Dry Bulk Sorbent Injection Systems

For SO_2, SO_3 & Hg Emissions Mitigation

Introduction

Increased legislation and mounting regulations have led large industrial boilers to seek reliable cost-effective methods to control sulfur and mercury emissions.

Nol-Tec supplies custom-engineered Dry Bulk Sorbent Injection Systems for mitigating SO_2, SO_3, and Hg emissions. These systems continuously transfer sorbent materials from storage silos to injection ports on boiler flue gas ducts. The injected material reacts with the pollutants in flue gas to effectively and efficiently reduce emissions. Each system is equipped with special features designed to prevent common problems and maintain production.

- Proven Technology
- Simple, Flexible Design
- Redundant Design
- Easy to Install
- Controlled Feed
- Self-Diagnostic Controls
- Clean
- Precise

A Typical System

Although system configurations vary with each application, a typical installation includes a number of storage silos sized to hold the appropriate inventory of dry sorbent material. The silos are filled pneumatically from bulk trucks or railcars and include attachments such as bin vents and level probes.

Depending upon a plant's physical layout, intermediate pneumatic delivery systems may be used to transfer product from the storage silos to intermediate receiving bins located closer to the duct injection locations.

The injection system begins at the discharge of the silo or receiving bin. Aeration promotes material flow. An automatic valve opens to drop the product into a continuous gravimetric loss-in-weight feeder. This feeder meters sorbent into a positive pressure dilute phase conveying line. The conveying line transfers the product through a splitter valve to individual duct injection lances. To increase efficacy, an in-line mill may be used to reduce the particle size of certain sorbents.

At the conveying line splitter, an automatic sensing system is employed to detect any plugs in the injection lines. If a plug is detected, the affected injection line is automatically purged to ensure continuous material flow to all injectors.

A typical system includes redundancy throughout, so product flow remains uninterrupted. Precautions are taken to eliminate potential problems associated with moisture ingress and dust emissions. Where applicable, variable speed controls are provided for motors to keep the operation flexible.

System electrical controls include PLCs with operator interfaces (HMIs) as well as a DCS interface and motor control centers.

Typical Sorbent Materials

- Hydrated Lime
- Trona
- Sodium Bicarbonate
- Powdered Activated Carbon

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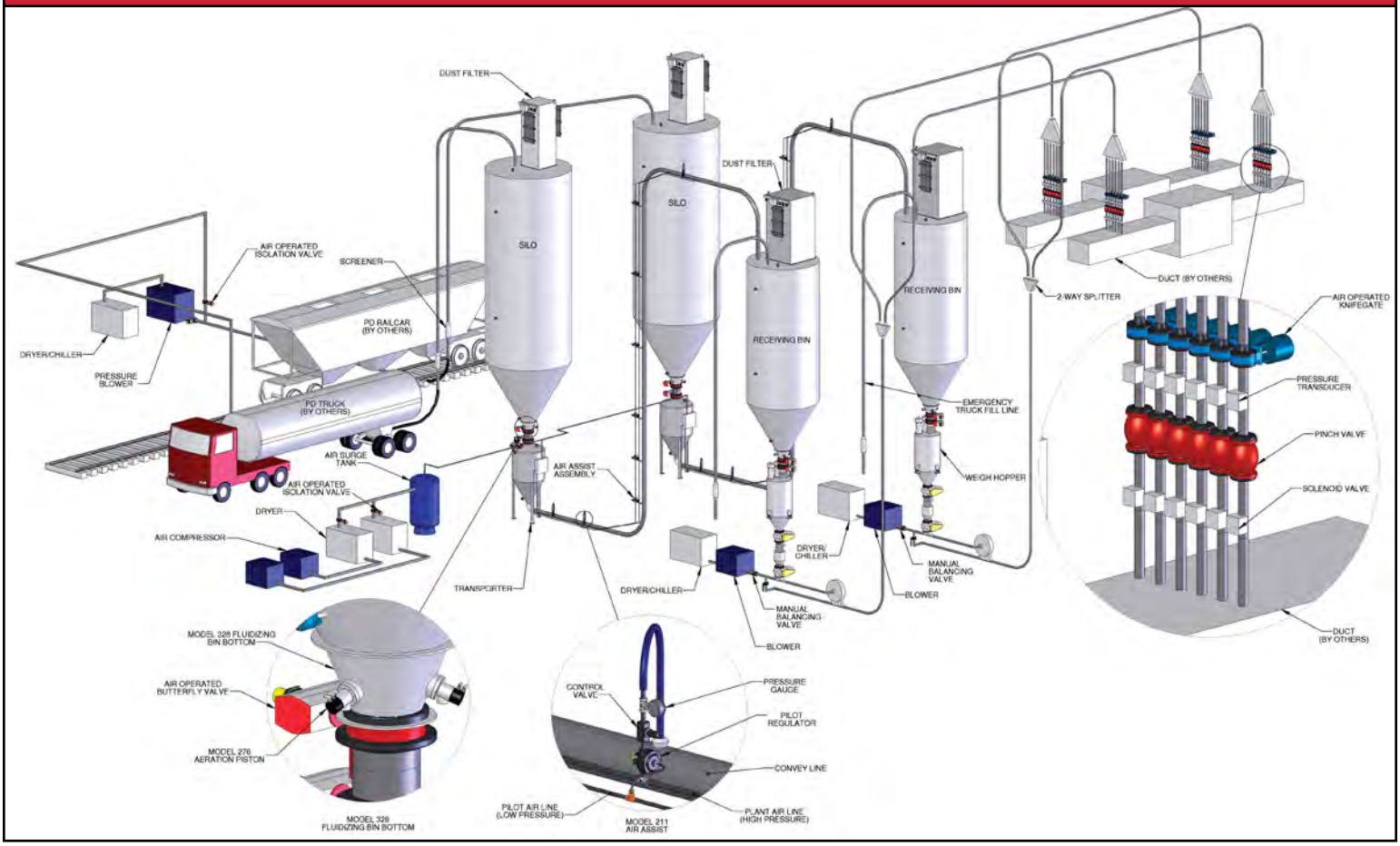
Injection Lances

Continuous Loss-in-Weight Feeder

If you would like more information about our Dry Sorbent Injection Systems, how they may suit your application, or the technology behind them, please contact us.

Typical Process Flow



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