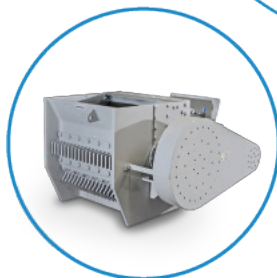
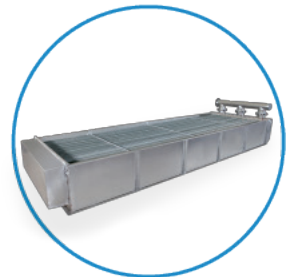


RENDERING

Contribution to feed production And Environment

All waste that can not be consumed by humans as food (blood, feathers, fat, etc.) **in order to reduce and prevent process waste, it can be recycled by converting it into a feed additive in the Rendering plant.** In this way, solid waste is recycled, while the fragrant steam generated in rendering facilities is washed and made odorless. **The Rendering plant benefits both the manufacturer and the environment.**



Rendering

 **YEMMAK**

High-Quality Rendering Systems

Yemmak focuses on creating high-quality systems at every step of the rendering process. This focus enables us to offer our customers complete equipment and turnkey solutions that ensure high efficiency and sustainability.

We have equipment and solutions specifically designed for various waste products such as poultry by-products, red meat byproducts, feathers, and blood.

Our equipment efficiently processes poultry by-products from chickens and turkeys, red meat by-products from pigs and cattle, and other byproducts like feathers and blood.

Benefits of Rendering

Rendering is the process of recycling animal by-products and offers various benefits:

Food Recovery:

Rendering facilitates food recovery by recycling animal by-products. This process enables the reuse of waste products and helps prevent waste.

High-Quality Products:

Animal by-products are transformed into high-quality end products through rendering. These products are important sources of nutrients for the feed industry and other industries.

Economic Value:

Rendering increases the economic value of recovered resources. This can create additional revenue streams for businesses and reduce waste management costs.

Reduction of Greenhouse Gases:

Rendering prevents the decomposition of animal by-products, which helps reduce the emission of greenhouse gases. This contributes to reducing environmental impact and promoting sustainable waste management.



These benefits of rendering play a significant role in waste management and sustainability efforts.

Poultry Rendering



Yemmak's rendering solutions for the poultry industry transform by-products such as carcasses, bones, offal, feathers, fat, and blood that are not suitable for human consumption into proteins, minerals, and fats. This process allows the raw materials, whether processed individually or together, to be converted into highly valuable materials in demand in the market, such as meat, bones, internal organs, feathers, and blood.

Yemmak's poultry processing equipment is used in a wide range of applications, from industrial kitchens to meat processing plants and end-users. The processed products are suitable for use in the pet food sector and the feed industry. Additionally, these processing solutions enhance sustainability in waste management and minimize environmental impact.

Each project is customized to meet the specific requirements of our clients.

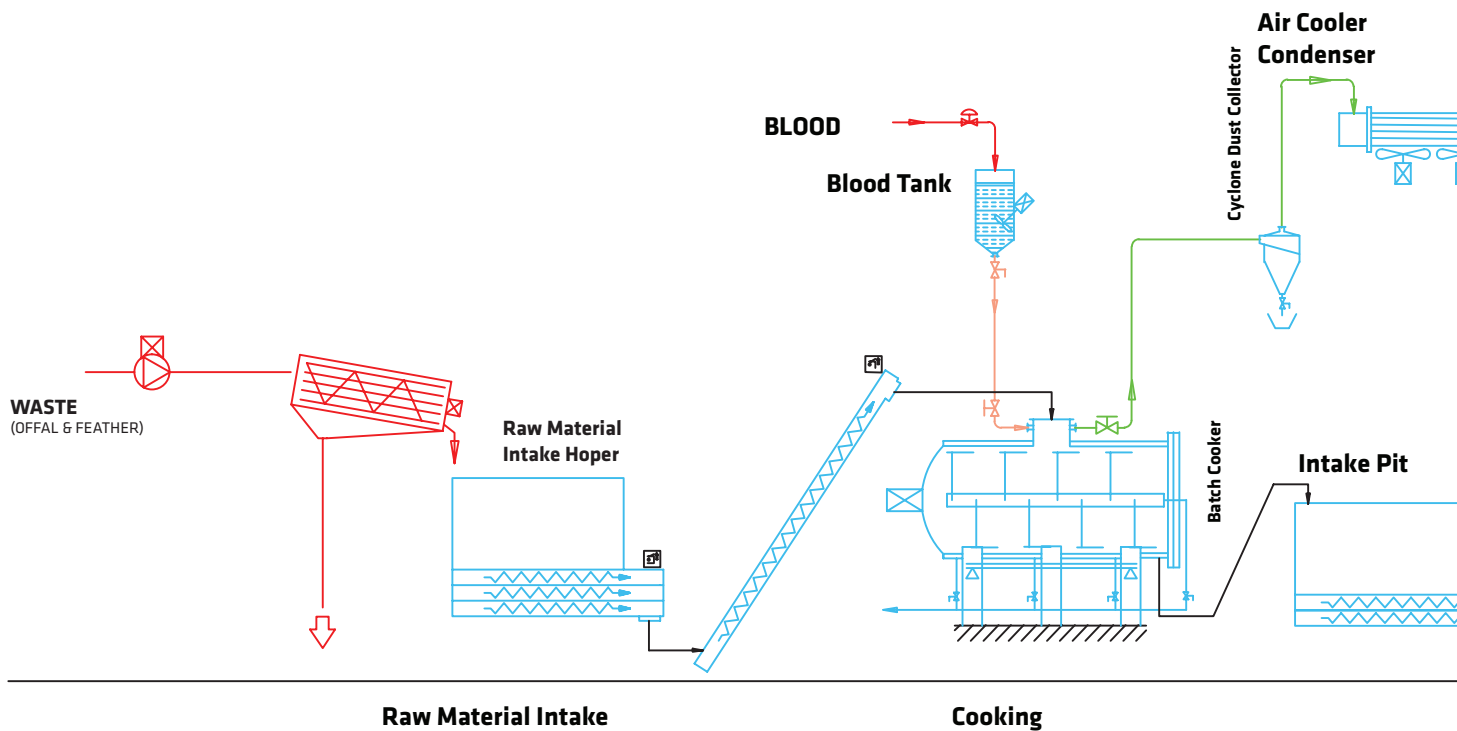
Red Meat Rendering

Yemmak's rendering systems for the red meat industry enable the processing of red meat byproducts that are not suitable for human consumption and convert them into proteins, minerals, and fats. This process involves byproducts derived from animals such as cattle, sheep, horses, pigs, buffalo, camels, and goats. These by-products typically include soft tissue, bones, horns, hooves, hair/feathers, blood, and farm waste.

Yemmak's red meat rendering solutions transform these by-products into high-quality nutrients. The processed products are suitable for use in the pet food sector and the feed industry. At Yemmak, we design our red meat processing equipment to meet the specific needs of our clients. Our expert engineers handle each project with care and use the latest technology to enhance efficiency and quality.



Process Flow



Raw Material Intake :

Wastes like internal organs, offal, carcasses, bone etc. which will be processed in the rendering facility are collected in this bunker first.

Depending on the content or the facility's capacity, the bunker can be designed for special needs. Screw conveyors can be single, double or triple depending on the content.

Cooking :

The cooker is of great importance for the dry processing process to give an efficient and profitable result.

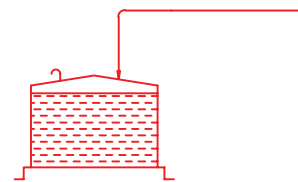
The rendering cooker cauldron is filled to the brim. A batch of goods is heated with the steam fed directly to the jacket of the rendering boiler.

Sterilized, hydrolyzed, cooking is done under constant pressure and temperature until the desired conditions.

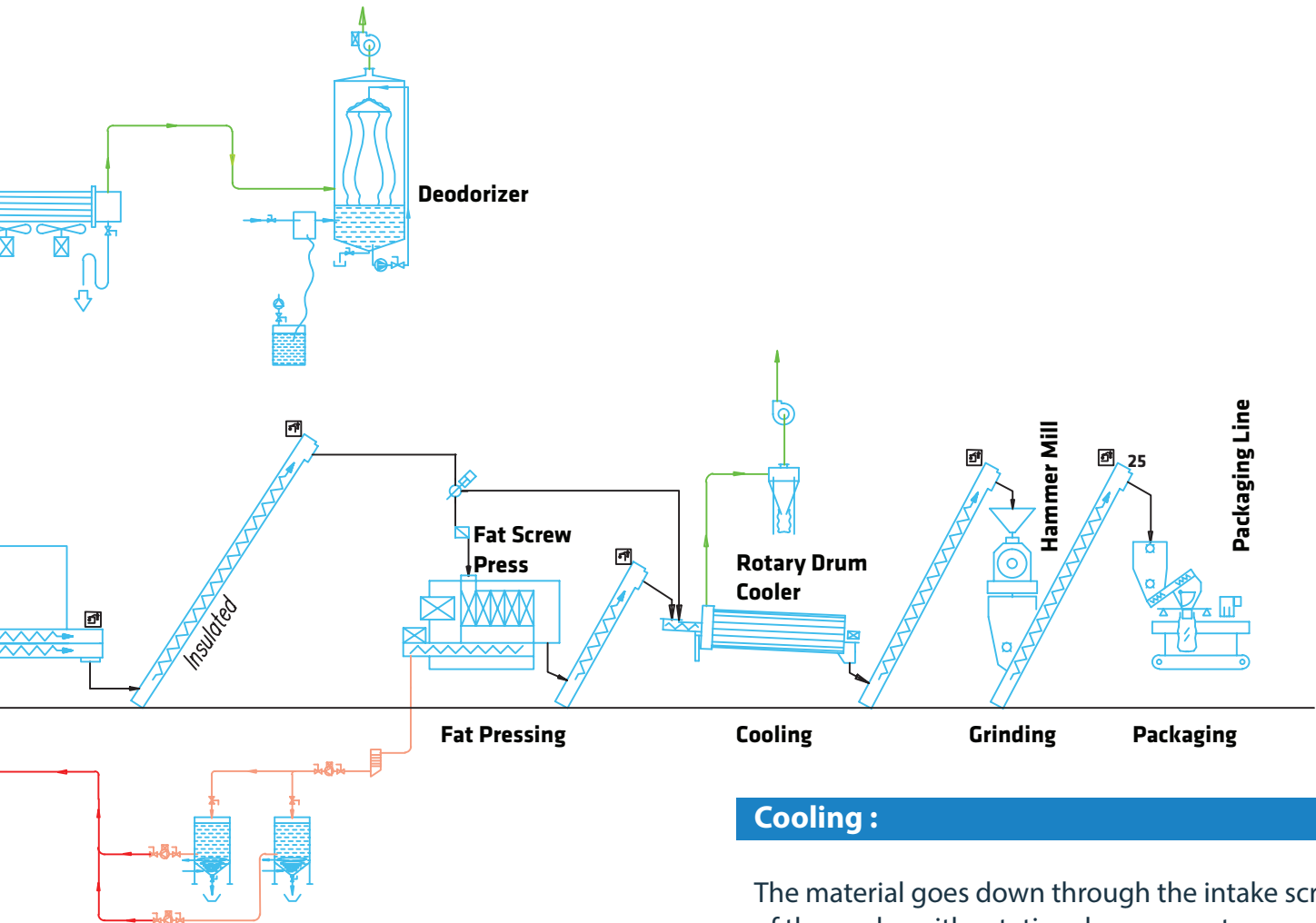
It is cooked until the humidity of the product is reduced to under 10%.

Vapor & Odor Treatment :

Deodorizer system processes noncondensable gases by extracting them with a fan. This system consists of chemical deodorizers and a minimum of one tower. The system removes unpleasant odors by treating the particles contained in the gas with chemicals before they are released to the atmosphere. The deodorizer system oxidizes the non-condensable gases in order to completely get rid of unwanted odors. NaClO and H₂O are the waste products of this process



Vapor & Odor Treatment



Fat Pressing :

While the screw group in the oil press advances the product, the hydraulic plug puts pressure on the product and the resulting oil is filtered through the grids and into the bottom vessel.

In the construction of the fat press, the press spiral, its wedges and blades are passed through a special heat treatment to ensure that the desired oil ratio remains in the pulp and the machine operates with high efficiency.

Grinding :

The entire raw materials are ground in the grinding hammer mills to achieve the optimum size for nutrition and quality.

Cooling :

The material goes down through the intake screw of the cooler with rotational movement.

Flaps also help material advance through the body of the cooler. The material is cooled by air flowing opposite to the air is cleaned of particles by the cyclone and fan.

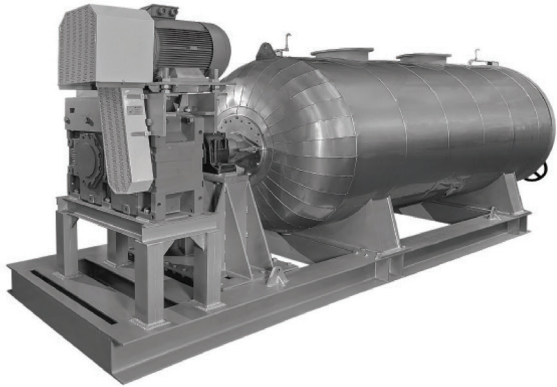
Packaging :

The operator places a bag to the filler to start the machine, and then the machine precisely fills the set amount of product into the bag in three stages. This process goes on continuously. A sewing band is an optional accessory. The bagging scale is electronic and microprocessor-controlled.

Packaging machines provide reports about the quantity and weight of the filled bags.

They can also be connected to an electronic device such as a PLC or a computer.

Main Machines in the Process



■ Batch Cooker

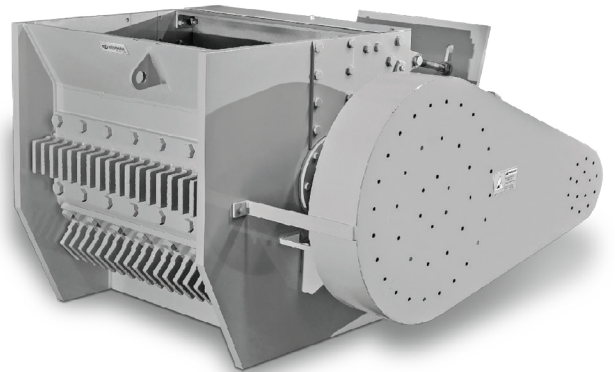
Batch Cooker consists of specifically designed rotor and paddles. Boiler gets a smooth start up with a counter measure against heavy loads from a reductor with a two way rotating engine and 'V' shaped pulley which is tied to its hydraulic coupling output. Batch Cooker is used for cooking these animal by-products:

- Meat, offal and bone mixtures
- Poultry animals' feathers
- Internal organs
- Blood

■ Crusher

Yemmak Crushers are designed specifically for the rendering process and they can prepare animals' bones, offal, skeletons and the internal organs for the other stages of the process by effectively and homogenously shredding them.

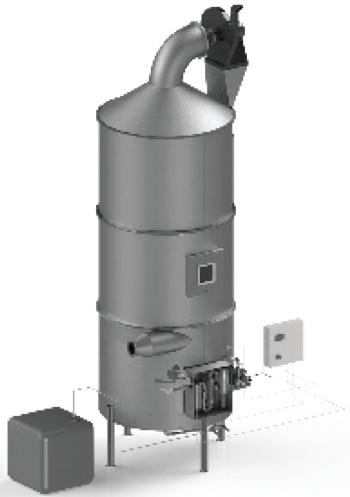
Exchangeable shredding grills are installed in couple to achieve a more homogenous shredding experience. Also if these shredding grills get deformed in prolonged hours of working, spare parts aren't needed, as their direction can be reversed. Thus, the grills have four times the vlongevity.



■ Air Cooled Condenser

Yemmak Air Condenser is engineered to condense the steam which is generated in the boiler during the cooking process. Electrical engine propelled axial flow fans, blow the ambient air to the assorted pipe bundle. These stainless steel pipes also have stainless steel fins, ensuring the enlargement of the heat transfer surface area.

Other surfaces that are in contact with the steam have been hot-dip galvanized and made of stainless steel. Dual and triple fan setups are available.



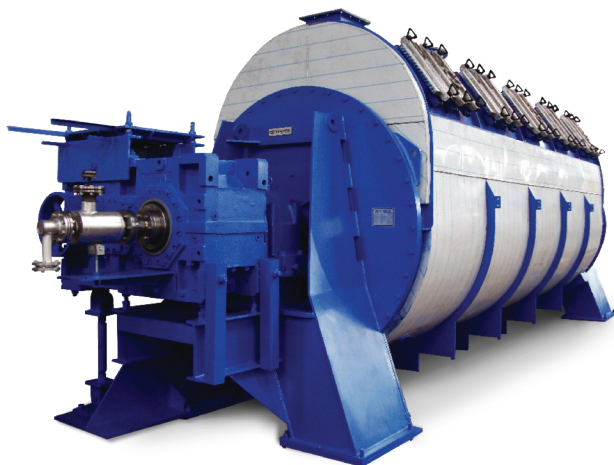
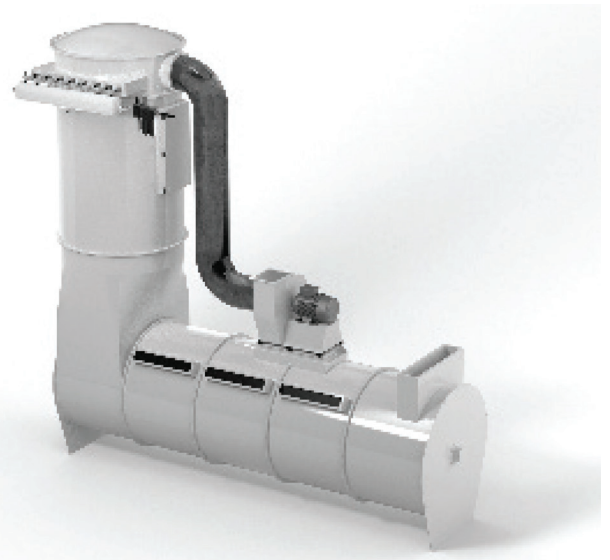
■ Deodorizer

Deodorizer is used for deodorizing odoriferous steam from the cooking boiler with water and certain chemicals at the rendering units. It's made of 304 quality stainless materials. Its body consists of three parts. Bottom section houses a chemical-water composition. This solution is pumped to the top section. On its way back to bottom, it runs into the odoriferous steam. The steam goes into a chemical reaction with the water-chemical solution and loses its smell. The fins in the machine retain the liquid particles in the air.

■ Rendering Cooler

Rendering cooler is designed for the cooling of product after heat treatment. It works with the principal of contacting the product with the cooling air. They are cooled by applying reverse air flow with a filter and fan in the hot cooler. Particles in the cooling air is caught by jet filter system which is installed at the top of the cooler. Rendering cooler is a continuously working machine.

The strong structure of the flaking roller mill ensures minimum maintenance cost with maximum performance. Rendering cooler is equipped with sight glasses including cleaning brushes and openings with counterflanges for air intake and outlet. The airflow is regulated by a hand-set damper. A product side outlet is installed at the air intake end. The rotor consists of a rotor pipe with agitating arms and paddles to lift the product up into the cold air stream.



■ Disc Dryer

Yemmak disc dryer can cook and dry all kinds of animal waste in an atmosphere controlled environment with multipoint thermal control and it has support for automation.

With Yemmak disc dryers, you don't need internal/wall heating as the machine provides a surface with steamheated stainless steel discs.

