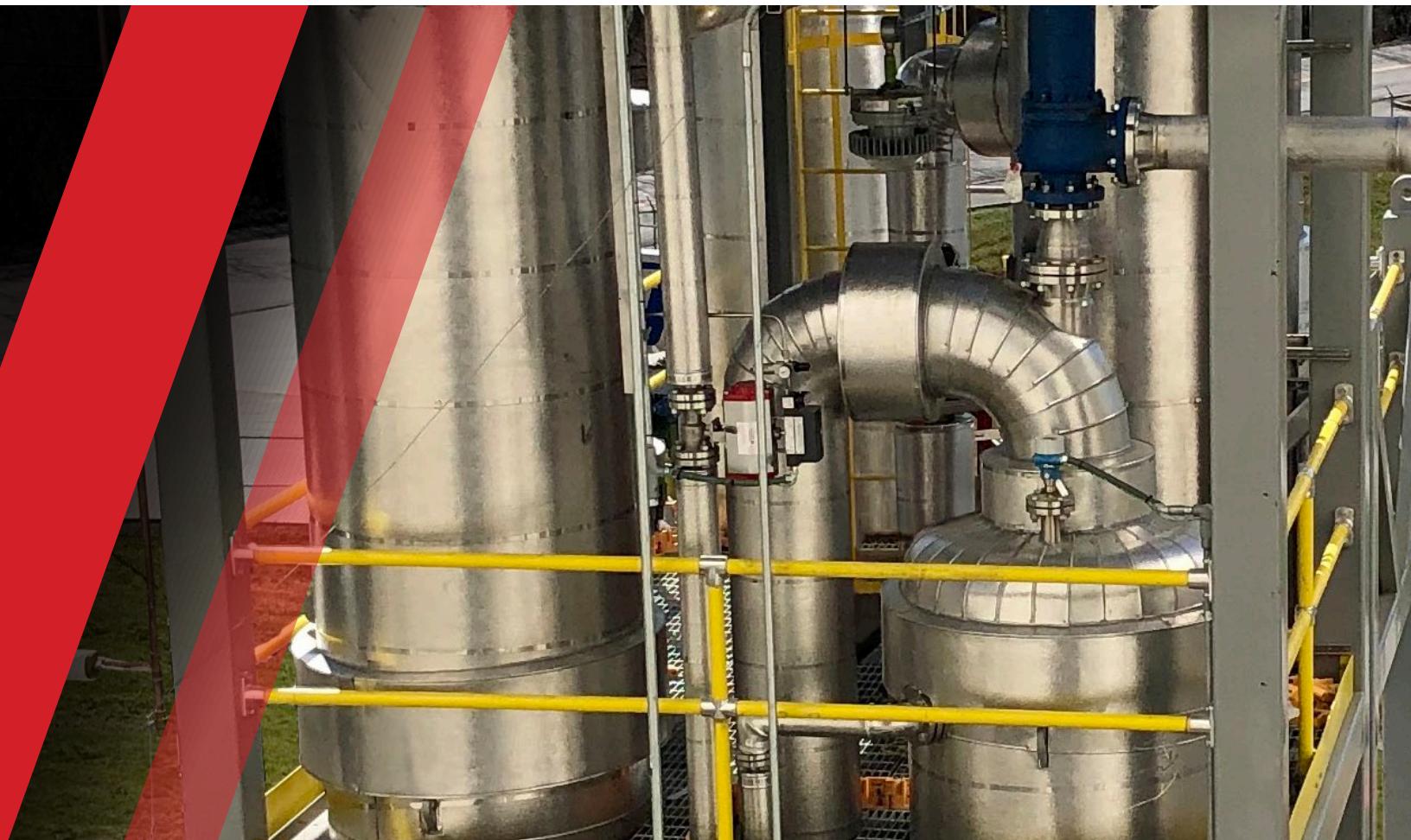


# Evaporation, Distillation & Separation

Buflovak's proven line of evaporators, distillation systems, and separation equipment delivers reliable performance across a wide range of processing industries. Engineered for precision and efficiency, these systems are designed to handle complex separation processes including concentration, purification, and recovery of valuable materials.

With over a century of experience and a commitment to innovation, Buflovak customizes each system to meet specific process requirements backed by in-house testing and pilot capabilities to ensure optimal results. Our wide range of proven evaporation systems, distillation equipment, and heat transfer solutions are engineered to deliver superior product quality, maximize process efficiency, and optimize return on investment.



## *Evaporation, Distillation & Separation Solutions*

- Forced Circulation Evaporators
- Falling Film Evaporators
- Rising Falling Film Evaporators
- Natural Circulation/Rising Film Evaporators
- Plate Evaporators
- Evaporative Crystallizers
- Distillation Systems & Heat Transfer Equipment

# Buflovak

# Evaporative Crystallizers

Buflakov Evaporative Crystallizers are engineered for consistent, high-purity crystal production while recovering valuable solids and reducing liquid volumes. Effectively deliver small or large crystals from liquid solutions in batch or continuous operation regardless of the solubility curve. Designed for a wide range of applications from industrial salts and specialty chemicals to waste stream concentration these systems combine evaporation and crystallization into one efficient, scalable solution.

## Features & Benefits

- Precise temperature and flow control for uniform crystal growth.
- Efficient solid-liquid separation with minimal carryover.
- Built with stainless steel or specialty alloys to withstand aggressive process fluids.
- Engineered surfaces optimize thermal efficiency for consistent crystallization.
- Tubes are fully accessible for inspection, minimizing downtime.
- Ensures rapid evaporation and high concentration without large heating surfaces.
- Built for reliable, around-the-clock industrial performance.



# Falling Film Evaporators

Buflakov Falling Film Evaporators offer distinct operating advantages in the concentration of many materials, such as certain food products, fruit juices, pharmaceuticals and similar materials, which are particularly suited to evaporation in this type of equipment. They can be used advantageously with Thermal-Recompression for energy savings and cost reductions by reusing steam for evaporation.

## Features & Benefits

- Flexible in operation, permitting continuous or batch operation.
- Simplicity of construction permits economical use of corrosion resistant materials.
- Low power requirements for economical operation.
- Low holding volume minimizes exposure to heat and prevents product degradation.
- Configurable as a counter current falling film unit for stripping applications.



## Rising Falling Film Evaporators

The Rising Falling Film evaporator works on uniform metered flow entering the bottom of the steam chest and rises through the first pass with rapidly increasing velocity. After leaving the first pass the flow of the vapor liquid mixture is reversed and directed downward through the second pass at extremely high velocity. The mixture then enters the separator where the vapor and liquid are separated.



### Features & Benefits

- High tube velocity minimizes fouling and produces a metered flow resulting in uniform product distribution and high coefficients of heat transfer.
- Designed to achieve high concentrations at low temperatures.
- System may be turned down without loss of efficiency or effectiveness.
- Suitable for evaporation of a wide range of liquid concentrations.
- Low headroom requirement for space-constraining installations.
- Direct liquid discharge from the steam chest prevents return flow with separator vapor, resulting in significantly reduced entrainment and cleaner operation.

## Natural Circulation/Rising Film Evaporators

Buflakov's Natural Circulation (NC)/Rising Film Evaporators are designed to efficiently concentrate liquids—particularly those that are heat-sensitive or prone to fouling. These evaporators use the principle of thermal convection to circulate liquid through vertical tubes where vaporization occurs.

### Features & Benefits

- Speeds up product changeovers and reduces contamination risk.
- Simple design lowers spare parts inventory and labor requirements.
- Low residence time prevents degradation of heat-sensitive liquid materials.
- Versatile and customizable design can be equipped with vapor separators to manage foaming products.
- Natural circulation design minimizes the re-entrainment of liquid with the vapor stream.
- Separates vapor from the liquid mixture at the top of the heating tubes producing high-quality distillate, making them suitable for water recovery or purification processes.



# Forced Circulation Evaporators

Bufllovak Forced Circulation Evaporators use a high efficiency circulating pump designed for large volumes and sufficient head to provide the force for evaporation. These evaporators deliver a controlled temperature rise and temperature difference, and guarantee optimum heat transfer tube velocities.



## Features & Benefits

- Liquid is heated in the steam chest (no boiling in the tubes) to reduce or eliminate tube wall fouling.
- Readily accessible tubes for cleaning and inspection.
- Horizontal or vertical steam chest design for various applications.
- Operates with extremely low temperature differences for precise control.
- High-efficiency circulating pump design ensures controlled velocities through the tubes for optimal heat transfer rates.

# Plate Evaporators

Evaporate, desolventize, devolatilize and strip solvents from viscous and heat-and-shear sensitive materials with Bufllovak's Plate Evaporator. Built for industries that require energy savings, gentle processing, and high throughput, these evaporators are ideal for concentrating heat-sensitive or low-viscosity liquids. With decades of engineering excellence behind every system, Bufllovak Plate Evaporators combine proven technology with custom-built reliability.

## Features & Benefits

- Corrugated plate design creates turbulence for superior thermal performance.
- Tower-less design accommodates low headroom requirements.
- Patented plate design virtually eliminates foam production and ensures high heat transfer rates.
- Compatible with multi-effect evaporation and thermal vapor recompression.
- Rapid, single pass product processing for minimal product degradation of heat-sensitive materials.
- Plates can be added or removed as required for versatility in various product applications.



# Distillation Systems & Heat Transfer Equipment

Buflakov Distillation Systems are designed to separate volatile components through controlled vaporization and condensation, offering exceptional product purity and solvent recovery efficiency. From single-stage batch units to continuous multi-column systems, Buflakov tailors each design to your chemical properties, pressure conditions, and throughput needs.

## Features & Benefits

- Engineered for space savings and optimal thermal exchange performance to provide high heat transfer coefficients.
- Heat transfer and reboiler designs reduce steam and utility consumption.
- Constructed in stainless steel, Hastelloy®, and other corrosion resistant alloys for sanitary or chemical environments.
- Available in batch, semi-batch, and continuous configurations.
- Available for lab-scale testing up to full-scale production systems.



## Industries We Serve



Environmental



Chemicals



Food & Beverage



Pharmaceuticals



Nutraceuticals

## Aftermarket Parts Sales & Service

Buflakov evaporators, distillation, and separation equipment are built for performance and long-lasting durability. When customers need us for aftermarket parts or field service, our team of experts stand ready to ensure your equipment is up and running with the least amount of downtime. Count on our aftermarket team to quickly determine the proper parts needed for your machines, provide technical information and ongoing customer support.

### Field Service:

- Field Service Department always available.
- Instructional operation recommendations.
- Preventative maintenance contracts available.

### Spare Parts:

- Pump Seals
- Pump Impellers
- Pump Motors
- Gaskets & Sealing Devices
- Valve Repair Kits

## Lab Testing

Bufovok provides laboratory feasibility testing with a variety of products for process guarantees. Recirculating, Falling Film, Forced, Thin Film, Rising Film, Plate and Crystallizing Evaporators and Distillation Columns are available for pilot scale testing of your materials at our Research & Test Center in Tonawanda, NY. Additional multistep and multistage process testing can be performed at the CPEG Innovation Center & Testing Lab in Louisville, KY.



## Complete Systems Integration

As a subsidiary of Carrier Process Equipment Group (CPEG), additional thermal processing and dry solids processing equipment is available to supplement and build out your production line. From Bufovok equipment to a wide range of other processing technologies and automation options, our team of experts can help determine the most suitable products for your manufacturing line.

- Tumble Dryers
- Vibratory & Static Fluid Bed Dryers
- Rotary Dryers
- Flash Dryers
- Tornesh Dryers
- Bulk Material Heat/Cool Exchangers
- Vibratory Feeders
- Vibratory & Screw Conveyors
- Vibratory Screeners & Power Sifters
- Rotary Calciners
- Bin & Pile Dischargers
- Loading Spouts
- Mixers & Blenders
- Size Reduction Equipment
- Dry Dust Collectors
- Wet Scrubbers
- Ancillary Components
- And More

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