

VIBRA SCREW

CASE HISTORY



CH-262 Silica Dust Under Control by Bulk Bag Unloader

Customer

Random & Randolph is a division of Dentsply Corporation. It's Maumee, Ohio plant produces silica-based compounds for investment castings.



Random & Randolph solved its silica dust problem on a new mixing system with one Vibra Screw Bulk Bag Unloader.

Problem

Silica is at the heart of many of the investment casting compounds formulated by R&R. These, when liquid binders are added, form the essential molds in dentistry, jewelry, industrial components and recreational products.

Yet silica offers handling problems. In damp conditions it tends to cake, making discharge from one and two thousand pound bulk bags difficult. Its dust is best avoided, and silica dust is a fact of handling in virtually any condition.

When R&R management decided to increase productivity of its jewelry powder product with a new mixing system, they knew they'd need to increase delivery capability if the system was to operate at its intended effectiveness. Continued hand unloading of fifty pound sacks of silica at the rate of over 6000 pounds per day would be both manpower and dust nightmares. Additional additives to the compound would have to be added manually, but their smaller proportions would not increase the airborne dust from which management hoped to protect its workers.

Solution

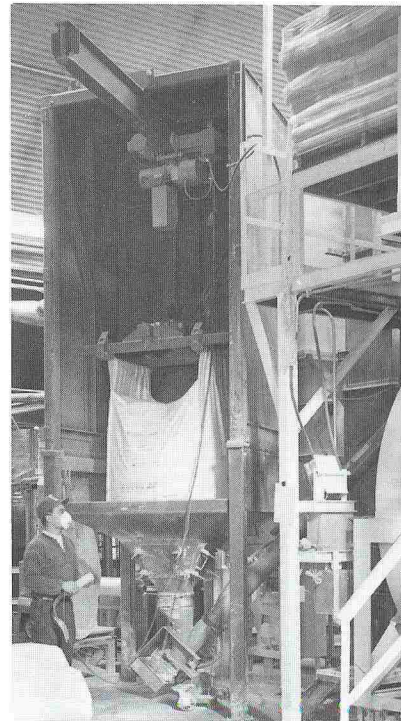
The answer lay in a Vibra Screw Bulk Bag Unloader. R&R engineers had seen a similar system in operation at a GE plant. They requested tests at the Vibra Screw test labs in New Jersey, and the results pointed to the solution for both their manpower and dust problems. The Bulk Bag Unloader incorporates controlled vibration assist

from a unique oil-lubricated gyrator. It assures complete discharge of any material with operation and supervision by only one person. The unit includes an on-board dust collection system with pickups at the discharge cone so this silica discharge station would not add to the facility's environmental dust

Results:

Random & Randolph discovered the Vibra Screw Bulk Bag Unloader effectively controlled the silica dust without need for auxiliary dust collection devices. Their two to three batch daily production schedule is now handled with only one man -- a definite reduction in manpower over previous methods. The Bulk Bag Unloader's on-board hoist raises bulk bags, regardless of capacity, into position on the system's discharge platform. The unloader's unique two-slope design safely supports and seals the bags to the discharge platform to avoid spillage or dusting.

An access door below the discharge platform permits the operator to open the bag with no additional dust release. With 2000 lb bags safely seated on the discharge platform, there is no threat to operator safety during bag opening.



Small batch compounding continues by hand in other parts of the R&R plant for other formulations, but the new jewelry powder mixing system operates at planned rates with help from the Vibra Screw Bulk Bag Unloader.

The Vibra Screw Bulk Bag Unloader fully discharges 2000 lb bags of silica powder with a unique oil-lubricated gyrator assist, guaranteed for 20,000 hours of continuous use.