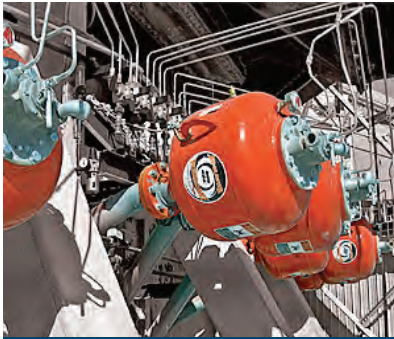


CASE HISTORY



 **PULP & PAPER:**
AIR CANNON SYSTEM INSTALLATION
Mounting Location and Valve Orientation Critical



Typical Air Cannon Installation

INTRODUCTION

This job story addresses the importance of installing an Air Cannon correctly and in the right location by looking at a real-life occurrence, noting adjustments and repairs that can be made to remedy situations in which this was not done. This report studies a paper mill in New England. The Air Cannons were used to prompt flow of woodchips into the papermaking process, especially during the winter when the moisture-laden woodchips would freeze. Air Cannons, or air blasters, are bulk solids flow-aid devices which utilize a pressure-rated reservoir of stored compressed air or nitrogen at 10 to 125 PSI, equipped with a fast-acting, high flow discharge valve which quietly supplies an instantaneous blast of air into storage or process vessels, chutes, or ducts. When strategically located, and properly oriented and controlled (automatically or manually), the eruptive force of the blaster de-clogs, dislodges, and prevents the material build-up that chokes plant productivity and efficiency.

PROBLEM IN MORE DETAIL

The Air Cannons in question were purchased and installed by mill personnel in 2007 as replacement Air Cannons that had been in use for over 30-years, and were cost-justified based solely on energy savings. Replacing them with new technology Cannon Valves promised a 50% reduction in air consumption. An additional justification for installing the newer, more efficiently designed MARTIN® HURRICANE® Valve BIG BLASTER® Air Cannons was to reduce the higher repair-incidence of the 30-year old air blaster system.

The upgrade did save money and worked well for a few years, until the newer Air Cannons were found to be leaking compressed air. An inspection by an AIRMATIC Application Specialist revealed that the Cannons had been incorrectly mounted so that they shot at an upward angle into the bins. This incorrect positioning permitted wood chips, dust, and water to gradually (during periods of inactivity) infiltrate the Air Cannon Valves, causing mechanical damage. Had the Cannons been installed correctly, the foreign substances would have been kept out and the leakage would not have occurred.

SOLUTION

To remedy this problem, AIRMATIC Application Specialists recommended that the all Air Cannons be removed from the vessel and disassembled, and all wood chips and other contaminants removed from the blasters' air reservoirs and exhaust valves. The Air Cannons were then inspected for damage, particularly in the piston assembly, and all damaged parts were repaired or replaced. The Air Cannons were then remounted to fire in downward discharge positions to prevent the contaminants from relogging the valves. The System was put back online and monitored over the following month. The results showed that everyday efficiency was increased significantly and plant personnel were confident that the problems of winter would be less burdensome.

CONCLUSION

As this case study shows, the problem of the clogged Air Cannons was remedied by cleaning the Air Cannons (fixing the immediate problem) and then remounting them in a way that would prevent the same problem from occurring in the future (preventing future problems). This two-fold approach made the paper mill management feel comfortable that these adjustments would enable them to maintain lower operating and maintenance costs in the coming years, making the system even more productive and efficient.

For more information on Air Cannon Systems and other products and services provided by AIRMATIC INC, [click here](#).

AIRMATIC[®]
INC
...HELPING PRODUCERS EXCEL![®]

