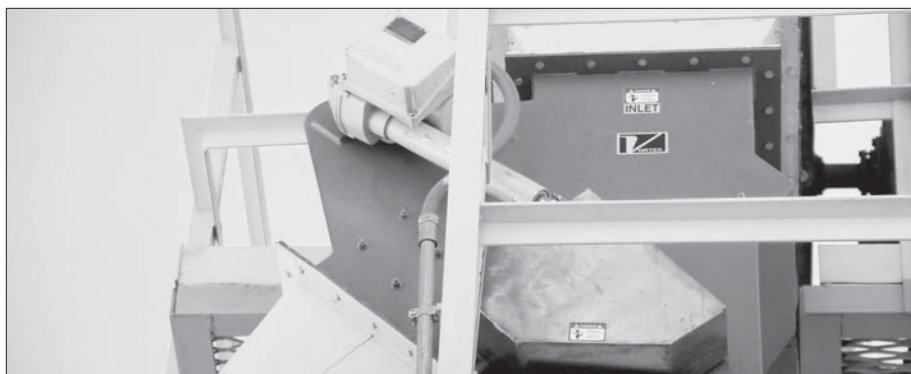


# Two-Way Gravity Diverter

Salina Vortex's Seal Tite™ technology prevents loadout contamination

With a total production capacity of 20,000 cwts. of flour per day, ADM Milling Co.'s flour mill at North Kansas City, MO (816-221-7272), also produces a large volume of millfeed, both in mash



*This Salina Vortex Seal Tite two-way gravity diverter is part of the millfeed loadout operation at ADM Milling Co.'s North Kansas City, MO, flour mill. Photo by Lightfoot Photography & Custom Laboratory.*

and pelleted form.

The mill ships millfeed by both truck and rail through the same loadout system, using a two-way diverter to route millfeed either to a semi truck or a covered hopper railcar.

Because ADM Milling sells more than one type and grade of millfeed, it's important not to have cross-contamination between different grades of millfeed. An airtight seal on the diverter is critical to preventing that sort of contamination, says Project Engineer Rick Corbett, at ADM Milling's engineering center in Salina, KS (785-825-1541).

The company was quite interested when Salina Vortex Corp., Salina (785-825-7177/www.salinavortex.com), announced the development of its new Seal Tite™ two-way gravity diverter valves.

"They're located right in the same town with us," Corbett says, "and they showed us what they were working on (during product development). We were definitely interested."

## How It Works

Introduced in February 2001, the Seal Tite gravity diverter is designed to handle drybulk material in gravity flow applica-

tion where material is required to be diverted from one source to either of two destinations. It is designed to overcome problems inherent to conventional flapper diverters. Among the major differences between the Seal Tite and the older flapper designs:

- With flapper diverters, the manufacturer states, material flow through the diverter creates abrasion to the leading edge of the flapper vane, causing leakage and cross-contamination of material. The Seal Tite diverter is engineered to channel the flow of material away from the leading edge of the flapper vane.

- In older flapper diverter designs, the vane and vane seals are difficult to get to and not easily replaced. The Seal Tite diverter has an access door that allows replacement of the vane or vane seal, when necessary, without having to remove the diverter.

- The Seal Tite diverter is manufactured using TIG welding, for reduced heat distortion, and laser manufacturing technology that provides closer tolerances than were attainable with the older fabrication technology utilized in many traditional flapper diverters.

- Traditional flapper diverters have ex-

## CASE STUDY

tremely weak or no shaft seals, causing leakage and cross-contamination. The Seal Tite diverter features a live-loaded, wear-compensating, polymer shaft seal, eliminating product leakage past the vane shaft.

- An optional "clean-in-place" access panel with spin knobs allows for quicker access to the interior of the diverter for inspection, cleaning, or sanitation purposes.

- Buyers have a choice between carbon steel or stainless steel construction. At North Kansas City, stainless was the choice. "It's an outside installation," says Corbett, "and we think stainless steel will be more durable under those conditions."

- Another option is availability with either a double-acting air cylinder, a hand lever, an electric motor, or a chain-wheel actuator. All drive equipment is fully guarded, with no pinch points.

- The design eliminates the internal ledges found in some older diverters, for improved cleanliness and minimal chance for cross-contamination.

## Models Available

The Salina Vortex Seal Tite gravity diverter is available in two basic models:

- Model Z-SL is a straight-line vertical shaft, with an off leg at 45 degrees. An off leg at a 30-degree angle is available. The North Kansas City installation is a Model Z-SL with a 45-degree off leg. Square-to-round transitions are available.

- Model Z has a vertical inlet and dual off legs at 45 degrees off vertical. Dual legs at 30 degrees off vertical are available.

"So far, so good," Corbett says of the Seal Tite diverter's performance at North Kansas City. Current plans are to add more Seal Tite two-way diverters as replacements are needed at company flour mills.

Corbett does have an item for Salina Vortex on his wish list, however. "I'd love to see them develop a Seal Tite three-way diverter," he says.

*Ed Zdrojewski, contributing editor*