DeZURIK KNIFE GATE VALVE SOLUTIONS FOR CARBON BLACK PROCESSING

Carbon black processing involves producing a fine, carbon rich particulate used in rubber reinforcement, pigments, plastics, and other industrial applications. It is typically manufactured through the furnace black process, where heavy hydrocarbon feedstocks are combusted under oxygen limited conditions to create soot-like particles. These particles are then cooled, collected, pelletized, and classified by particle size and structure. Throughout production—pneumatic conveying, mixing, slurry transfer, drying, cooling, and packaging—the material's fine and dense characteristics require precise handling and reliable process control.

Carbon Black Applications and Knife Gate Valves

Isolation knife gate valves control material flow in the furnace black process from gas-solid separation through pelletization by providing positive shutoff at bag filter hoppers, transfer chutes, and surge-bin or feed-hopper outlets. They isolate rotary airlocks, screw conveyors, and conveying equipment during maintenance or changeover, and allow operators to safely stop flow to the pelletizer without emptying upstream vessels. The knife gate valve's abrasion-tolerant design provides reliable shutoff and clean shearing of fine carbon black, ensuring safe, consistent material handling throughout the process.

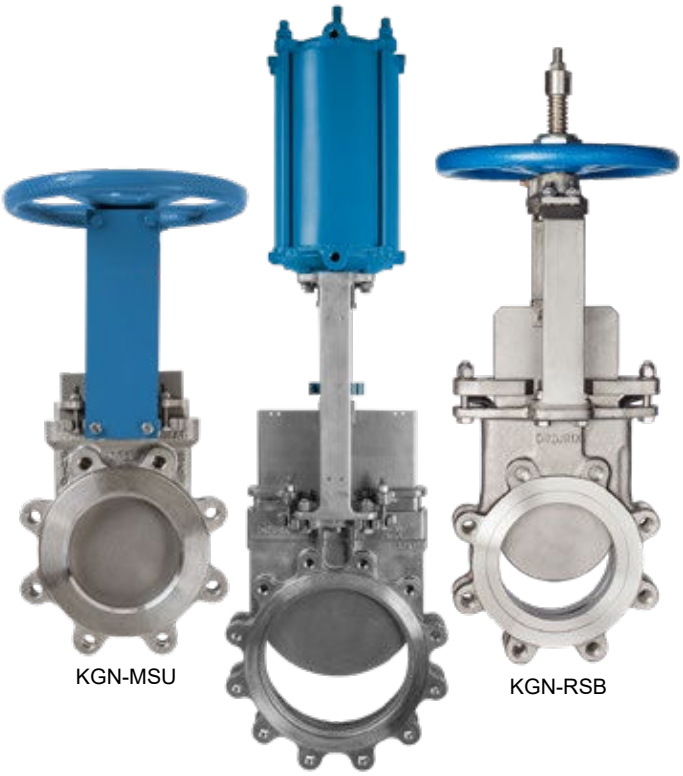
Challenge

Carbon black is extremely fine, abrasive, and easily airborne. Its erosive nature accelerates wear on isolation valves, especially in pneumatic conveying lines and slurry systems. Valves often experience buildup, packing degradation, seat erosion, and leakage, resulting in downtime, and maintenance issues. High temperatures, continuous flow demands, and the need for reliable shutoff further elevate the performance requirements for any equipment operating in carbon black service.

Fine, powdery carbon black used in rubber reinforcement, pigments, plastics and insulation of electrical equipment.

Solution

DeZURIK Knife Gate Valves are engineered to meet the demanding conditions of carbon black processing, where abrasive, erosive media require robust performance. Abrasion resistant gates, hardened materials, and heavy duty wear components provide long lasting durability, while scraper ring packing systems keep the gate clear of debris and help prevent media from escaping through the packing box. Standard designs deliver reliable service up to 450°F (233°C), and custom fabricated high temperature constructions maintain stability up to 1000°F (540°C) for more severe applications. Optional flush ports further reduce material buildup and promote consistent cycling. With resilient or metal seated configurations that ensure tight shutoff in both pneumatic and slurry service, these valves offer improved containment, reduced maintenance, and extended service life throughout the carbon black handling process.



KGN-MSU

KGC-ES

KGN-RSB

H-200-B

Summary

Carbon black processing places significant stress on valves due to the material's fine, dense, and abrasive characteristics. DeZURIK Knife Gate Valves deliver a durable, reliable solution with superior wear resistance, a debris-clearing packing system, and proven sealing performance. By delivering consistent isolation and extended service life, DeZURIK valves help ensure efficient, dependable, and safer operation throughout carbon black production and handling systems.

For additional information on DeZURIK Knife Gate Valves or any of DeZURIK's other products, visit DeZURIK.com or contact your local DeZURIK representative.

SALES AND SERVICE

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