

HILTON KNIFE GATE VALVE SOLVES CHALLENGES IN WASTEWATER FILTER BYPASS SYSTEM

Challenge

The Northeast Ohio Regional Sewer District needed to replace four 48" butterfly valves in their wastewater filter bypass system at the Southerly plant. The existing butterfly valves were not a good choice for the application due to the disc in the center of the flow path. Because of their design, butterfly valves are not generally recommended for handling dirty media. The plant required a solution that provided a full-port opening to maximize flow while maintaining reliable operation in a space-constrained environment.

One of the key challenges in this project was the limited installation space. The full-ported replacement valves needed to fit within the same face-to-face dimensions as the previous butterfly valves. Additionally, vertical clearance was limited due to the ceiling's proximity to the installation area. The request for electric actuators added another layer of complexity, as they increased the overall height and further exacerbated the space constraints.



The Hilton Bonneted Knife Gate Valve includes gate guides, a drain port, and actuator support to accommodate the horizontal mounting position.

Solution

To solve these challenges, DeZURIK provided Hilton bonneted knife gate valves specifically designed for horizontal installation. Since there wasn't enough vertical clearance, the valves were rotated 90 degrees to accommodate the available space. This positioning allowed DeZURIK to take advantage of the short face-to-face and full port of knife gate valves.

The solution also incorporated additional features to ensure long-term reliability. Internal gate guides were included to prevent gate wear from horizontal mounting, a drain port was added to the bonnet to manage fluid buildup, and actuator supports were added to prevent side load stresses. DeZURIK provided the valves in 316 stainless steel to meet the plant's specification for corrosion resistance in the wastewater environment.



The knife gate valve's narrow face-to-face dimension allowed it to be installed in the confined area.

As a result of these solutions, the facility successfully replaced the old butterfly valves with more efficient knife gate valves that provided the full port opening required. The valves were installed despite the space constraints, improving flow efficiency and ensuring reliable operation for years to come.



A 48" butterfly valve installed in a filter bypass line was not a good solution for handling the dirty media because of the disc in the center of the flow path.

SALES AND SERVICE

For more information, contact DeZURIK

DeZURIK.com

info@dezurik.com

250 Riverside Ave. N.
Sartell, Minnesota 56377

Phone: 320-259-2000



DeZURIK, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing by DeZURIK, Inc. Certified drawings are available upon request.