

Replacing Rotary Valves with Fox Educators Conveying Pellets

CASE STUDY No.

4

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Applications of Fox Venturi Educators

CONVEYING WITH: NO MOVING PARTS - NO BLOWBACK - NO MAINTENANCE

PRODUCT

Plastic Pellets, 1/8" cylindrically shaped by 1/8" long; bulk density = 40#/ft³.

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 Educators. Like most, the engineers responsible for this pneumatic conveying system had absolutely no experience with venturi educators and even less confidence that it would work. The 3" educator was shipped on a performance-guaranteed consignment order and evaluated at the plant.

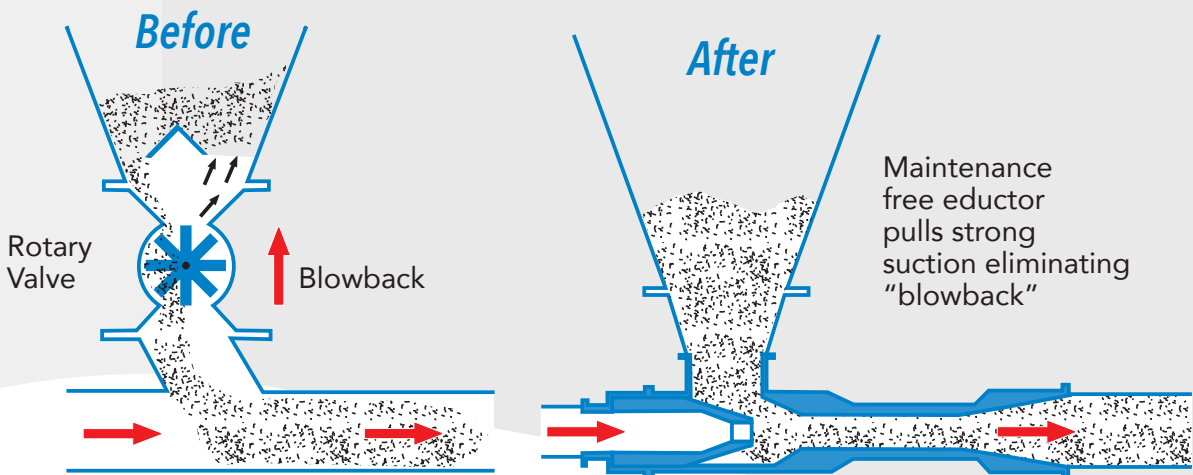
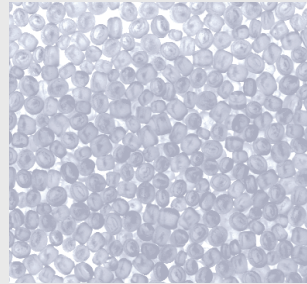
The results and a schematic are shown below:

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/ft³) 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.



FOR MORE INFORMATION:

Video: Educator Replaces Rotary Valve

<https://www.youtube.com/watch?v=bBFAvZSG5ml>

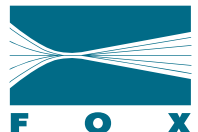
Visit our Plastics Page:

http://foxvalve.com/l2_solid_ce_plastic.aspx

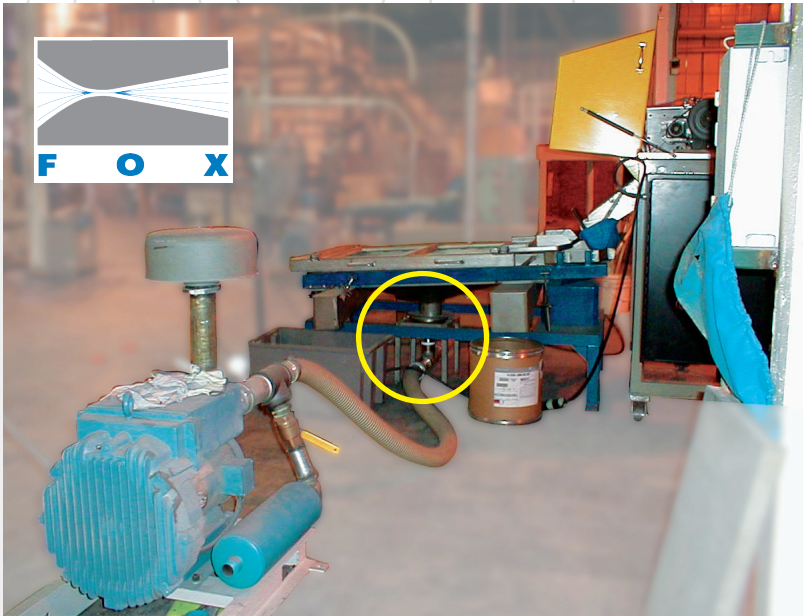
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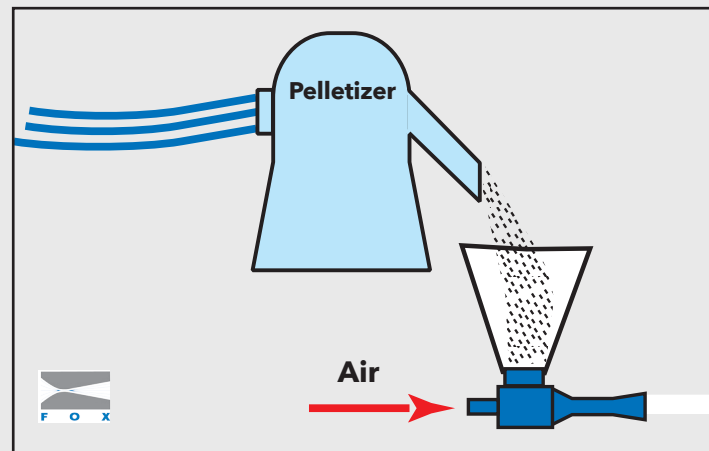
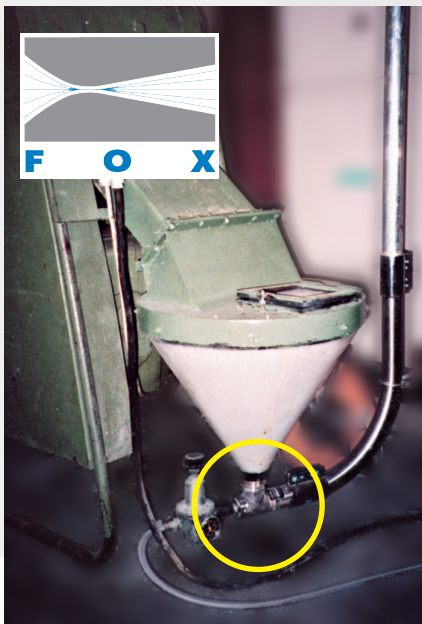


Replacing Rotary Airlocks with Fox Venturi Eductors Conveying Plastic Pellets



Fox maintains a large inventory of carbon steel and stainless eductors suitable for conveying plastic pellets that can usually ship in less than one week.

A Fox Venturi Eductor conveys pellets from a screener using air from a side channel blower at approx. 3 psig.



At left: A Fox Venturi Eductor conveys hot pellets directly from an extruder or pelletizer, as show schematically above.