THE Canner & Filler





February 1999





IMAGES FOR INDUSTRY

The drying game

The installation of an air knife drying system has solved labelling problems at Cantrell & Cochrane, which holds the Pepsi franchise in Ireland. Zeba Clarke reports.

Above: Sonic's stainless steel XE air knives in action. Centre: Cantrell & Cochrane's range of carbonated soft drinks.

Wraparound paper labels offer considerable benefits for fillers of carbonated soft drinks, chiefly because of the possibilities which they provide for all-round decoration compared to the patch-style bottle labels.

But smooth label application calls for a balance between a range of factors, the most important being surface dryness, choice of adhesive and the type of labelling machine. To overcome label adhesion problems caused by condensation forming on glass bottles, Irish soft drink filler Cantrell & Cochrane recently installed an air knife system for precise drying of the labelling area.

Cantrell & Cochrane had encountered label adhesion problems after installing three Krones Canmatic hot-melt labellers for applying the wraparound labels to bottles filled at its Cork facility. The plant has two filling lines, one for returnable glass bottles, and one for PET bottles and a smaller proportion of 250ml non-returnable glass bottles. Previously, the PET bottles had reel-fed plastics film labels and the glass bottles had paper patch labels.

Although the changeover to hot-melt-applied labels went smoothly with the PET bottles, the labels did not adhere so well with the glass bottles. Like the PET containers, these are filled at temperatures of around 4 deg C using SEN filling machines. The thicker-walled glass bottles hold their temperature longer and this, coupled with the wet filling room environment, created difficulties with adhesion of the wraparound paper labels.

As Francis Maher, manufacturing engineering manager for Cantrell & Cochrane says: "It is feasible to label this type of product if it is cold or if it is wet, but not when both conditions exist at once." Cantrell & Cochrane tried a range of different solutions to the problem, but line efficiencies went down to below 40 percent.

Initially, five main options were considered. The first was to increase product temperature. This was dismissed because to do so would affect the quality of product, causing a reduction in carbonation level.

Another possibility was to revert to the paper patch label, which seemed a retrograde step since the new style was a considerable improvement with both cost and promotional advantages.

Cantrell & Cochrane then considered exchanging the Krones

Factfile:

Cantrell & Cochrane has the franchise in Ireland for the complete range of Pepsi products, various flavours from the Schweppes range of soft drinks, numerous Irish branded soft drinks and dilutables packed in PET, glass bottles and cans, in sizes ranging from 250ml to 2.5 litres. The company also manufactures Club soft drinks, the leading brand in Ireland.

It has two plants in the Republic of Ireland, one in Dublin, the other at Little Island in Cork. ◆

This article was reprinted from the Canner & Filler magazine February 1999 issue which is published by Sayers Publishing Group, Durand House, Manor Royal, Crawley, West Sussex, RH10 2PY. UK. Tel: 44 1293 435100. Fax: 44 1293 619988.



IMAGES FOR INDUSTRY



IMAGES FOR INDUSTRY

Contacts

Beardow & Adams, 32 Blundells Road, Bradville, Buckinghamshire MK13 7HF, UK. Tel: 44 1908 315474. Fax: 44 1908 223337.

Sonic Air Systems (Europe), 22 Pinewood, Hebburn, Tyne & Wear NE31 1YP, UK. Tel: 44 191 428 4681. Fax: 44 191 428 4055.

Sonic Air Systems, 4111 North Palm Street, Fullerton, California 92835,USA. Tel: 1 714 870 2700. Fax: 1 714 446 7784.

Above: Tony Cashman plant manager (left) at C&C and labelling machine operator Tom Hosford. Below: The Krones Canmatic hot-melt labeller, which was recently installed at C&C in Ireland.

Canmatic for a Krones Combi machine, which includes both hot melt and Casein glue stations. Casein is a water-based adhesive, which would absorb any condensation better than a hot-melt-applied label.

Hot-melt adhesives are 100 percent thermoplastic solids, with no solvent or water content, so they absorb no moisture. While this may be a disadvantage, hot-melt adhesives have the benefit of not wetting the label, thereby reducing label damage.

According to Cantrell & Cochrane, they are also more efficient in terms of the amount of glue they hold, as well as being cleaner-running on label application machinery.

Cantrell & Cochrane also looked at installing a bottle warmer, but the economics of installation were too costly to allow this option. Finally, the company decided to install an air knife, which dries the bottles only where the glue is applied for label pick-up. The system, a Sonic 100 blower linked to two XE air knives, was installed by US-based Sonic Air System's European operation.

Although the air knife option was the choice favoured by Cantell & Cochrane, when they approached several industry suppliers, none were confident that enough surface water could be dried off for long enough to allow the glue to adhere. After contacting Sonic Air Systems, a demonstration using a small air knife established that a correctly sized system would solve the problem.

"Once we had taken into account the parameters of speed, size, product shape and temperature, it was relatively straightforward to work out what Cantrell & Cochrane needed", says Paul Riley, international regional manager for Sonic Air Systems (Europe).

In this particular case, Sonic used two air knives and a nozzle at points where the glue is applied. The company also worked closely with Cantrell & Cochrane's glue supplier, Beardow & Adams, to resolve the glue adhesion problem and other label application issues.

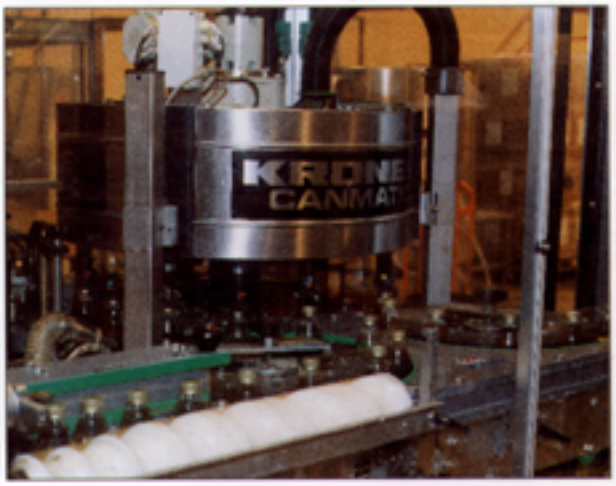
Sonic supplies air knives from 25mm up to 3.65m in length. Their particular advantage is that whereas many drying systems are based on standard fans, the Sonic system is powered by a high-speed centrifugal blower specifically for drying. Because of its technical specifications, the air knife's function is said to be flexible and quiet.

The Sonic 100 blower is fitted with an automatic belt tensioner, eliminating the need for periodic adjustment of the drive belt inside the blower. The blower is lightweight, with a footprint of no more than 1.27 sq m and has 18 different mounting positions.

In the case of Cantrell & Cochrane, the blower powered a pair of hard anodised aluminium XE air knives and raised line efficiency to over 75 percent.

According to Sonic, as many as six air knives can be configured with one blower. Mr Maher says: "The Sonic Air knife has transformed our production capability. Labelling problems are now almost insignificant and we are achieving line efficiencies above 75 percent".

Cantrell & Cochrane is now investigating installing another Sonic air knife for can drying at its Dublin facility. ◆



IMAGES FOR INDUSTRY