



APPLICATION GOAL: A frozen chicken wing manufacture was having issues with a drilled and slotted tube blow off not evenly removing excess sauce from the wings and belt prior to it going into a spiral freezer. They also had concerns on the volume of air the pipe was consuming and how loud it was, so wanted to lower both of those.



BEFORE EXAIR: A new sauce applicator had been installed at this customer's plant. A drilled and slotted tube was provided with the equipment. This tube ran approximately 14 hours per day at a pressure of 16 PSIG to remove excess sauce on the chicken wings and belt. Due to the poor performance of the tube, they temporarily installed another drilled and slotted tube to help remove excess sauce. The header pressure to these knives was 60 PSIG but due to the large volume of air they were consuming they were only able to run them at 16 PSIG. These tubes consumed 484.2 SCFM each at the 16 PSIG - for a total consumption of 968.4 SCFM with both tubes. And at 16 PSIG they produced a sound level well over 90 dB.

AFTER EXAIR: The customer installed a [110030SS-316PKI 30" 316 Stainless Steel Super Air Knife](#) on the sauce applicator and a [110024SS-316PKI 24" 316 Stainless Steel Super Air Knife](#) on the Spiral Freezer. They reduced the noise to 65 dBA. The Super Air Knives combined consume 124.2 SCFM at 60 PSIG. And the Super Air Knives' force and laminar flow provided better sauce removal, over the turbulent nature of the drilled and slotted tube.



SUMMARY: The force and laminar flow of the Super Air Knives increased the performance by evenly thinning the sauce off the wings and preventing build up on the belt, and significantly **reduced rejected product by 85%**. Sound levels dropped from well over 90 dB to 65 dB, a **reduction of 25 dB**. Air consumption went from 968.4 SCFM to 124.2 SCFM. At 14 hrs/day the Super Air Knives saved them **709,128 SCF of compressed air**. That's over **\$177.28 saved every day**. (\$0.25 per 1000 Cu.Ft) **(\$46,092.80 saved per year, 260 working days)** The ROI on these two knives is just under 30 days.