallram Group added Wallram Grindtec to the group, an Italian company which produces high-precision grinding machines under the brand Lizzini. They also developed special machines for toolmaking which enabled the Wallram Group to set up and ensure a production process for can tooling with the highest precision and quality. Today, Wallram Group is therefore a global provider of tooling, engineering and services to the metal packaging industry.”

Is the LPT focus different from the Wallram Germany focus in can making?

Simonson: “Today, Wallram Group are companies offering a wide range of tooling components together. The Wallram Group, Wallram, CTE and LPT, all have largely the same focus on the can tooling market. However, each of us has become specialists in certain tooling and service while trying also to break the ‘material type’ stereotypes that our market perceives.

At the time of the inception of Wallram LPT both the industry and our focus of our market supply was targeted on the specific YZ110HS ceramic, which was specifically used in the necking die component tool. The engineering benefit of this ceramic type was realised as a benefit to the industry’s application.

These improvements made a change in the market towards this material combination away from tungsten carbide/steel combinations.

Wallram LPT decided to also focus on bodymaker tooling – specifically the punch products. Investments were made for equipment specifically utilised for this processing and our product has been well received in the market.”

Seel: “Wallram set up early on as a full-service provider for the can industry providing the full range of bodymaker-, cupper- and necker-tooling. This now almost 50 years of experience in the field of metal packaging gives customers real added value. Wallram has detailed knowledge of the manufacturing process and the behavior of various materials from the past. Today, this allows the best possible material and the best possible raw material supplier to be selected for every application. This is the only way to always meet the high quality standards for the products.”

Are you involved in the ideas for special shapes and/or embossing, coming from brand owners in food/beverage cans and their can suppliers at an early stage?

Simonson: “Wallram has and continues to be part of the customer’s realisation of their concepts. We continue to have discussions regarding tooling design with focus on manufacturing, material choice and cost. We have a wealth of talent within our group for this level of cooperation.”

How do you look at the role of the material used for can making, tinplate or aluminium?

Simonson: “Aluminium recycling costs and conversion rates would seem to be an obvious choice for the foreseeable future for high-speed operations like beverage cans. This can also be seen in the numerous conversion projects from steel to aluminium. Tinplate has benefits for food or fancy cans because these need more stability. This also makes shaping and embossing easier. A kind of rediscovered option is tin-free material with a PET film.” ▷

*Shaped can by
Can Maker Impress*



Wallram measurement process



What is the importance of the material gauge of the metal for can making? Does that limit shaping and embossing applications?

Simonson: “These are specially developed materials and while gauge is an important factor, the chemistry and fabrication processing methods of these materials provide different performance factors and the can product applications will be different based on these conditions. We make tooling for shaping and embossing, however the design and material considerations are generated by the can designer to meet their customers can specification. The challenge is to turn designers’

ideas into action with the help of our tools. Some innovative solutions had to be found here!”

Shaping or embossing a pattern in ultra-thin beverage cans will have its limits. Is that the reason that the application remains rather rare?

Simonson: “Shaping of a can and/or embossing a can is a costly endeavor with the known technology. Price point to the consumer that is required for the product to be developed and manufactured is a mitigating factor to the evolving for the shaped and/or embossed can to the market.” ▷



Wallram grinding process



Wallram shape tooling



Wallram tool combination

What would you describe as the most important innovations in the last few years, or maybe in the near future, in shaping and embossing?

Simonson: “As a toolmaker, the processing machine equipment, software and abrasive technologies are being challenged to yield the products needed. We continue to develop and invest in equipment to meet these needs. Often it is not the eye-catching design that challenges, but rather small special effects that have to be produced in thin walls and at high speeds. Therefore, a small variation on an aluminium beverage can is more demanding than a special shape on a tube.”

In line with all the high expectations by market researchers and for instance the, very high expectations presented by the Crown board on their recent Investors Day, Wallram is quite optimistic about the development of the metal packaging market, in particular the market for beverage cans.”

Seel: “In particular, the emergence of the craft beer and also non-alcoholic drinks trend in smaller quantities led to a stronger focus on the individualisation of the product also in the beverage industry. Shaping and embossing is an interesting topic here, as a unique brand image is more important than the manufacturing price of the can.”

Wallram obviously has the strong belief to be able to maintain and extend their fair share in this booming market by its huge know-how and experience in can tooling. 

