# Fox Venturi Eductor for Venting Blowback from Rotary Valves

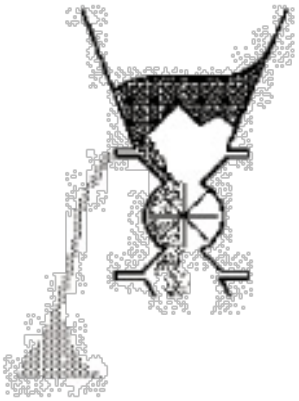
### What's Blowback?

Airlocks isolate and dose solids sitting above a positive pressure convey line.
Air from the conveying system inevitably leaks past clearances in the rotors, as well as the pulses of air released as each empty 'pocket' is rotated upwards. This release of air is called blowback.

### What's the problem?

Blowback causes a number of problems, ranging from minor nuisance, to bad, to very bad, to catastrophic:

- **Reduced Feed Rates** Blowback up into the feed hopper can so severely disrupt bin flow that throughput from the airlock can be be 30 - 70% below expectations
- **Hammering of Silo or Bin Outlets** Maintenance folks are known to damage outlets with hammers in an attempt to move powders hung-up or clogged by blowback.



- **High Wear and Erosion** Blowback , particularly with abrasive powders, can be responsible for rapid wear to airlock seals, bearings, and housings, causing sudden failures and requiring frequent maintenance.
- **Fugitive Dust, Leakage, Waste** Blowback results in dusty, dangerous work environments and when handling foods, housekeeping/pest problems.
- **Degraded Effectiveness of Process Equipment** Leaking airlocks cannot be placed under screeners and sifters, which often turn sieves into fluid beds.

### How do Fox Rotary Valve Venting Eductors help?

Fox Rotary Valve Venting Eductors ( RVE's) are used to suck blowback air + suspended solids out of the airlock and pneumatically convey them to the destination of choice: bin above, convey line below, other.

### What Results Can We Expect with a Retrofit?

It depends on how bad your blowback problem was in the first place. But over the last 25 years, we've seen the following widely varied results:

- ## Increase in Airlock Feed Rates

  We've seen airlock throughput jump a small amount to as much as 50 - 80% with the elimination of the blowback bubble stopping the flow of material into the airlock.

- ## Decreased Wear , Increased Service Life

  We've had customers who replaced airlocks every few months say they last many times longer after retrofit with Fox eductors.

- ## Leakage & Waste

  - Eliminated

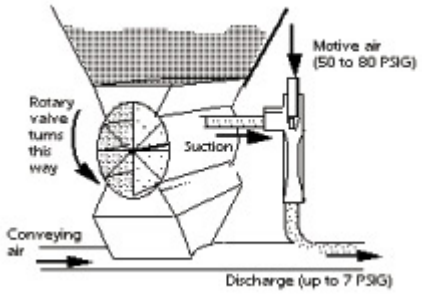
- ## Fugitive Dust

  - Elilminated

- ## Blowback into Screeners

- Eliminated

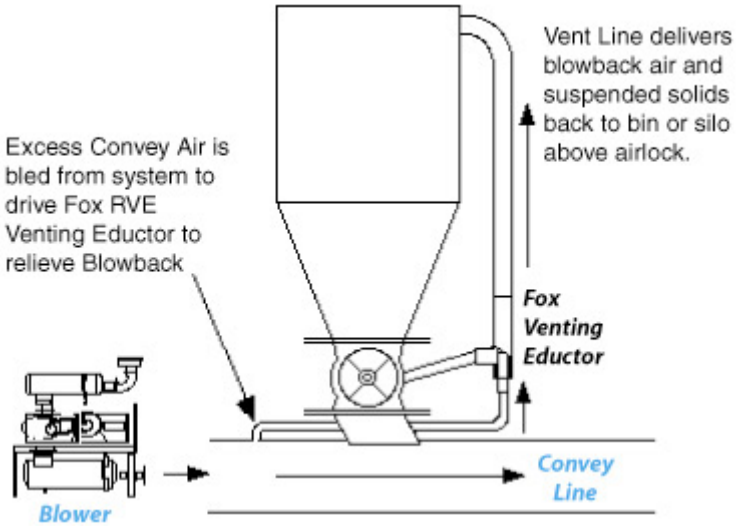
# Injecting Back Into the Convey Line




Of course, the neatest and simplest solution is for the Fox Venting Eductor to inject the blowback + suspended solids right back in the convey line. This certainly can be done.

For these applications, plant compressed air at 50+ psig is required. This is a very expensive solution that should be considered only for small leakage flow rates.

Request Fox Case Study #32 to learn about a specific application where retrofit with a Fox RVE Eductor made a huge difference!




### Avoiding Use of Compressed Air... Injecting Back Up the Silo/Hopper/Bin

The easiest place to vent blowback air and suspended solids is right back up into the silo or bin feeding the airlock, since this vessel is usually at atmospheric pressure. However, this line can be directed to any one of a number of places - a central dust collection line, the same final destination as the main convey line, or any vented vessel at 0 psig.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