

# Liquid Cyclone Cleaner

Removes sand, grit, glass, staples, and other high density materials

*The simple solution  
to high density  
contaminant removal*



# Liquid Cyclone Cleaner

## System Applications

The Liquid Cyclone cleaner is a free vortex type separator designed for efficient removal of contaminants from all types of applications including OCC coarse screen protection, refiner protection, and deflaking protection in a broke system. Liquid Cyclone cleaners generally operate in the 20-35 psi (140-238 kPa) pressure drop range at consistencies of 0.1% to 5.0% to remove contaminants like metal clips, glass, sand, metal foil, and other small, heavy debris and abrasives from stock. A wide range of sizes and system configurations are available to accommodate any production requirements.

## Value to the Core

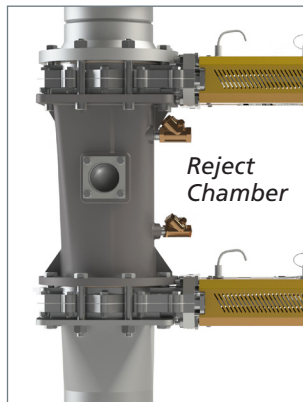
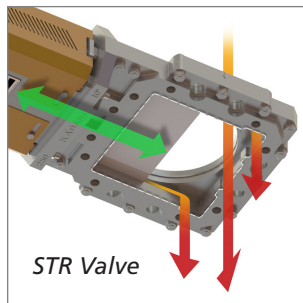
The heart of any Liquid Cyclone cleaner is the replaceable cone cartridge. A thick aluminium oxide ceramic wear surface maximizes the service life of the cone cartridge. All other wetted parts in the Liquid Cyclone cleaner are cast iron/carbon steel, or optional 316L stainless steel.

## STR Valves Run Strong and Secure

Integral to the Liquid Cyclone, the STR Valve provides reliable continuous output of both reject material and defibered accept pulp. These valves are designed with a pre-loaded hardened seat and feature a scraper blade to protect the packing.

The square relief of the seat ensures contaminants do not get trapped in the gate during the dump cycle. The cast iron Reject Chamber, along with the elutriation ports and a sight glass, optimize cleaner performance and reduce maintenance demands.

For more information on STR Valves, Reject Chambers, and STR Valve kits, contact a Kadant representative.



## Basic System Operation

Stock enters the Liquid Cyclone cleaner through our **EX Inlet Head**. Accelerated through centrifugal action, the stock spirals downward along the wall contour toward the small end of the cone. Undesirable heavy particles such as grit, glass, and metal are forced to the outer wall and carried down and out at the bottom of the cone. The cleaned fibers spiral up the center and exit out the **Vortex Finder** at the top of the cleaner.

## EX Inlet Head with Vortex Finder

This inlet's unique spiral design and rugged construction provides a longer and larger inlet radius to improve hydraulic capacity, reduce power use, and minimize wear caused by fluid momentum change. The **Vortex Finder** provides greater efficiency by optimizing the collection of accepts.



## Benefits



**Low maintenance** – Minimal valves means minimum maintenance, parts, and labor resulting in maximum uptime



**Non-plugging design** - Clear and continuous operation with minimum operator attention



**Stock loss minimized** by reject chamber and intermittent dumping



**Maximizes floor space** – Vertical sectional arrangement allows convenient placement and servicing



**Self-supporting design** – all structural steel supplied with each unit

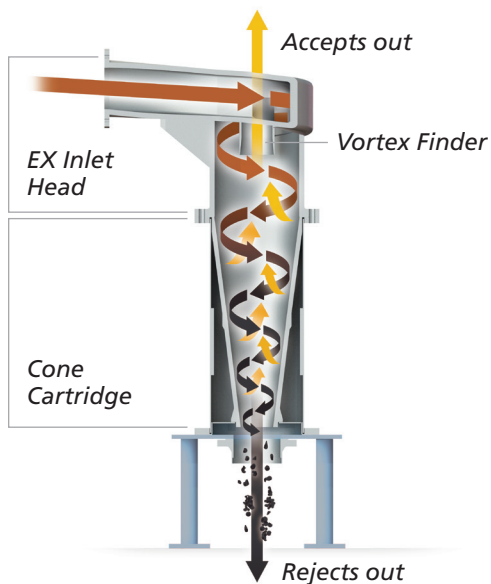


**Multiple choices for rejects** – Rejects can be discharged into a trough, box, or SansGrit™ separator above or below the floor

# Flexible operational configurations to best meet your needs

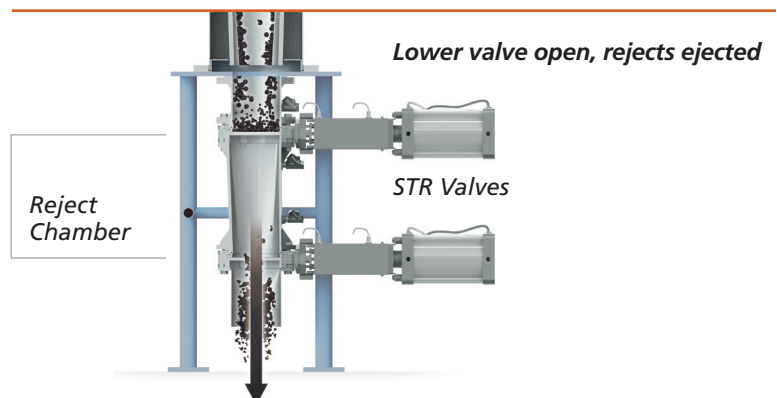
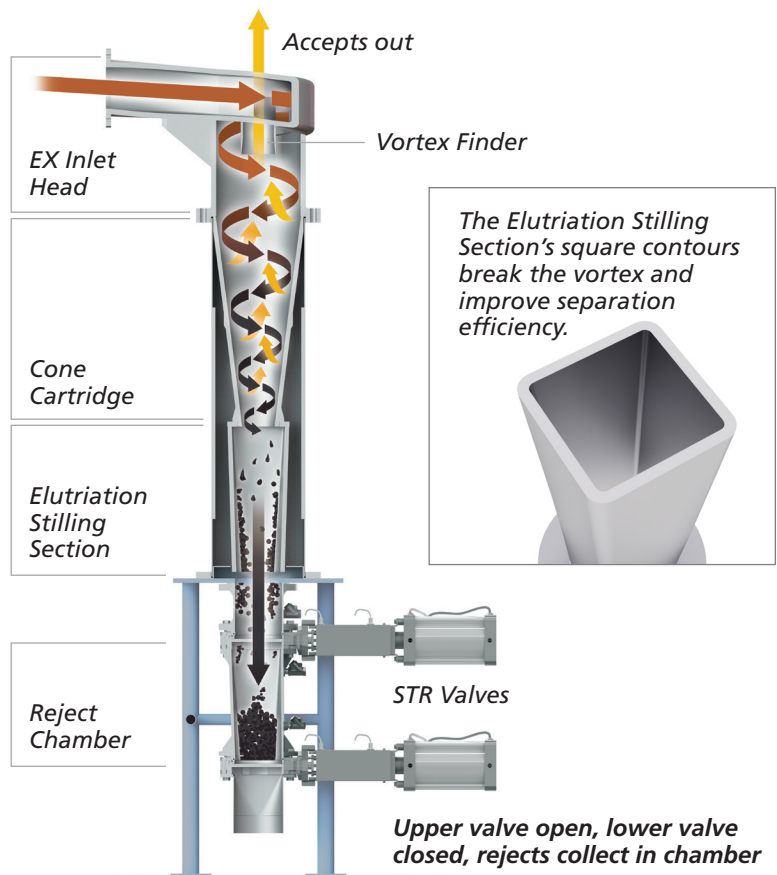
## Continuous Rejects

A constant reject stream exits the cleaner that can then be sent to an **intermittent reject** Liquid Cyclone cleaner to recover additional usable fiber. This **two-stage** cleaner arrangement is particularly effective in high contamination applications. The rejects from this configuration are then funnelled into a SansGrit separator for further sand and grit removal.



## Intermittent Rejects

In **intermittent reject** Liquid Cyclone cleaners, the contaminants collect in a square **Elutriation Stilling Section** where the reject materials separate from the fibrous materials and the rejects settle into a **Reject Chamber** just below. A STR Valve separates the Elutriation Stilling Section and the Reject Chamber. The intermittent cleaner purges the rejects through timed control of the valves. With this configuration, there is almost no fiber loss and the cleaner is extremely plug resistant.

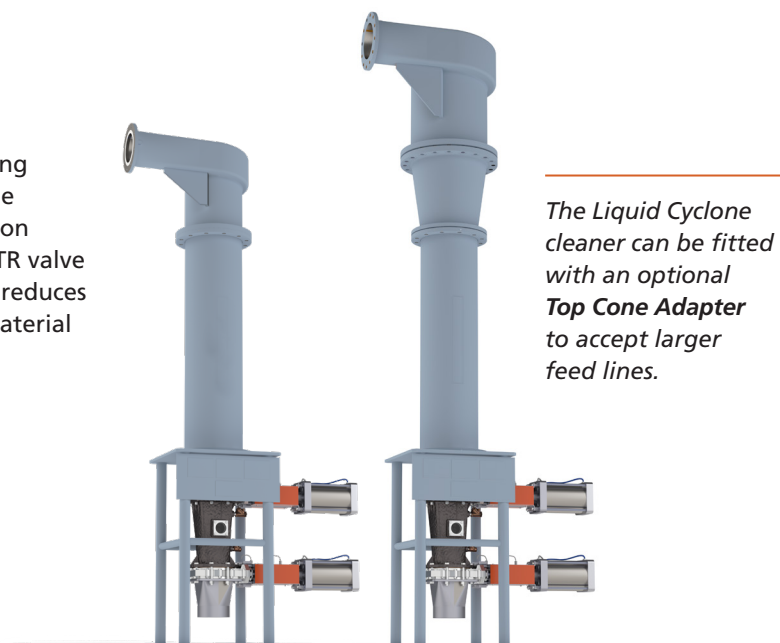


# The results

The Liquid Cyclone cleaner is a rugged, efficient, easy-to-operate and maintain solution for removing destructive debris from the fiber stream. Its unique spiral inlet minimizes wear and energy consumption needed to maximize contaminant removal. The STR valve chamber isolates valves, minimizes plugging, and reduces maintenance with its featured (hardened) gate material and padding protection.



Fiber-free rejects



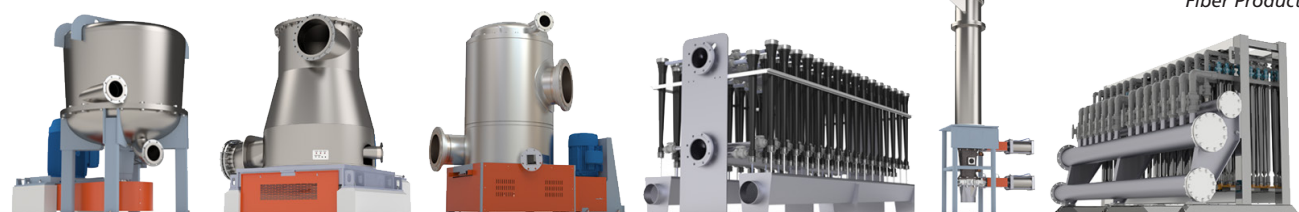
*The Liquid Cyclone cleaner can be fitted with an optional **Top Cone Adapter** to accept larger feed lines.*

**Certified Parts and Service 24 Hour Hotline  
for North America: 1-800-448-5422**

The Kadant Black Clawson **Foundations** product line offers a full range of fiber processing equipment and services.

# Foundations

*Fiber Product Line*



Float Purger™ Stock  
Cleaning System

Periscreen™  
Low Pulse Screen

Ultra-V™  
Vertical Pressure Screen

XX-Clone™  
Through-Flow Cleaner

Liquid Cyclone™  
Cleaner

Xtreme™  
Reverse Cleaner

For patent information about this and other Kadant products visit <https://kadant.com/en/patents>

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