

CASE STUDY:

Improving Production of Foaming Products

When filling a 55 gallon drum with a foaming liquid, it is accepted practice to allow two and a half minutes to fill 450 lbs. at 75 gallons per minute input. Most companies accept this drum filling problem as a normal part of business. So, when they need to increase production, they simply purchase another drum filling machine, or start a second shift.

The Customer

A worldwide maker of cleaning chemicals has plants in five countries all with foaming liquid problems. Most of their operations use second and third shift labor just to keep up with the production demands.

The Challenge

Create a drum and tote filling system that reduces foam during the filling cycle, which would increase production without having to purchase additional filling machinery. In addition, the filling machine will provide a rapid and justifiable payback.

The Solution

We developed a method of reducing foam by making a tear-drop valve at the end of a drum filling lance. Then, through extensive research and development, we found a special pump that limited air into the infeed line. After adding the pump to our filling machinery we created a recirculation loop and had a one-of-a-kind solution...a "No-Foam" package that can be added to any of our standard filling machines.



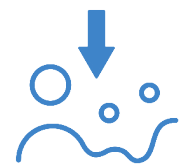
\$140,000 Savings in less than 60 days



Decreasing average cycle time per drum by 57%



Doubling liquid filling output in less time



Producing 87% less foam per cycle

The Payback

When the customer brought their problem to us, filling a 55 gallon drum took 2 minutes and 12 seconds and had 4" of foam at the top of the drum. The new filling machine, with the No-Foam package, filled a 55 gallon drum in just 56 seconds with only 1/2" of foam at the top.

That meant that the new filling machine more than doubled the customer's liquid filling output and gave them a payback on a \$140,000 drum filling system in less than 60 days.



Drum Filling Study

Filling 44 Gallon Drums	Before No-Foam Package	After No-Foam Package
Number of drums studied	170	170
Medium foam - average cycle time per drum	132 seconds	56 seconds
High foam - average cycle time per drum	180 seconds	77 seconds
Percent of increased production	136%	137%
Number of drums filled per 8 hour shift	218	514