FACTSHEET

Smith & Loveless, Inc.
Manufacturers of quality wastewater products

2-1300

The Hydraulically Superior Kraus-Fall Clarifier

Submerged Header Peripheral Feed Clarifier

Full-scale dye tests and extensive field analysis demonstrate the advantages of the Kraus-Fall Peripheral Feed Clarifier/Peripheral Take-off for final or secondary clarification or nitrification. More hydraulically efficient than other clarifiers, the Kraus-Fall Peripheral Feed design utilizes more of the clarifier volume. Higher efficiency even at overflow rates in excess of 1,200 gpd/ft.^{2} (48.9 m^3/m^2 day) make the Kraus-Fall Clarifier ideal for installations with wide variations in flow.

Applications for the Kraus-Fall Clarifier include final or secondary clarification and nitrification.

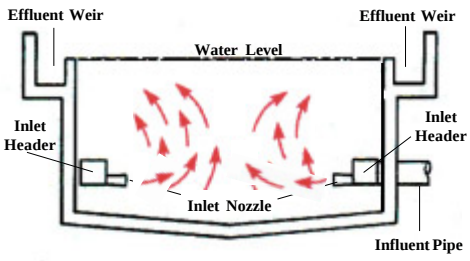
Advantages of Peripheral Feed Versus Center Feed

- **Prevents short-circuiting** of the flow to the weir because the inlet velocity is greater than the rise rate.
- **Better settling** and effluent quality. Excellent for facilities with high infiltration.
- **Promotes efficient solids and liquid separation** because most solids do not settle against the upward flow of water.
- **Higher allowable overflow rates** allow for higher peak flows, higher flow variations and higher mass loadings with better settling and effluent quality.
- **Reduces density currents** by introducing the flow near the sludge blanket via influent downcomers.

Submerged Header Benefits

- **Simplifies design**, installation and maintenance.
- **Full surface skimming** eliminates problems associated with variable width inlet trough or skirt design clarifiers, such as the removal and freezing potential of scum in this area.
- **Creates an even distribution** of liquids and solids around the entire periphery of the clarifier with a minimum of head loss.
- **Reduces equipment requirements**, including inlet baffle, skirt, trough, and energy diffusion wells.

Kraus-Fall Clarifier Flow Path



Submerged inlet header provides a longer flow path for the solids to travel and uses more of the clarifier area for settling, dampening the effects of flow variations.

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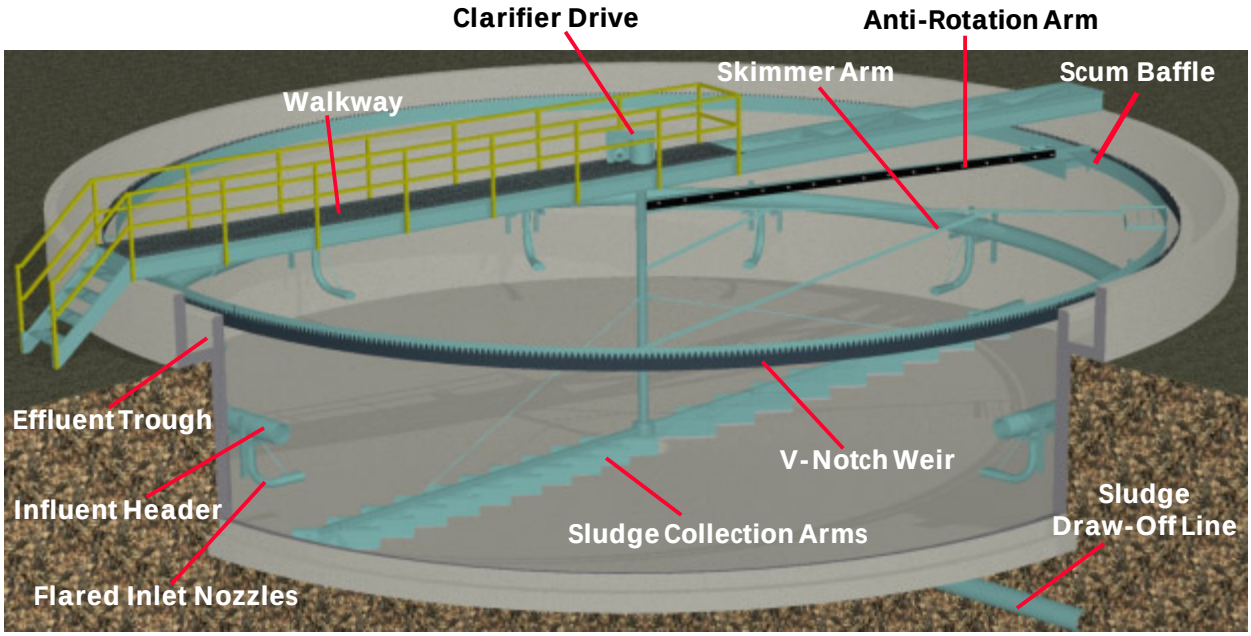
Kraus-Fall Clarifier



Superior Skimming

The highly efficient skimmer adds to the overall efficiency of the Kraus-Fall Clarifier. Unlike other peripheral feed clarifiers, the Kraus-Fall design utilizes a full-radius arm that skims the entire clarifier surface. All floating material is collected on each rotation of the skimmer arm. Smith & Loveless' exclusive Anti-Rotation Arm combines with the skimmer to provide a patented "wedging" action to force the collected scum outward and into the scum box.

Unique Inlet Design

The superiority of the Kraus-Fall Clarifier stems from its unique design, which utilizes the noncorrosive submerged inlet header. This design distributes flow around the entire periphery of the tank, ensuring an even distribution of flow and reducing inlet velocity.

The flow is introduced horizontally into the clarifier through flared inlet nozzles, just above the sludge blanket level and in a direction toward the center of the clarifier. This unique inlet design reduces the density currents and allows for easy separation of the solids from the liquid for more efficient settling. These nozzles are evenly spaced around the tank to distribute the mixed liquor horizontally toward the center of the clarifier. The Kraus-Fall Clarifier is available in both a full bridge and half bridge design. Biosolids are then collected by one of four available collection systems including scraper, sightwell, suction arm or a combination design.

The Kraus-Fall design featuring the submerged inlet header can utilize either concrete or steel tankage.

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