

Behind the production line: The experts crafting the perfect flavour drum



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We eat six billion packets of crisp in the UK – each one seasoned to perfection. Crucial to that process is the flavour drum. This deceptively simply stainless steel drum is in fact a precision engineered hero in the snack production process – but what makes it so special? We ask Jon Higson, MD of Titan Manufacturing in Weymouth to take us through it.

The stainless steel flavour drum is a specialised piece of equipment designed to evenly coat food items with seasoning – from baked snacks, crisps, popcorn and coated nuts to dry pet food. This workhorse of the food production line is critical in producing high quality, consistently-flavoured snacks – it needs to be functional, durable, and hygienic. While the design may appear simple – a cylindrical shape lined with baffles or vanes to optimise the tumbling action – its manufacture requires huge skill and precision.

Material selection

The first step in manufacturing a steel drum for flavouring food items is selecting the appropriate material. Typically, 316 stainless steel due to its properties of resistance to corrosion and bacteria, and durability. It also boasts hygienic properties, being non-porous and easy to clean, in line with stringent food safety standards.

Design and engineering

Drums come in various sizes according to the capacity required on the production line. Titan makes about 20 drums per year on average – each one takes a fortnight to complete, and it is highly skilled work from start to finish.

Step one is cutting the parts which can take as little as 30 minutes, using a 4m x2m bed fibre laser for precision cutting, ensuring accuracy. Folding them into shape using Titan's 250 tonne press takes a two-man team half a day. Once rolled, the edges are welded together using techniques such as TIG (Tungsten Inert Gas) welding, which provides a strong, clean weld suitable for food-grade applications.

This welding process takes a highly experienced welder a full week for each drum, and must be done with utmost precision. The metal is thin and easy to burn, and even the slightest imperfection makes it unsuitable for the food industry as any pin hole flaws in the joins will provide a refuge where bacteria build up. It requires an extremely skilled welder to complete this process successfully.



Titan Manufacturing – a typical food flavouring drum in production

Then follows half a day's work 'wandering' the welds – this process involves using an electro wand weld cleaner to remove any weld discoloration from the stainless steel. Finally, the entire drum is finished using glass bead blasting to create the perfect smooth surface, crucial to the drum's ability to tumble effectively and ensure even seasoning distribution.

Quality control is critical throughout the manufacturing process. Inspections are conducted to ensure that the drum meets the required specifications, including dimensions, weld integrity, and surface finish. Non-destructive testing methods, such as dye penetrant testing, may be used to detect any weld defects. Even packaging has to be done carefully and securely as any warping or dents would render the drum unusable.

Assembly and integration

Once the steel drum is manufactured, it must be integrated into the production line. This involves fitting the drum onto its support frame, attaching drive mechanisms, and ensuring that it operates smoothly. The drum is connected to the seasoning application system, which typically includes nozzles or sprayers that deliver the seasoning in a controlled manner. Compatibility and quality are key, so often clients opt to come to Titan for the stainless trays and base weights which go underneath these trays – crucial parts of the conveyor system that delivers the crisps or snacks to the flavour drum.

Before the drum is put into full operation, final testing is conducted. This involves running the drum under actual production conditions to verify that it performs as expected, testing for even seasoning

distribution, drum rotation speed, and noise levels.

A well-designed well-made drum should not only perform well, but thanks to the quality of the construction and welds it should also be easy to maintain, extending its lifespan.

A hero component

The manufacturing of a steel flavouring drum is a process that demands precision, expertise, and attention to detail. From material selection to final testing, each step plays a critical role in ensuring that the drum meets the high standards required in food production. A well-designed and manufactured steel drum not only contributes to the efficiency of the production line but also to the consistent quality of the final product, ensuring that each batch of food is perfectly seasoned.

If the flavour drum is the hero of the snack food production line – the experienced manufacturers who craft these vital components are the unsung heroes behind it.



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