



ANDRITZ

Aqua feed technologies
Together, we make a difference

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ANDRITZ

Your partner in the aqua feed production industry



▲ Together, we make a difference

ANDRITZ is one of the world's leading suppliers of technologies, systems, and services relating to advanced industrial equipment for the aqua feed industry.

Your experienced partner

We have been delivering products and plant solutions for the feed industry since the 1930s and have thereby gained extensive knowledge and insight into the increasing demands of the specific feed markets. We put this knowledge into all our efforts to ensure that we have satisfied customers.

Advanced technologies

We are strongly committed to excellent performance and the quality of our products, thus making us a strong partner for our customers. Our focus is on innovation and keeping up with the technological developments. We always strive to provide our customers with the newest technologies that will ensure:

- Better and more efficient production
- Minimizing operation cost
- Maximizing energy efficiency
- Environmental protection considerations

We give our customers the advanced technologies that will ensure them a competitive advantage.

Feed processing technologies

ANDRITZ provides processing machines and equipment – from raw material intake to finished feed bagging. Our pelleting and extrusion plants are designed with special attention to food safety and traceability, ensuring that production operations consider animal health and welfare. In addition, hygiene regulations and requirements are in high focus.

Aqua feed

The fish farming industry is experiencing a considerable growth in all regions of the world, creating an ever increasing demand for high quality fish feed. The key to successful fish farming lies in correctly adapted feed formulas, controlled homogenous content, and exact physical properties.

It is essential to consider the feed characteristics for the specific species of fish. The extruder deals with this key process in the complex production line. We offer unique extrusion programs for the production of all kinds of feed for fish and shell fish. The extrusion program ensures that the feed has the right physical properties – giving it the appropriate sinking attributes according to where in the water the different species of fish access the feed.

We offer

- Process line solutions
- Unit machines
- Technical consultancy
- Engineering services
- Aftermarket service and support



▲ Biomar Chile

The ANDRITZ concept

Today's demanding requirements for cost-effective, quality, and high-performance feed make it obvious that producing quality feed requires a high level of specialized processing technology.

ANDRITZ is a unique company with the ability to manufacture and supply each and every machine in the feed pelleting line. With an in-depth knowledge of each key process, we can supply a compatible and homogeneous solution, from raw material intake to finished feed bulk loading.

Complete plant solutions

Our solutions are simple and effective. We strive to be a one-stop supplier for all pelleting needs. Our packages are tailor-made to suit the specific requirements of our customers, whether it is know-how, engineering, individual process machines, complete processing lines, or spare parts and service availability.

Project management

Easy-to-operate and maintainable plants

and systems with short implementation time and excellent performance set us apart from our competitors. Competence, leading technologies, business units working together worldwide, in addition to staff commitment and dynamics distinguish us from other suppliers. Through outstanding performance, mastery of key process technologies, and engineering capabilities, ANDRITZ has become a globally leading supplier of pelleting equipment and systems.

Experienced project managers and experts from specialized functions ensure that the expected performance will be achieved.

Being the largest supplier worldwide of equipment to the feed industry with more than a century of experience, five manufacturing facilities, and a global network



▲ The ANDRITZ concept

of sales and service companies, plus a supplementary worldwide distribution network, we are confident in claiming that ANDRITZ is able to supply the optimum technology solution for any possible need in animal feed plants.

Supplier of key machinery and complete process plant solutions

Bulk intake system with aspiration filter

Bulk intake hopper and conveying system with filter, type DFE.

Ingredient silos and hopper scales

Hopper scales for weighing of individual ingredients in formula mixtures.

Live bin

For pre-mixing of feed ingredients prior to grinding to ensure optimum hammer mill performance and homogeneous particle size distribution.

Multimill hammer mill

3000/3600 rpm hammer mill with small hammer-to-screen clearance. Screen perforations as small as 0.75 mm. Capacity: 0.5-25 tph.

Optimill hammer mill

1500/1800 rpm grinder in a variety of sizes for low-fat raw ingredients and high capacities. Capacity: 0.5-60 tph.

Aspiration filters

Fully automatic, continuously operating bag filters cleaned by compressed air. A variety of filters support any need for process air filtration throughout the entire extrusion plant.

Premix and micro-ingredients weighing unit

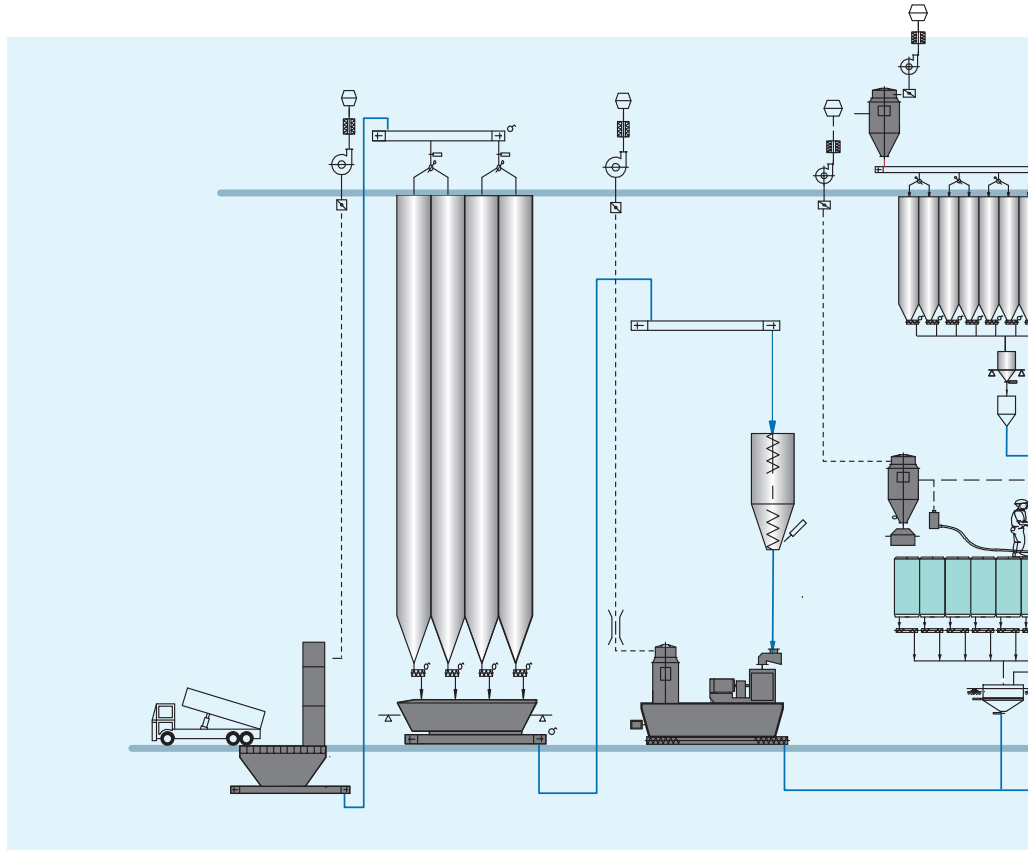
For weighing/metering of premix and micro-ingredients in formula mixtures.

Paddle mixer

Paddle mixer for dry mixing if large amounts of liquid are to be added. Capacity: 0.5-40 tph. Batches: 0.1-6 t.

Ribbon mixer

Ribbon mixer for standard dry-mixing extrusion operations. Capacity: 1.5-30 tph. Batches: 1-4 t.



▲ Bulk intake system



▲ Ingredients silos



▲ Hammer mill



▲ Aspiration filters



▲ Weighing unit

Conditioner

CM series for pre-conditioning with addition of liquids and steam, providing optimum mixing and retention time. Dual conditioning for perfect blending with liquids and extended conditioning time, as well as availability of CRT first-in-first-out solutions.

feed quality and unique process flexibility. Capacity: 1.5-20 tph.

Extruder EX0618-0621, EX1018-1021, and EX1250

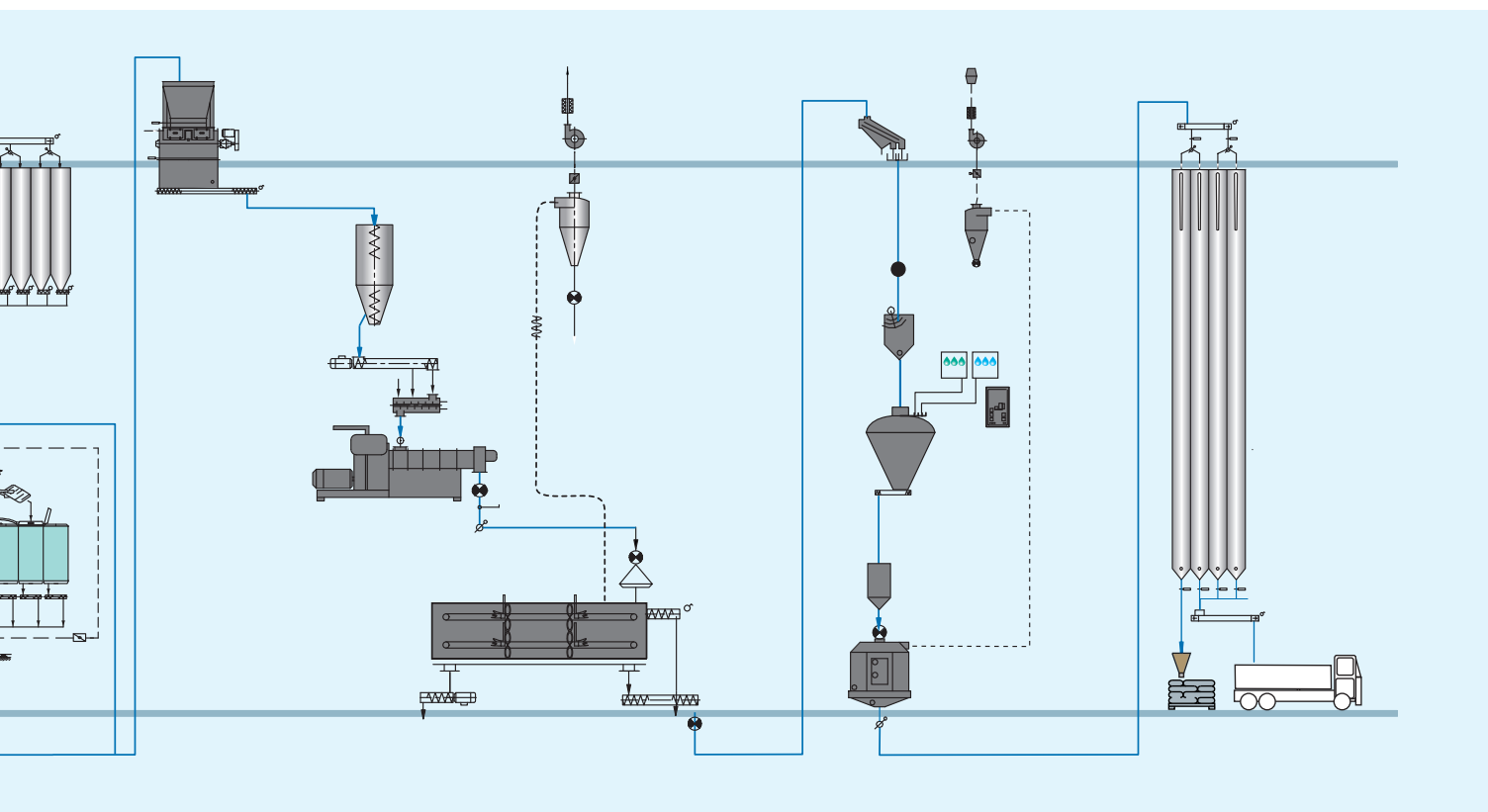
High-performance extruders, providing low operating costs combined with exceptional

ECS and Flextex

Expansion Control System for in-line controllability of extruded feed expansion/sinkability. Flextex for easy adjustment of extrusion SME during operation.

Dryer

Combi-zone dryer for improvement of fish feed and pet food, covering a variety of production capacities (up to 30 tph.)



weighing and mixing Conditioning, extrusion, and drying Coating and cooling Finished feed silo and packing



▲ OptiMix ▲ Conditioner ▲ Extruder ▲ Dryer ▲ Coater ▲ Cooler ▲ Process automation

and product sizes (0.8-40 mm), including unique energy efficiency and minimum spreading of product moisture.

Coater

Vacuum coater VAC in simple design for unique results, e.g. adding large amounts of liquids, no product damage, and production of special products. Capacity: 0.5-25 tph and up to 35% added oil/fat.

Cooler

Vertical or horizontal coolers on the basis

of customer applications and preferences. Vertical cooler, model PCF. Capacity: 0.5-20 tph.

Process automation

Automation systems are available as basic control systems or as fully automatic systems for control of each process machine or complete process lines. The system ensures cost-effective processing and consistent feed quality. The plant design with integrated automation solutions provides full traceability of ingredients and process parameters.

Efficient extrusion technology by ANDRITZ

Industrially produced feed is undergoing a continuous quality improvement process to keep pace with the needs of the aquaculture industry. ANDRITZ single-screw extruders represent state-of-the-art technology, ensuring high-quality feed at minimum operating costs.

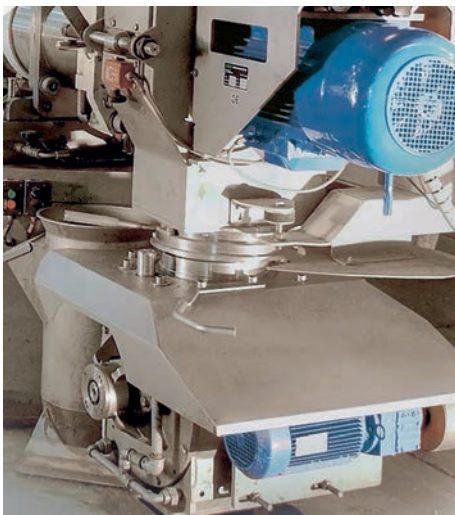
ANDRITZ offers close co-operation based on:

- State-of-the-art technologies
- Complete product range to fulfil every need for process lines
- High performance
- Superior product quality
- PC-based automation and process monitoring

Customized solutions

Products from ANDRITZ ensure high process consistency and flexibility. With multiple design features and modular systems as a starting point, our engineers are always capable of designing a solution to fulfill all demands for high production capacity and quality.

Expansion control system, ECS.
The patented Expansion Control system ECS is a reliable system for accurate control of expansion for any extruded product.



Formula management

After a formula has been entered at the advanced process control system, the complete process – from intake of ingredients to finished product – begins. The operator can follow the entire process on screen. The continuous data logging system ensures full process and product traceability, and the automation equipment includes preventive maintenance systems.

Batch coater, for extreme product quality. Designed especially for aqua feed.





▲ Service and support

Aftermarket

After-sales service and support

Our excellent aftermarket service and support is what sets us apart from our competitors. Our cooperation with our customers does not end with the sale – or the machine installation. The good customer relationship is extended through important after-sales service and support.

Our services

Our highly skilled and motivated employees stand ready to help you with:

- After-sales services, support, and follow-ups
- Spare and wear parts, maintenance, and repairs
- Process optimization
- Training of plant operators

Field services

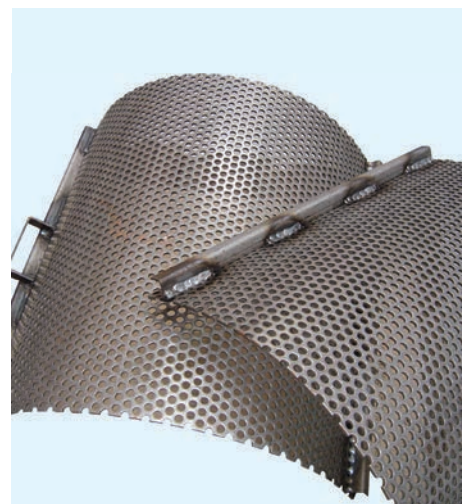
We offer our customers excellent field services, where our service technicians come to you and your plant for assistance. The depth and experience of our field service

specialists is unmatched – backed by the full knowledge and technical support that only the equipment manufacturer can provide.

Benefits

There are several benefits to be gained from continuous upgrades, optimizations, and services on your equipment:

- Maximum production
- Process knowledge and experience
- Reliability and cost efficiency
- Reduced life cycle costs
- Short and effective shutdowns
- Improved energy efficiency



Where to find us

Global supplier – local presence

ANDRITZ is truly a global organization – but also with local presence. We are represented all over the world. The global market for feed technologies is served from five main locations:

- Esbjerg, Denmark
- Sanshui, Guangdong Province, China
- Geldrop, Netherlands
- Muncy, PA, USA
- Humenné, Slovakia

In addition, we operate from several strategic regional sales, engineering, and service locations in China, Vietnam, India, Australia, Mexico, Venezuela, Brazil, Chile, France, the UK, and Germany – and are also represented locally by agents and distributors in many other markets.



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