

# PEPSICO WALKERS/ LAYS



# PEPSICO



## BACKGROUND

Walkers Crisps (known as Lays internationally) are the UK's largest manufacturer of crisps ("potato chips"). They hold almost 50% of the UK market, with the site in Leicester using 800 tons of potatoes and producing 11 million bags of crisps annually. Walkers are a part of PepsiCo.



Figure 1: The Leicester factory is the largest crisp factory in the UK

Walkers have previously had success using Hydropath products to protect steam boilers in their Leicester factory and also to prevent scaling of a dosing pump in the Lincoln site.

## SCALING OF SPRAY NOZZLES

One of the production lines contains sets of spray nozzles spraying cold water onto the product. The outlet holes of these nozzles are small (200 microns in diameter) and hence highly prone to scaling. As the water passes out of the nozzles, it experiences a pressure drop and hence becomes super-saturated, leading to scaling.

These nozzles would block on a weekly basis. Every week production was halted while the nozzles were removed from the line for cleaning. The nozzles required cleaning in an acid bath for 3 hours. This equated to a significant cost in terms of downtime and labor, as well as chemical costs.



Figure 2: The spray bars on the production line (left) and the bars being removed for weekly cleaning

## TREATMENT

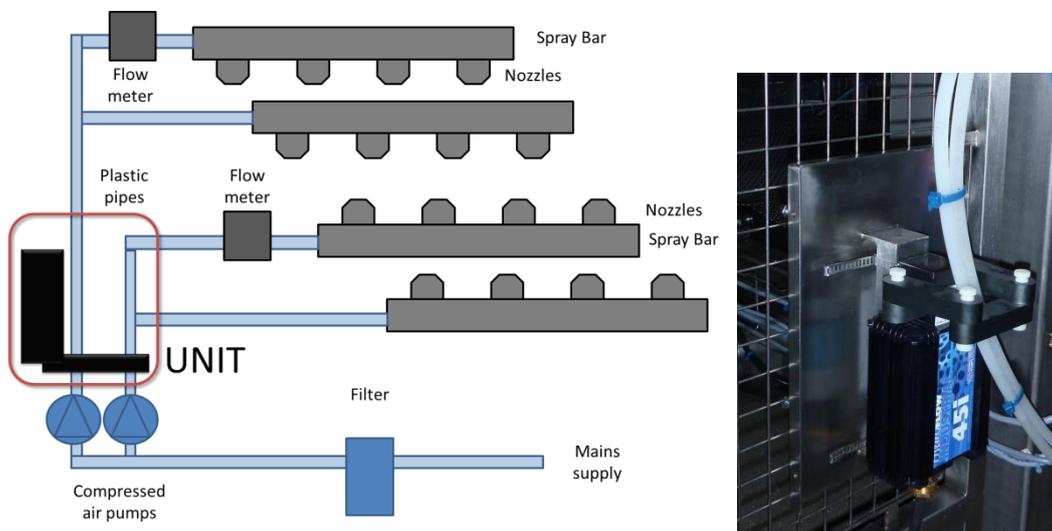


Figure 3: Diagram showing spray bars and nozzles (Left) and the unit installed on the line (Right)

The spray bars are fed by mains water that is filtered and pumped through plastic pipes. The number of spray bars used is increased as they nozzles become blocked.

The unit needed to be installed after the pumps. Looking at the diagram alone, it would appear that two units are required. However, the pipes are made of flexible thin plastic, so both pipes from the pumps could be passed through the ferrite ring.

The production line is constructed entirely from stainless steel, so normally loops would be a major concern. However, the pipes involved are plastic so this not an issue. Another potential concern would be the dislodging of old scale, as the nozzles are very narrow and so would be highly vulnerable to clogging from scale flakes. However, the system appeared very clean with no evidence of old scaling.

A single Hydroflow i45 unit was fitted to protect all of the nozzles on the line. As the production line is regularly pressure-washed, the unit was installed with a protective stainless steel cover. Weekly cleanings of the nozzles were discontinued.

## RESULTS

The unit was installed on 19 March 2013.

As of September 2013, the nozzles have remained clear for **24 weeks**, whereas the nozzles previously were cleaned **every week**.

Over a year, this corresponds to a saving in the cleaning costs of **95%**, including **49 x 3hrs = 147** hours of lost production time and labour costs, and a saving of approximately **49 x 4 litres = 196 litres** of acid solution per year.