CASE STUDY

1557

APPLICATION GOAL

A large manufacturing facility aimed to reduce personnel's occupational noise exposure by minimizing the noise produced by their generic compressed air guns and nozzles.

BEFORE EXAIR

A machining company was using a variety of air nozzles to blow off coolant and chips from their parts. The parts were for the aeronautical industry, which meant that the parts needed to be free of all chips and a majority of the coolant for the CMM or auto-gauging quality check procedure to be accurate. A thorough blow off process is critical for accuracy. Unfortunately, operators did not reliably wear hearing protection and they limited their blow off time and care because the excessive noise from the generic air guns was uncomfortable and hurt their ears. This lack of care resulted in an increase of failed parts due to residual coolant which was not blown off. In the photo above, you can see a majority of the 25 nozzles removed from service by the company. The noise levels of those nozzles ranged from 88-100 dBA at 80 PSIG of inlet pressure. 90 dBA is OSHA's maximum allowable sound level exposure for an 8 hour day [OSHA Standard 29 CFR – 1910.95(a)].

AFTER EXAIR

The machining company easily retrofitted 25 compressed air guns with EXAIR's **Model 1103 Mini Super Air Nozzles** throughout their facility because the thread on the nozzle matched the air gun thread. The new nozzle installation produced a 15 dBA drop in noise level. The **Model 1103 Super Air Nozzle** will maintain a very quiet decibel level of a 71 dBA at 80 PSIG inlet pressure. It produces more than enough force to eliminate the liquid coolant by generating 9 ounces of force 12 inches away from the nozzle. After realizing this reduction in noise level, management was able to encourage the operators to be more thorough when blowing off each part which has decreased part rejections. The retrofit brought the ambient noise level below the OSHA standard, 29 CFR-1910.95(a), which minimizes their risk of exposing personnel to harmful noise if they fail to wear hearing protection.

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