



Aquafeed.  
**Drying and  
Cooling Solutions.**





## Aquafeed Processing.

### **Ensuring Higher Requirements for Nutrition and Physiology.**

Fish are full of essential nutrients and one of the healthiest foods in the world. As demand for seafood increases, the sustainability of healthy fish populations depends on high quality fish feed. Formulations consider unique physiology, with gentle processing that retains precise water solubility.

The drying step is key to achieving ideal product characteristics like density and stability. With competency deeply rooted in science, Bühler thermal processing technologies specialize in alternating airflow, to rapidly remove surface moisture while maintaining consistency throughout the cross section of each product.

Bühler has an extensive history in thermal processing innovation. Today, engineers continue to design custom processes for the aquafeed industry, and the technology solutions to scale them sustainably.

# Solis aquafeed dryer.

## **Uniform, sanitary and efficient.**



Bühler's Solis conveyor dryer has a unique dual plenum airflow that distributes heat and air uniformly to both sides of the product bed. This maximizes heat transfer to keep operating efficiency high and utility costs low. Independently controlled heating zones maximize processing flexibility and ensure the exact product specifications are met.

The Solis takes full advantage of hygienic design advances at every turn, making the dryer run cleaner, and easier and quicker to clean.

Heavy duty stainless steel construction combines with features that reduce maintenance and cleaning time for a reliable drying process that maximizes production time.





## Cleaner Processing.

Air is the sole vehicle for moisture removal, and restricted airflow means restricted drying. For the most uniform drying throughout the bed, conveyor perforations must be open and free of product. The Solis has been engineered for fast and easy cleaning that keeps production running smoothly, while maintaining a clean drying process. Proven fines management technology provides a highly effective hygienic solution.



## Fines Management.

The Solis product conveyor features a traditional fines drag, while the plenum sections feature the all-new continuous fines removal system. This new plenum system features a continually moving conveyor that carries fines to a collection point where they can either be reintroduced into the processing stream, or discarded. The result is a cleaner drying process that significantly reduces fines accumulation inside the dryer. This system eliminates the conventional plenum screw conveyor, and is much more effective.



## Increased Access.

The Solis reduces downtime for cleaning with many design innovations. The welded frame has minimal horizontal surface areas that prevent build up and minimize the chance for cross-contamination between products. Combined with an increase in the distance between the lower conveyor and the dryer floor, and a support structure option that shortens the distance to the factory floor, cleaning inside and beneath the dryer is quick, easy, and effective .

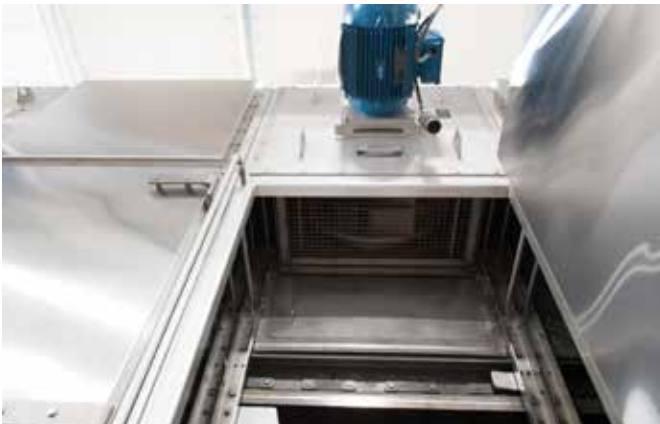
# Solis aquafeed dryer.

## **Uniform, sanitary and efficient.**



### **Easier Routine Maintenance**

Large inner and outer doors make the Solis easy to service, with full access to key machine components. These features not only simplify the cleaning process, they dramatically speed up routine maintenance. The result is reduced downtime.



### **Energy Efficient Operation**

Dual plenum airflow promotes a uniform drying process at the discharge, thereby increasing productivity and product quality. Energy efficient direct drive motors on recirculation fans make optimal use of energy, improving efficiency as well as reducing noise during operation.



### **Consistent Product Feeding.**

The AeroFeed OSP oscillating spout feeder provides even loading of product across the conveyor bed. At the edges, where peaks can form, feeder speed can be increased to eliminate the overlap effect that comes with changing direction. It can then be reduced as the oscillator moves back to the middle of the bed, to keep product depth consistent. An even bed load helps product dry uniformly.



An innovative fines management system, open channel construction, and thoughtful design help keep the Solis clean, shortening cleaning downtime and increasing production time.



# Process expertise. **Not all aquafeed is created equal.**



## **Feed With Unique Physical Properties.**

In order for fish to detect and ingest feed, physical characteristics like pellet density, size, color and texture are important considerations. Unique properties required for each species are achieved by the processing conditions used in manufacturing.

The ideal formulation also delivers a complete diet for fish and crustaceans. This includes gentle processing that retains the exact water solubility needed for fish health and sustainability. The drying step is key to ensuring the final product characteristics.

In the dryer, steaming hot product will rapidly release free surface moisture to the hot air stream. Once the surface has dried, drying activity is limited by the diffusion rate inside the product. This enables fast but gentle nondeforming drying to the required final moisture content, ensuring the required performance.



# Proven thermal processing.

## Essential to the production process.



### Floating feeds.

Floating feed pellets have a loose and porous structure that enables them to remain water stable. Buoyant pellets, with moderate protein and fat content, are appropriate for warm water species such as tilapia, catfish, and eel. They also allow farmers to observe feeding intensity and adjust feed rates as needed.

Ensuring that all pellets are exposed to uniform process conditions inside the dryer helps to create consistent pellet buoyancy. This is critical for minimizing product loss from a portion of the product becoming an undesired sinking product that will not be consumed by fish who only target floating feeds.



### Sinking feeds.

Many species naturally prefer to feed at the bottom of the water column. Dense pellets with high water stability will sink to feed salmonides, sturgeons and sea water fish, such as yellow tail, sea bream, and sea bass.

Approaching this product with a more gentle drying process ensures the pellets will not expand and crack, causing them to sink more slowly than intended, or even float. Uniform, gentle drying is the primary focus for sinking feed.



### Micropellets.

Extruded pellets and micropellets, partially or fully sinking, can be used for the first phases of off-shore farming, for feed efficiency and growth performance of cultured fish species. Very small, accurately cut, floating or sinking micropellets feed shrimp and serve as a starter feed for fish.

Handling the microfeed during the drying process can be a challenge. Product loss is a common and costly problem. Bühler's drying solutions are designed to mitigate product loss and waste, making the most of the production process.

Proven process engineering.  
**Complete aquafeed solutions.**



Bühler offers the most complete end-to-end aquafeed production solution in the industry today. From the raw material handling through grinding, mixing, extrusion, drying and coating, Bühler's innovative solutions provide an unrivaled level of precision, flexibility, and efficiency.





## **Food Science and Technology.**

From standalone solutions to integrated production lines, Bühler's unique know-how in the science of modern feed production is proven out at laboratories and feed innovation centers around the world. Food technologists help customers create products, scale them for production and engineer value-added sources to manage feed waste sustainably.



## **Global Presence, Local Support.**

Twenty-four hour support draws from the expertise of more than 1,200 field engineers around the world. Bühler conducts field evaluations for drying processes and mechanical performance around the world. It also offer parts, retrofits and expansion support regardless of the conveyor dryer make or model.



## **Processing Education and Training.**

Bühler knows the drying step like no other. Special-ized seminars help processors learn the theory of drying and how to apply it, to ensure product yield and profit margins. Cus-tomers frequently discover opportunities to improve processing operations and this results in new bottomline profits.

## **Bühler**

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