



## Automated Weighing System for $TiO_2$ at Corning

### Customer

Corning Glass Works, Corning, New York. Leading manufacturer of specialty glass.

### Problem

In the production of a range of specialty glass, Corning uses  $TiO_2$  (titanium dioxide) which has a bulk density of 85 lbs. per cu. ft., and a particle size of +325 mesh. The material is brought in bags to a mechanical handling system, then it goes to a 3 ft. diameter storage bin which holds a minimum of one day's supply. In order to feed titanium dioxide from storage into an automated weighing system, it is essential to have uniform, uninterrupted flow. Titanium dioxide is notably difficult to handle; it tends to agglomerate and pack in storage, especially after 24 hours, with resultant variable feed rates. It cannot be fed by gravity.

### Solution

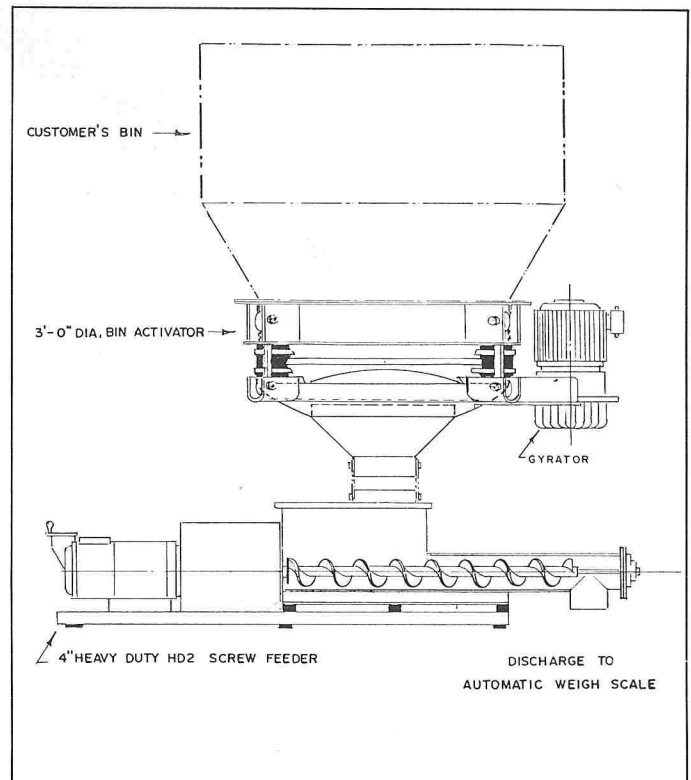
Vibra Screw Bin Activator, 3 ft. diameter, carbon steel construction, preassembled mounting ring. Vibra Screw Heavy Duty Feeder, HD-2, 4 in. diam. flight screw.

On the basis of past experience with Vibra Screw equipment, followed by tests in the Vibra Screw laboratory, Corning decided to install a Bin Activator on their storage silo, operating with a Heavy Duty Feeder to move the  $TiO_2$  into a gravimetric scale from a bulk to a dribble rate, and then to final cutoff. For ease of installation, the Bin Activator was flexibly mounted to the bottom of the silo by means of a preassembled mounting ring. A powerful gyrator on the Bin Activator provides controlled vibration of the Activator and an integral baffle, conditioning the material in the bin for movement out of storage. The Activator's baffle, located just above the discharge outlet, relieves headload and also promotes flow of material from the upper part of the storage bin. Material flows

directly into the Heavy Duty Feeder, which conditions the material to a constant density by vibration of the entire trough, screw and tube.

### Results

Corning's new system has overcome the tendency of titanium dioxide to pack and to agglomerate into balls. The completely automated weighing system depends for its success on steady, bulk flow of  $TiO_2$ , and that flow is assured by the use of the Vibra Screw Bin Activator operating in conjunction with a Heavy Duty Feeder.



The completely automated weighing system at Corning Glass Works depends for its success on steady, bulk flow of  $TiO_2$ , and that flow is assured by the use of the Vibra Screw Bin Activator operating in conjunction with a Heavy Duty Feeder.