EXAIR® Case Study

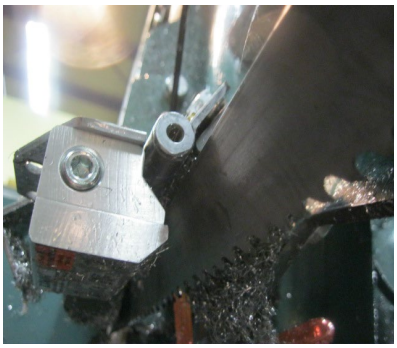
1568

APPLICATION GOAL: To effectively remove the large volume of chips generated during operation of a new high speed band saw.

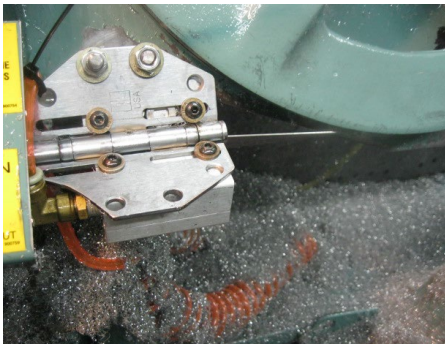
BEFORE EXAIR: A large metal manufacturing company purchased an industrial band saw for high volume aluminum cutting. While the saw itself, and the carbide-tipped blade, were capable of operation at the manufacturer's rated speed of 1,250 feet per minute, the saw's rotating chip brush could not keep up with the large amount of coolant-soaked chips that were generated. This presented several problems:

*Clogging of saw blade teeth, which caused overheating & rapid material degradation (dulling) of the blade.
(4) blades were replaced during the first week, at a cost of $270.00 per blade ($1,080.00 total.)
*Ingress & contamination of the pulley bearings, leading to early failure.
The bearing replacement, also during the first week, cost $100.00 in parts, and the saw was out of operation for (3) days waiting on parts and complete disassembly/reassembly of the drive.
*Accumulation of chips in the saw's pulley chambers, necessitating frequent work stoppage to clean out.
Operators were spending two hours per day in cleaning time.

Continued operation under these conditions was not sustainable and use of the new saw could not continue unless a way to successfully clean the high speed blade was found.



EXAIR Super Air Knives keep the chips away from the saw blade…



…as well as the drive pulleys and bearings.

AFTER EXAIR: Two Model 110003 3" Aluminum Super Air Knives were installed; one on each side of the blade to allow for easy installation & precise positioning in the limited space available. The high velocity laminar airflow completely strips all coolant and chips from the blade and into the saw's catch pan, thus maintaining a clean blade, pulleys and bearings.

SUMMARY: During the first week of operation, the material & labor costs described above quickly proved to be prohibitive for continued operation:

Saw blades: $270.00 each X 4 = $1,080.00 + Bearings: $100.00 = **Material total: $1,180.00**
Labor: (10) hours cleaning (2 hrs/day x 5 days) + (8) hours bearing replacement + (4) hours blade replacement (1 hour per replacement x 4 blades) = **22 hours total labor**

Because of the performance of the EXAIR Super Air Knives, continued use of the new saw is now not only possible, but efficient and productive. The operating cost of the Super Air Knives is extremely low:

8.7 SCFM/unit* X 2 units X 60 min/hr X 8 hr/day X $0.25/1,000 SCF** = **$2.09 per day**

**Compressed air supply pressure of 80 PSIG* ***Electric power cost of $0.08 per kWh*

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