



**ALMEX**

*extrusion techniques*



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Almex specialises in single screw extrusion equipment, from the extrusion unit to complete installations. We are a family owned, independent company and are part of the triott group.

The extruders and Contivar Expanders are in use worldwide at fishfeed-, oil extraction-, petfood-, animalfeed plants, the foodindustry and the processing and chemical industries.

In the early 1970's, Almex started with the repair and installation of extruders.

For use in Europe these units needed much modifications, so we decided to design and built a complete range of extruders at our modern manufacturing facility in the Netherlands.

The same quality extruder parts are used to manufacture Contivar Expanders for the feed industry, as a popular machine to improve feed quality.

Almex extruders and expanders for high quality feed.

# Selection of processes

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The choice of extrusion technology is determined by the ingredients, formulation and the final product requirements. Our extruders are suitable for a wide range of high quality products for pet food, compound feed, aquatic feed and other applications.



## Aquatic feeds

The global fish consumption has more than doubled over the last 50 years and it is still growing. This immense growth has many effects for the aquatic feed industry. The demand for high quality fish has as result that the animals have to be provided with high quality feed. Physical characteristics of aquatic feeds include issues such as pellet size and shape; pellet density allowing us to produce floating, slow sinking and sinking feeds; water stability and pellet durability.





## Compound feed

Several scientific studies and proven results at our clients show that the extruder and expander technology is an absolute addition to a modern feed mill. This technology fulfill the wide range of needs at clients to supply different feedstuffs for the different life stages of animals. Besides traditional meal and pellets, farmers ask for crumbled feed, expanded pelleted feeds and mono-components that have been treated with expander technology. In the fields of nutritional value, digestibility and feed utilization interesting results have been achieved with extruder and expander technology in feed for high yielding dairy cattle, broiler and pigfeed.



## Pet food

Owners of pets require the best food for their pets. Pets can be seen as family and deserve high quality and good looking food. To meet these requirements extrusion is the perfect tool. In the production of pet food, we focus on an optimal formulation of nutritional diet for pets. A wide range of pet food products can be produced through our extrusion technology. With years of experience, we take great care in developing our extrusion range to meet and exceed the growing global demand of high quality pet food.



# Products

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At our modern and well-equipped manufacturing facility in Zutphen (The Netherlands), Almex designs and produces a comprehensive range of process equipment .



Almex is a leading supplier of extrusion and expanding equipment since the early 1970's. Almex extruders and expanders are in use worldwide at fishfeed-, petfood-, animalfeed, oil extraction- plants, the foodindustry and the processing and chemical industries.

In addition to our extruders and expanders, we supply up- and downstream equipment in order to set up complete processing lines.

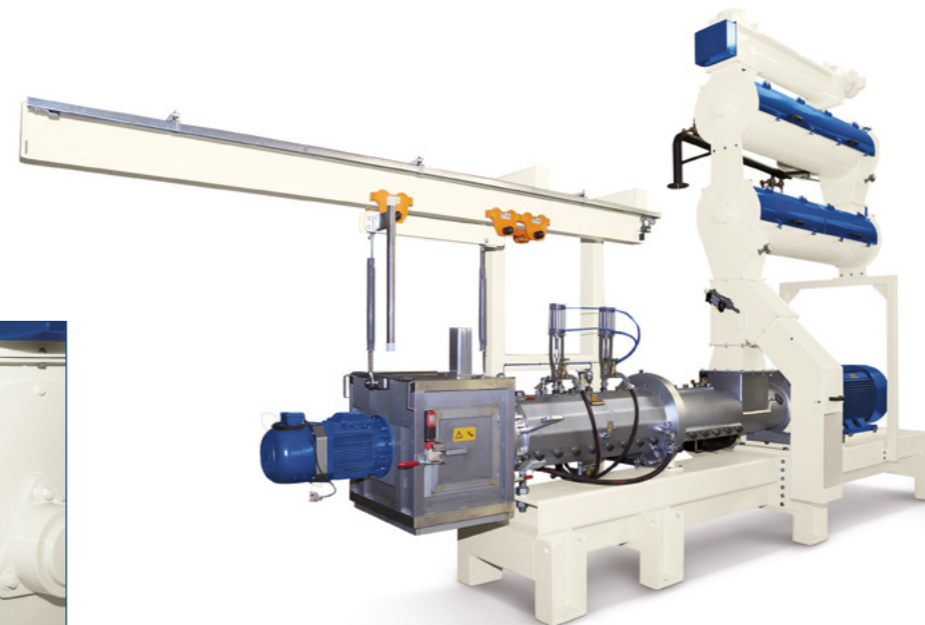
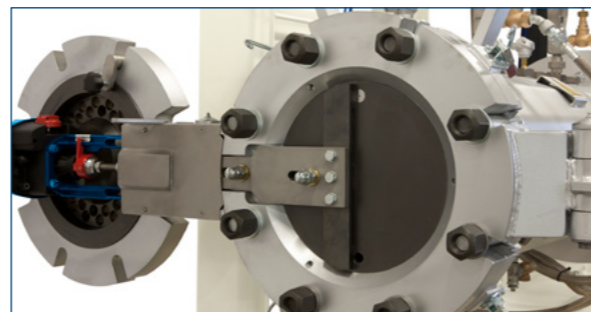
The robust, basically simple design of the Almex equipment guarantees years of trouble free service

# Extrusion Systems

- » Pet Food extrusion
- » (floating) Aquafeed extrusion
- » Animal Feed extrusion
- » Oil seed extraction
- » Cereal processing extrusion
- » Compacting
- » Pre-conditioning prior to other processes
- » And various customized applications

## Why extrude?

- » To minimise the effect of anti-nutritional factors (ANF)
- » To fulfill specific process requirements
- » To maximise nutritional value of feed



## General

Almex offers a range of extruders which are used for a wide range of single screw extrusion solutions for different applications.

Extrusion in the manufacturing of animal feed is a thermal process where starchy and protein based ingredients will be kneaded and cooked under specific moisture conditions.

The sturdy construction and basically simple design guarantee years of trouble free and economical production.

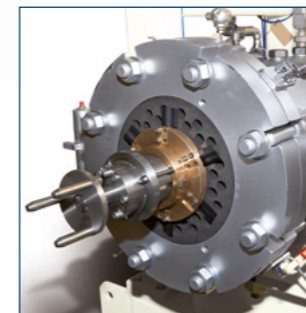
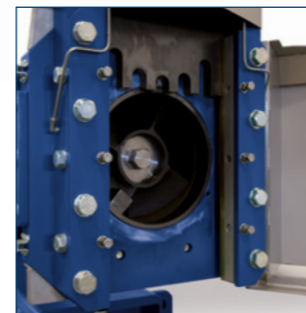
Type	Drive (main motor) (Kw)	Drive cutter (Kw)	Barrel diameter (mm)	Capacity (ton/hour)
AL150	45 - 75	1,5	150	0,5 - 1,2
AL200	75 - 132	2,2	200	1,5 - 3,0
AL300	132 - 315	7,5	300	2,5 - 8,0
AL350	315 - 400	11	350	4,0 - 9,0

# Expanders

- Eliminate heat sensitive bacteria (salmonella)
- Addition of higher fats and liquids inclusions
- Gelatinization of available starch
- Improved end product durability and strength
- Increased output of pellet mill
- Reduces wear costs of pellet mill
- Improved water stability for fish feed
- Enhanced oil extraction
- Easy cleaning
- Less downtime for maintenance
- Low cost of wear parts



Type	Main motor (kW)	Motor slide adjustment (Motorpower kW)	Expander barrel diameter (mm)	Capacity (ton/hour)
AL150	45-75	0.55	150	1-6
AL200	75-132	0.55	200	5-10
AL300	132-315	0.75	300	10-30
AL350	315-400	0.75	350	30-45



## General

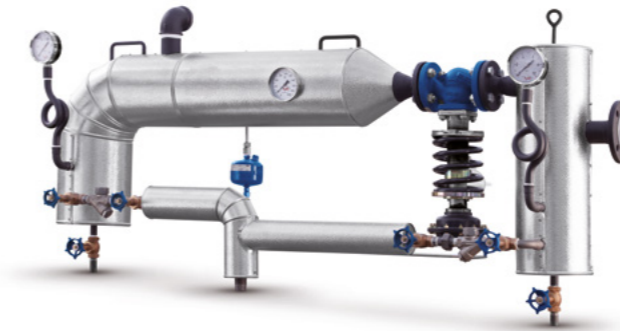
Almex offers a wide range of expanders which improve the quality of finished feed as well as more efficient production process flow. The Almex expanders have a reliable and sturdy design and are equipped with a unique Active Disc system (AD-system) in order to control exact product output and assure the quality of the product.

The slide of the Active Disc enables introduction of shear forces and frictional heat into the product. This enables the expander to eliminate heat sensitive bacteria (salmonella). Together with feed mill operators we developed a design which results in optimum performance and a easy access to the system for maintenance and exchange of wear part. The expander can be used for the production of expanded crumbs in combination with a crumbler. Or in a feedline with or without a pellet mill or with a by-pass in the production line.

# Ancillary Equipment

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In addition to our expanders and extruders, we also manufacture the most relevant ancillary equipment. This allows us to supply complete pelleting lines including automation.



## Steamsets

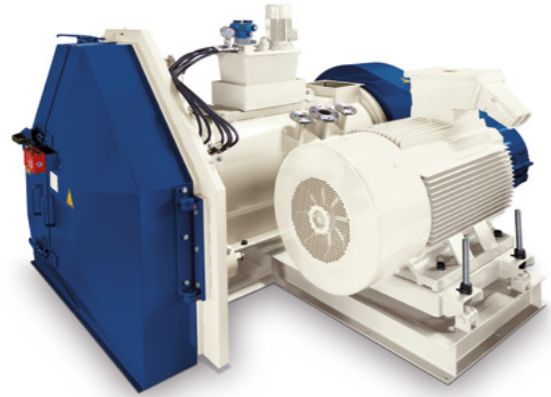
Almex supplies steam lines and steam injection systems on mixers, presses, expanders and extruders. Characteristic of the injection systems is the volume-increasing drainage vessel after the reducing unit in which a steam flash, and thus superheated dry steam, is generated.

## Crushers

The Almex crushers are a standard feature after the expander. The crusher with stainless steel housing, single shaft and stationary beaters reduce the size of the cake coming from the expander and ensure a stable and smooth throughput towards the pellet mill.







## BOA Compactor

The BOA Compactor has a patented pre-compacting technology, which is a unique alternative for double pelleting. In the double-walled mixing chamber steam and liquids are dosed to the feed. The mixture is compacted by two friction rings which are hydraulic controlled.



## Conditioners

The stainless steel conditioner has wide sized paddles whose height and angle can be adjusted to provide homogeneous mixing and a hygienic process.

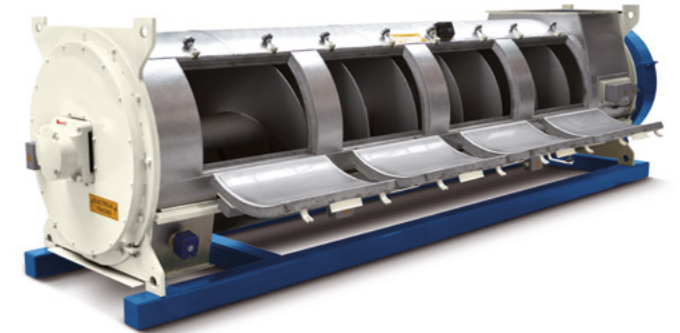


## Conditioners (TCS)

A closed, insulated and heated mixing chamber in which a mixture is heated with dry steam until the required temperature is reached. This is achieved by a shaft which can rotate in two directions combined with a controlled flap in the outlet. Two PT100 temperature sensors register the preset temperature after which the electro-pneumatically controlled flap of the outlet is opened. We 100% guarantee that the mixture undergoes the desired thermal treatment in order to combat bacteria, such as salmonella.

## Retention time barrel (RTB)

The heated RTB is used for the thermal treatment of animal feed (flour) in order to eliminate bacteria such as salmonella. The product remains, during a preset length of time, in this heated and insulated time barrel. Guaranteed first-in/first-out of the mixture.





## The Triott Group

Almex is part of the Triott group. Triott is a holding with seven independent operating companies. Each company specializes in one or more aspects that play a role in the design of and the implementation of machinery, process equipment and installations for the compound feed industry and other cereal related processes. The unique properties of each company results in maximum synergy that has benefits at both machine level and for turn-key projects.

[www.triott.com](http://www.triott.com)

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