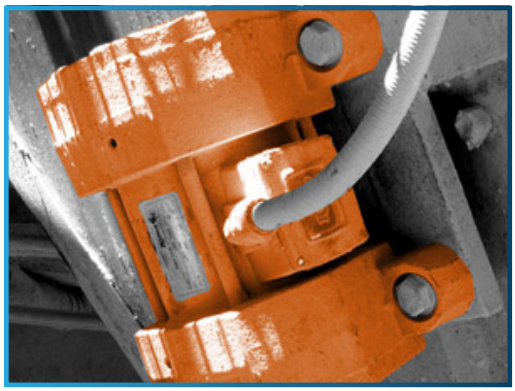
CASE STUDIES

Power Generation: Electric Vibrator Installation

Correct Vibrator Makes Woodchips Flow Like Water

Introduction

This job story details the benefits of selecting the correct rotary electric vibrator to prompt and maintain the flow of stubborn bulk materials. Workers at a power generating station relied on gravity and manual poking to unload woodchips from a railcar. This was a slow and expensive process because the woodchips would bridge and rat-hole above the railcar's gates. When train delays occurred, the lack of woodchip fuel reduced production of electricity at this facility.



Problem in more detail

Five days a week, a 21-car train delivers more than three million pounds of woodchips for use as fuel at a power generating station in New England. The unloading process used manual tools and created concerns for personnel safety and wasted labor costs. It was also consistently behind schedule. The goal was to unload the railcars in two hours, but it was taking seven hours. The generating station tried using a variety of portable pneumatic and hydraulic vibrators, but these had unacceptable drawbacks. The excessive noise disturbed neighbors and the vibrators caused railcar damage due to poor vibrator mount accessibility. There were also concerns for the safety of personnel handling portable vibrators in sub-zero weather.

Solution

AIRMATIC Application Specialists recommended MARTIN® Rotary Electric Vibrators to promote the flow of the woodchips. These vibrators are usually applied to bins, hoppers, and silos, among other places. When clinging, bridging, or rat-holing of material occurs, a correctly-sized and securely-mounted rotary electric vibrator will help recover lost material, accelerate material flow, increase efficiency, and improve safety. AIRMATIC Application Specialists suggested permanently mounting a MARTIN® 1800 RPM, 10,000 Force-Pound Vibrator beneath each railcar. The vibrator would then act as a woodchip "pump" and create continuous product flow.

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To confirm effectiveness, the vibrators were periodically stopped. At those times, the flow of woodchips stopped. With the vibrators on the railcars, workers were able to unload the entire train in less than two hours. Now production of electricity could continue without interruption and community relations improved as both vibrator noise and length of noise exposure diminished.

Conclusion

As this case study shows, installing and properly mounting a rotary electric vibrator with the correct force and frequency solves many problems. First, plugged railcars that caused unloading delays became a thing of the past. Second, by maximizing unloading efficiency, maintenance and labor costs went down while productivity went up. Finally, permanently mounting the vibrators in place reduced the risk of injury.

If you have trouble with the flow of bulk materials, call us at AIRMATIC. We'll Handle It.

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