

FACTSHEET

Smith & Loveless, Inc.

Manufacturers of quality wastewater products

3-1300

The Best Clarifier for Biological Wastewater

Kraus-Fall Half Bridge Peripheral Feed Clarifier

Full-scale dye tests and field analysis of data demonstrate the advantages of the Kraus-Fall Peripheral Feed Clarifier for final or secondary clarification. More hydraulically efficient than other clarifiers, the Kraus-Fall Peripheral Feed design utilizes more of the clarifier volume. Higher efficiency combined with overflow rates in excess of 1,200 gpd/ft.² (48.9 m³/m² day) make the Kraus-Fall Clarifier ideal for installations with space limitations.



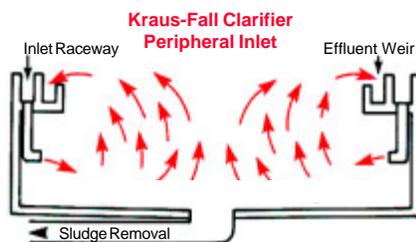
The four, 110 ft. Kraus Fall Clarifiers (seen in the foreground) provided BOD₅ removal in stage one. The three, 122 ft. stage two clarifiers (seen at back) provided nitrification for an average design flow of 20MGD through each stage.

Advantages of Peripheral Feed Over Center Feed

- Creates a positive distribution of liquids and solids evenly around the entire periphery of the clarifier
- Prevents short-circuiting of the flow to the weir because the inlet velocity is greater than the rise rate
- Promotes efficient solids and liquid separation because the solids do not settle against the upward flow of water
- Simplifies design, installation and maintenance
- Better settling and effluent quality
- Handles high peak flows, high flow variations and higher mass loading

Peripheral Feed Benefits

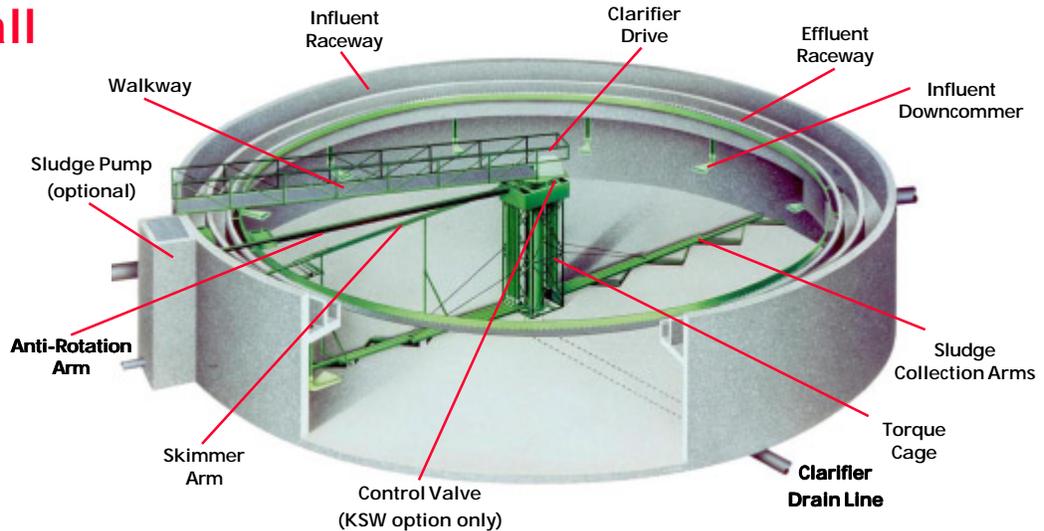
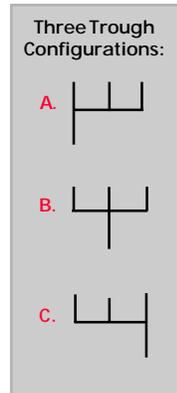
- Influent downcomers introduce flow just above the sludge blanket to reduce density currents
- Higher overflow rates make it ideal for installations with space limitations
- Full surface skimming eliminates problems associated with variable width inlet trough or skirt design clarifiers, such as the removal and freezing potential of scum in this area
- Influent raceway provides longer path of travel to minimize the effects of flow variation while maintaining a constant width
- Smith & Loveless designs and manufactures all components, including the inlet system, requiring only straight forward installation and offering single-source reliability



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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 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, which maintains a seal against the scum baffle and against the pocket side. Smith & Loveless' exclusive Anti-Rotation Arm prevents surface scum from rotating on the clarifier surface with the skimming arm.

Available biosolids collection systems:

- 💧 **KSW Suction-Riser Pipe** – Multiple tube scraper arms lead to a sight-well that is concentric with the center column of the surface.
- 💧 **KSA Suction Arm** – Collects sludge evenly across the entire clarifier floor.
- 💧 **KS Scraper** – Scrapes settled sludge with two scraper arms that cover the clarifier floor twice for every revolution.
- 💧 **KSS Suction-Scraper** – Combines the model KSA and KS benefits for the ultimate in sludge removal.

Clearly Better

The Kraus Fall Peripheral Feed design utilizes an inlet trough with orifices. The influent is distributed around the entire circumference of the tank. The flow is then input horizontally into the clarifier through flared inlet nozzles in a direction toward the center of the clarifiers. These nozzles are spaced evenly around the tank and are located at an elevation of approximately one-third the side water depth. Because the flow is introduced near the sludge blanket level, this reduces the density currents and allows for easy separation of the solids from the liquid for more efficient settling.



The Kraus-Fall design is ideal for clarifier upgrades and can utilize either concrete or steel tangeage.



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