

## Wear & spare parts

Lalesse Extrusion stands for high quality extrusion equipment therefore also quality wear parts. Key word here is efficiency. When using genuine Lalesse made wear parts, sleeves, screws, die plates etc. this will allow you to reach higher efficiency and reduce maximal hidden costs. A timely change of front sleeve and screw will contribute to a constant high capacity of the extruder. This results in high efficiencies: that is your benefit!



## EXTRUSION PROCESSING LINES

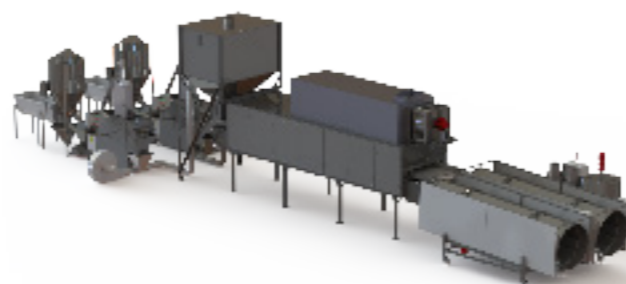
### Budget startup line

Full line set up, based on 90e extruder +  
IR drum dryer and slurry maker  
Capacity starts at 100 kg/hr  
Growth scenario: add 2nd extruder: 200 kg/hr!



### Mass production line: 1 ton/hr

Full line set up based on 2 x 200d extruder  
plus split belt dryer and 2 pcs coating drum +  
double executed slurry maker  
One line can make 2 different snacks!



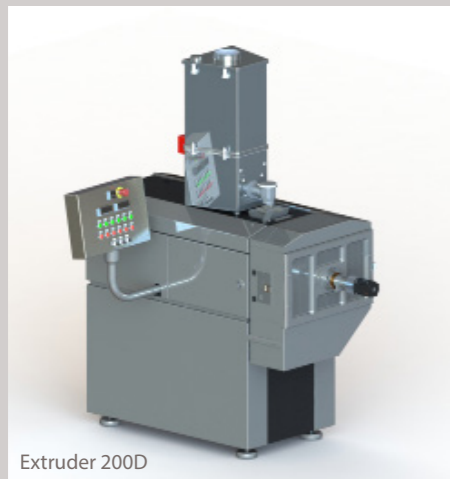
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**KUIPERS**  
FOOD PROCESSING MACHINERY

- Premium quality, EU made
- Reliable partner
- Over fifty years of experience
- Customers in more than 60 countries worldwide
- Smart engineering and simple designs
- Fastest changeover in the industry



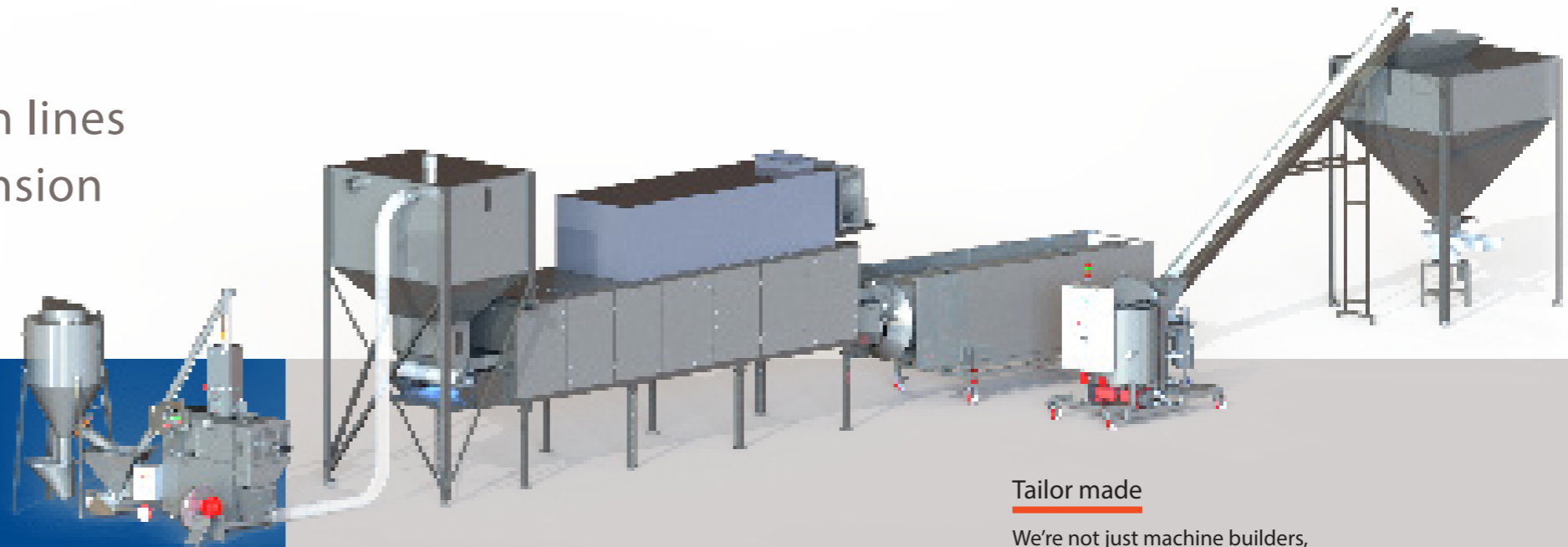
Extruder 90D



Extruder 200D

## Lalesse Extrusion

### Complete extrusion lines for the direct expansion process



Corn curls, balls, sticks, rings, arrows, bears, elephants, dinosaurs... snacks and cereals come in many different shapes, sizes and flavours these days. The technology behind this is called direct extrusion. That's a process where grits of corn and rice are forced through a die plate, under high pressure, into the final shape. Finally, flavourings are then added to produce a tasty snack.

Lalesse Extrusion is the Dutch supplier of extrusion equipment for the direct extrusion process. Lalesse only builds single screw, short screw and high shear extruders. We are in this crispy business for more than five decades now. Since the 1960's we provide both extruders and complete extrusion lines to customers around the world. Our equipment is used to produce a wide range of snacks varying in shape and size. Almost everything is possible.

#### Crispy but complex business

Snack manufacturing is not only a crispy but also a very complex business. Lalesse covers extrusion process equipment for products such as snack food, breakfast cereal and half products. Extrusion line expertise such as mixer moisteners, extruders, screw conveyors, transport equipment, dryers, flavour equipment, coating drums and final product silos have been made available to create a complete Lalesse extrusion line.

#### Extrusion process

Unique to Lalesse: the extrusion process is water-cooled

In the mixer the raw materials are mixed and brought to the desired moisture level. The mix is then transferred to the extruder hopper by means of a screw conveyor; a level indicator ensures that the extruder does not run empty. In the extruder the raw materials are pressed through a die plate using high pressure build-up by the screw and high temperature created by shear to expand. The face cutters set the desired snack length and dimensions. Unique to Lalesse, the extrusion process is water-cooled.

After extrusion the snacks are dried for extra crispness and for shelf-life. They are then coated with slurry; a mixture of oil and flavour powder. Coating takes place in the rotating coating drum and the slurry is made on-line (continuously) in the Lalesse flavour equipment. Now the snacks are ready to be packed; this is best done immediately. It is recommended that a buffer silo is installed between processing line and packaging equipment, mainly to overcome the difference in operational speed.

#### Tailor made

We're not just machine builders, Lalesse is more!

All equipment is 'made to order'. This means that modifications, adjustments, options, etc. are no problem and, within limits, are rather simple to execute. Lalesse adopted the custom-made principle early on and that is why we have such wide experience in food extrusion equipment. Our mechanical engineers have created tailor-made extrusion lines for many customers around the globe.

#### Process Equipment

The quality of extruded snacks depends on the entire production line and not only on one or more individual modules. The main extrusion line equipment comprises:

- Mixer
- Screw conveyor
- Single-screw extruder(s)
- Distance cutters/printers
- (Pneumatic) conveyor system
- Dryers (rotating or belt types)
- Coating drums
- Flavouring equipment (slurry maker)
- Peripheral equipment



Lalesse Extrusion provides premium quality equipment for the snacks industry

