

# Applications of Fox Venturi Eductors

## Case Study No. 4

**Material:** Plastic Pellets, 1/8" cylindrically shaped by 1/8" long; bulk density = 40 #/ft<sup>3</sup>.

**Problem:** The rotary valve used to handle approximately 4000 #/hr of plastic pellets was causing excessive damage to the product, causing chips, plastic threads (angelhair), and fines. These, in turn, exacerbated rotary valve wear, causing significant "blowback" and creating a severe maintenance problem. The airlocks required a great deal of maintenance attention but nevertheless occasionally failed and caused complete plant shut-down.

**Solution:** Replacement of rotary valve feeders with 3" Fox Venturi Eductors. Like most, the engineers responsible for this pneumatic conveying system had absolutely no experience with venturi eductors and even less confidence that it would work. The 3" eductor was shipped on a performance-guaranteed consignment order and evaluated at the plant.

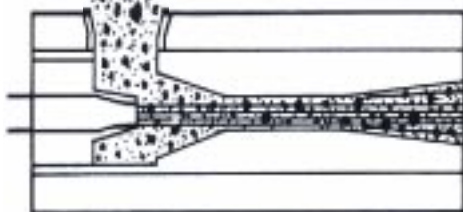
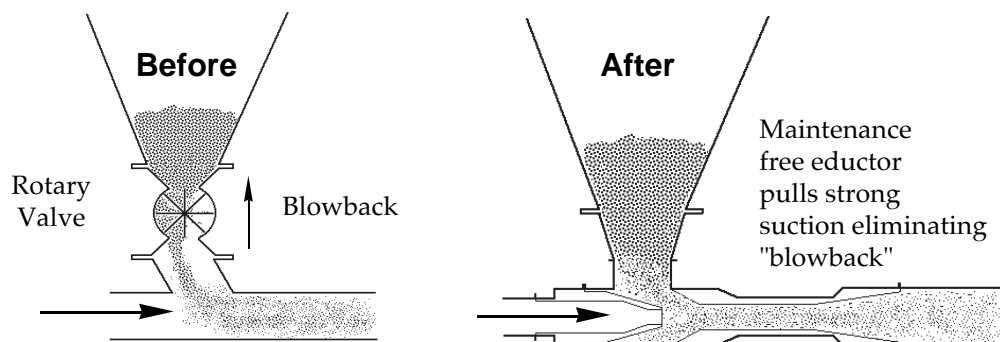
The results and a schematic are shown below:

I wish to inform you of the final 3" venturi performance test results. As you know the demo venturi was to be capable of conveying 4,000 lbs/hr of 1/8" diameter cylindrical shaped pellets (bulk density of 40 lbs/ft<sup>3</sup>) with 360 SCFM of convey air @ 10 psig maximum pressure.

We are very pleased to inform you that the Fox venturi has met the required performance criteria with the following actual operation data:

- a) Convey Rate: 4,860 lbs/hr
- b) Line Pressure: 6.1 psig
- c) Air Flow: 300 CFM

Note: As an added benefit clean-up, maintenance time and cost will be reduced on future projects by using venturi valves in place of rotary valve feeders.



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