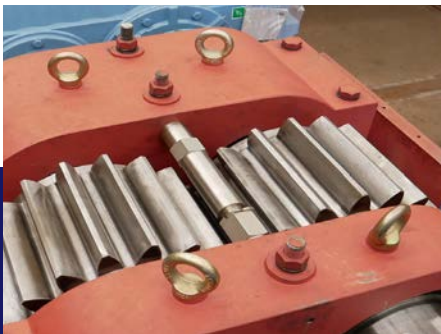


Chicken rendering plants from A & S Thai Works



www.asthaiworks.com





Pre-cooker

A & S Thai Works, a leading supplier of machinery to the fish meal, chicken and meat and bone rendering industries

A & S Thai Works Co., Ltd. (ASTW) is a leading designer and manufacturer of fishmeal and rendering plants in the Asia Pacific region. Since 1986, we have manufactured, delivered, installed and commissioned more than 260 complete plants. As of 2018, nearly all are still running reliably.

Installation included

ASTW has gained extensive experience from delivering all plants as turnkey installations, sometimes under the most challenging conditions. Of 210 employees, 40 technicians are trained to perform installations and service.

Low temperature, continuous process, high value

ASTW chicken rendering plants includes a continuous disc drier for maximum reliability and flexibility. The production process is very reliable and ensures high quality end products, chicken oil and meal.

Highest quality components

ASTW uses only branded components from well known suppliers with a proven track record. For our customers, that means a long product life and that spare parts are always available, either from us or directly from the original supplier.

We only use high quality steel with valid certificates, and for most parts we use thicker plates and more generous dimensions than our competitors, to secure high reliability and a long, profitable product life.



ASTW offers chicken rendering plants from 2 to more than 15 tons per hour, in addition to feather and blood meal plants.



Low temperature chicken rendering (LTR)

ASTW's chicken rendering plants are built with three main features in mind:

- **Low temperature rendering that gives the best quality meal and chicken oil**
- **Reliability thanks to strong and sturdy machinery with a minimum need for maintenance and a long lifetime**
- **Optimum profitability**

The LTR is a low temperature continuous rendering process where the material goes through several stages:

- **Pre-hogging of chicken carcasses**
- **Metal detection control of all raw material**
- **Cooking in disc type pre-heater**
- **Pressing in twin screw press**



- **Separation of liquids, stick water and chicken oil, and solids in decanter**
- **Separator polisher to clarify the chicken oil**
- **Evaporation of stick water in waste heat evaporator to save energy during drying**
- **Drying of solids to chicken meal in a disc dryer**
- **Cooling of meal by air flow**
- **Milling in hammer mill and screening of meal in shaker screen**
- **Bagging, manual or semi automatic**

The disc pre-heater, twin screw press and disc dryer are slow rotating machines with very little wear, low maintenance and a life time of up to 15 years before major service.

Options:

For even higher quality meal ASTW can supply vacuum driers that dry at low temperatures giving a meal with higher digestibility.

We can also supply continuous cookers/sterilisers for the EU market that cook the wet raw material under a preset pressure for a preset number of minutes.

For semi food grade and pet food grade, more stainless steel components and CIP systems for semi-automated cleaning can be supplied.

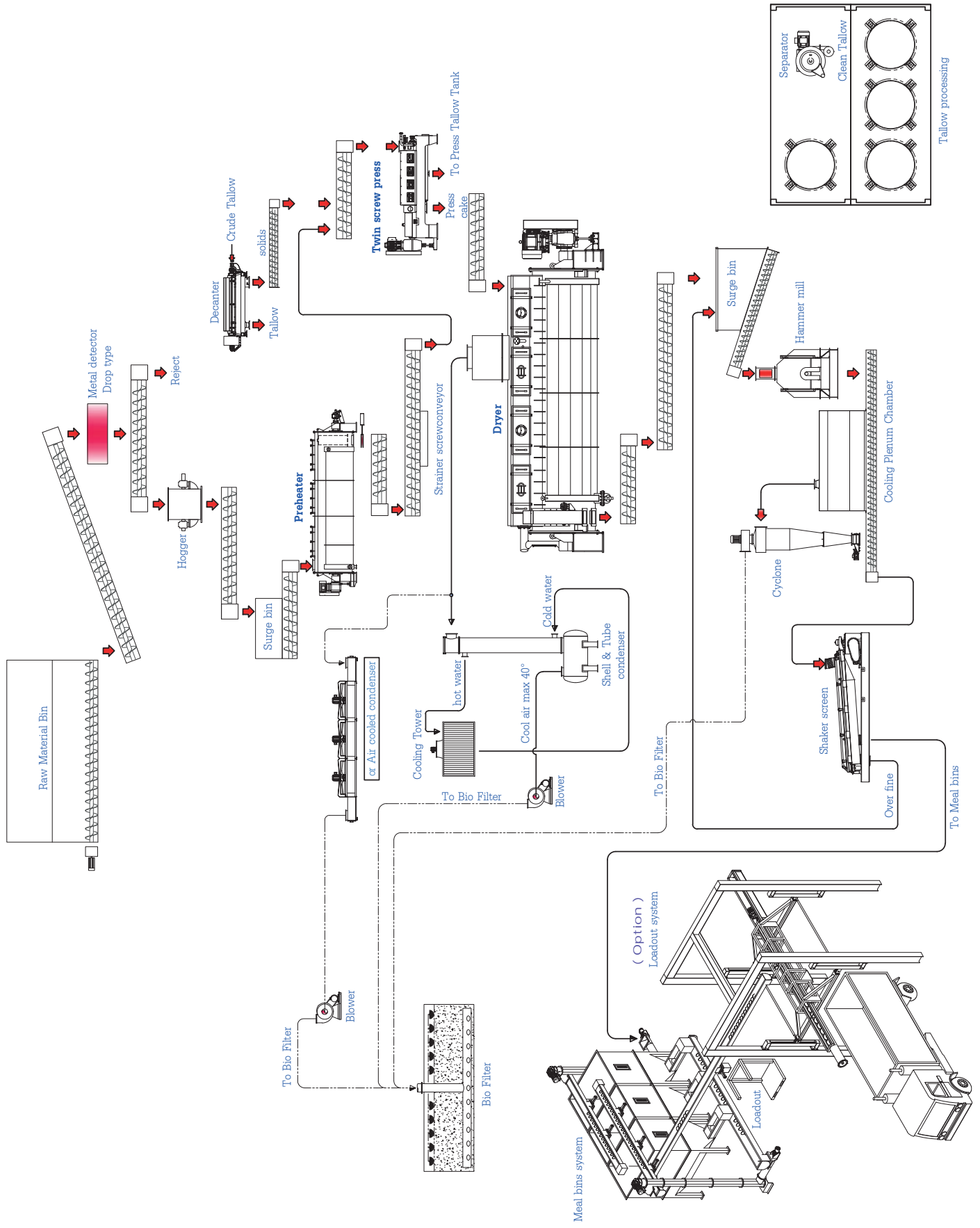
Installation:

ASTW offers full turnkey installation with every nut and bolt of the plant included. This takes away the risk of unqualified installation and problems with the warranty. It ensures that your plant is correctly installed and commissioned by an experienced installation team.

All plants are delivered with electrical cabinets and full PLC/SCADA automation.

ASTW chicken rendering plants are available in the following sizes:

Name	Capacity tons/hour
LTR 2.5	2-3
LTR 5	4-6
LTR 7	6-8
LTR 10	9-11
LTR 15	14-16



Feather processing

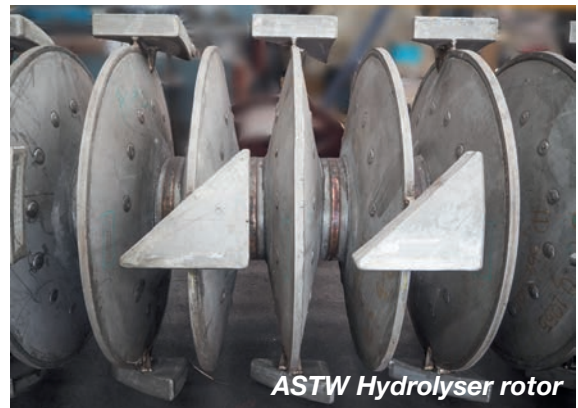
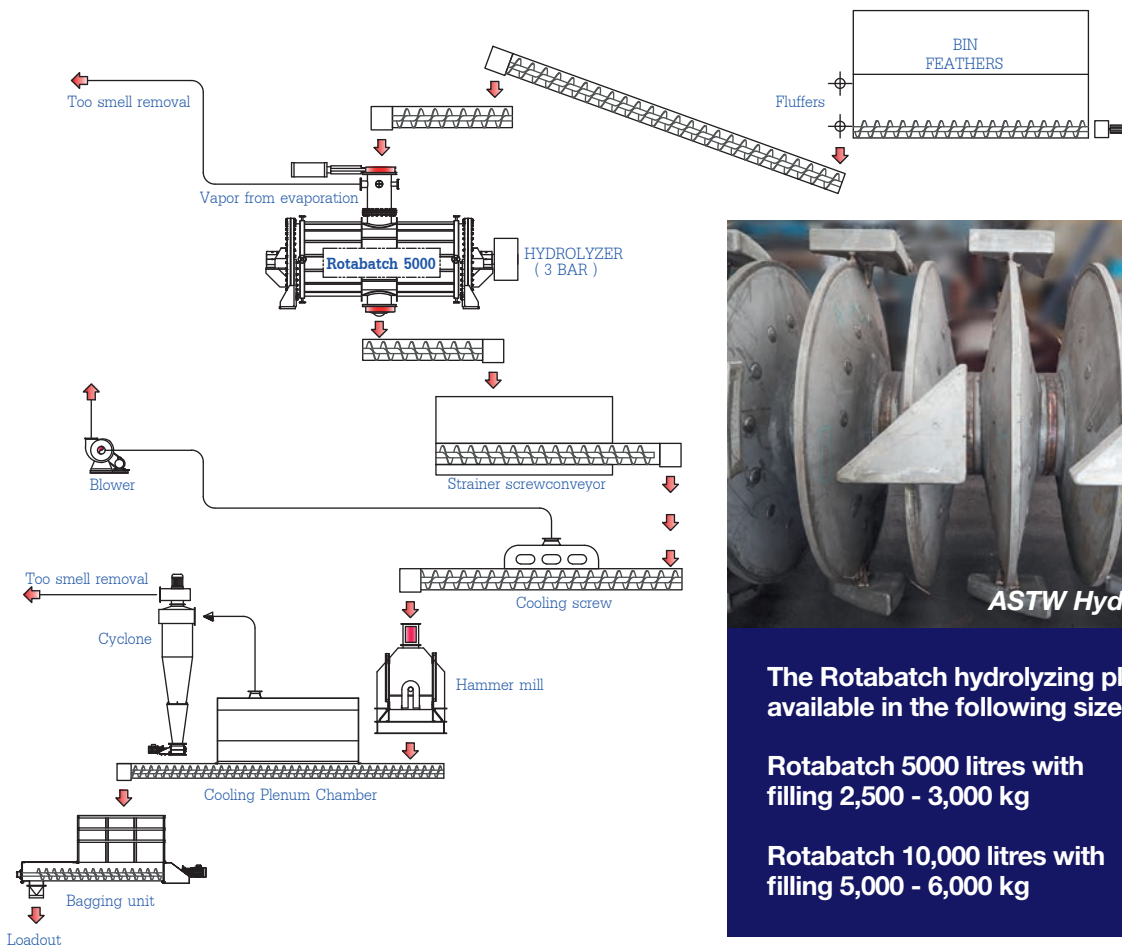
Raw feathers have high protein content but are not digestible until they are hydrolysed in a pressure cooker at 3 bar for about 20 minutes and then dried to feather meal.

ASTW has developed the all stainless steel Rotabatch combined hydrolyzer and batch cooker. The advantages over a traditional combined batch cooker for feather are:

- Twice as much heating surface due to heated disks on the rotor.
- Faster heating and drying using only one unit.
- Can eliminate the need for both a batch cooker and a subsequent dryer.
- The all stainless design ensures a very long lifetime without having to replace the inner shell and rotor.

Example:

To process 10 tons of feather, the Rotabatch 5000 litres will do 3 batches in about 10 hours.



The Rotabatch hydrolyzing plant is available in the following sizes:

Rotabatch 5000 litres with filling 2,500 - 3,000 kg

Rotabatch 10,000 litres with filling 5,000 - 6,000 kg



Meal cooler



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