



**APPLICATION GOAL:** Decrease compressed air consumption, lower sound level, and improve consistency of transitioning freshly baked tortillas between sections of a conveyor.

**BEFORE EXAIR:** A commercial bakery has been making tortilla shells from an ancient family recipe for decades. As their production grew, they incorporated conveyor-type ovens (like those commonly found in pizzerias) to bake the shells. The shells moved from the oven to the packaging station, and along the way, they transitioned to a lower chain belt. A 48" long drilled copper pipe, installed under this transition point and supplied with compressed air at 95 PSIG, was used to "float" the tortilla shells across the gap, but it was very loud and used a lot of air. It also resulted in inconsistent flow across the 48" length which was too weak to properly "float" the shells at some points, and strong enough to flip or fold them at others. This was happening at a rate of about 11 flips/folds per hour.



48" long copper pipe was tested in EXAIR's Efficiency Lab for performance. (23) 0.090" holes drilled along length.

**AFTER EXAIR:** A [Model 110248 48" Aluminum Super Air Knife Kit](#) was installed, using two [Model 9060 Universal Air Knife Mounting Systems](#). With supply pressure regulated to only 38 PSIG, they achieved consistent flow across the entire length. Flipped and folded shells have been completely eliminated.



48" Aluminum Super Air Knife with 9060 Mounting System (above) keeps tortillas from flipping on the conveyor (right).

**COST REDUCTION:** In addition to solving the quality problem with the flipped and folded shells, there was also a considerable reduction in sound level and compressed air consumption, resulting in a substantial operating cost savings:

	Supply Pressure	Sound level	Compressed air consumption	Consumption savings, annual	Cost savings, annual
Drilled Pipe	95 PSIG	101 dBA	259.8 SCFM	21,744,000 SCF	\$5,436.00
Super Air Knife	38 PSIG	61 dBA	78.6 SCFM		

\*Cost of compressed air usage is based on electric utility cost of \$0.08/kWh and calculated for operation 8 hours/day, 5 days/week, 50 weeks/year.