

Applications of Fox Venturi Eductors

Case Study No. 18

Material: Titanium Dioxide
Particle size: 2-6 micron, very fine Bulk
Density: 15 - 35# / ft³.

Problem: Rotary Valve Venting
In a large Southern chemical plant, two 16" rotary valves were put in series beneath a large cyclone separator to contain fines blowback. The space between the rotary valves was being vented by a simple vacuum system that handled about 50 pounds per hour of TiO₂ along with about 40 SCFM. This secondary system began to handle large amounts of product, much of which was lost or wasted.

Solution: The plant management was already familiar with *Fox Venturi Eductors*, which were in use elsewhere in the plant. *Fox* suggested use of a small 1-1/2" venturi ejector driven by about 45 SCFM of plant air at 80 psig. The suction port of this ejector could vent the rotary valves, entraining both the air and the 50 PPH of titanium dioxide. This was then discharged into the main conveying line at 5 psig, thus re-injecting the previously lost product back into the process stream. Units installed in 1985 are still in service with no erosion problem reported.

