

/VetterTec – Tube Bundle Dryer

The VetterTec Tube Bundle Dryer is an indirect steam heated dryer and well known for its efficient and gentle treatment of products.

By using steam as indirect heating media you are flexible in the choice of your energy source.



/ Tube Bundle Dryer



high availability
integrated bag filter
low emissions

energy recovery up to 90%
low steam consumption



high wet bulb temperature



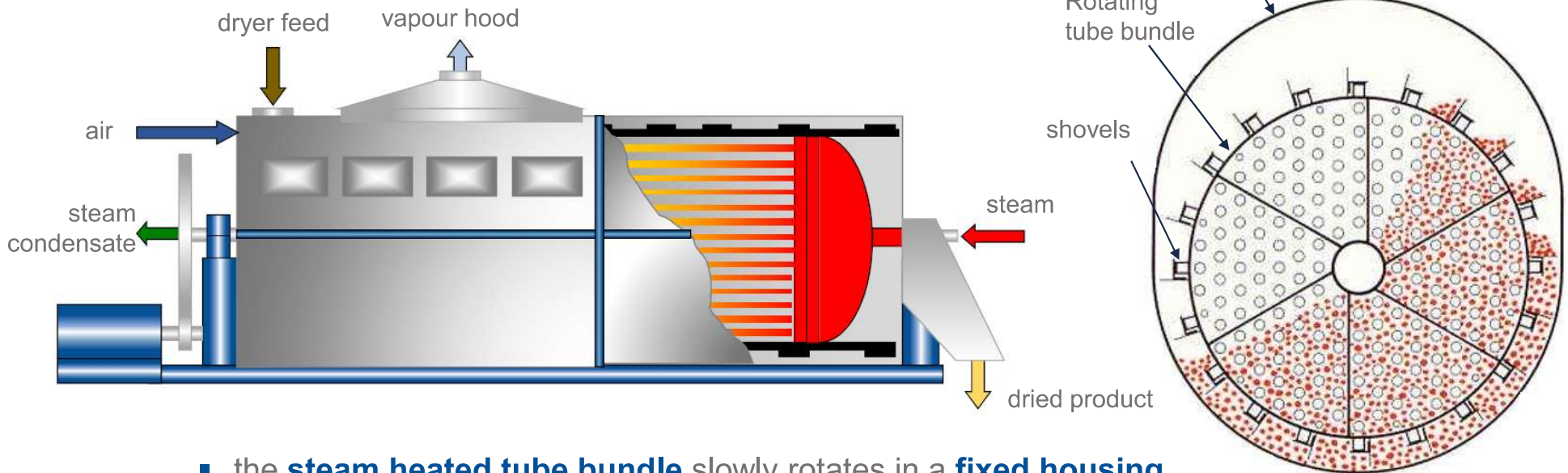
removal of solvents

Main characteristics



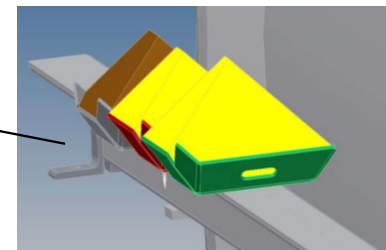
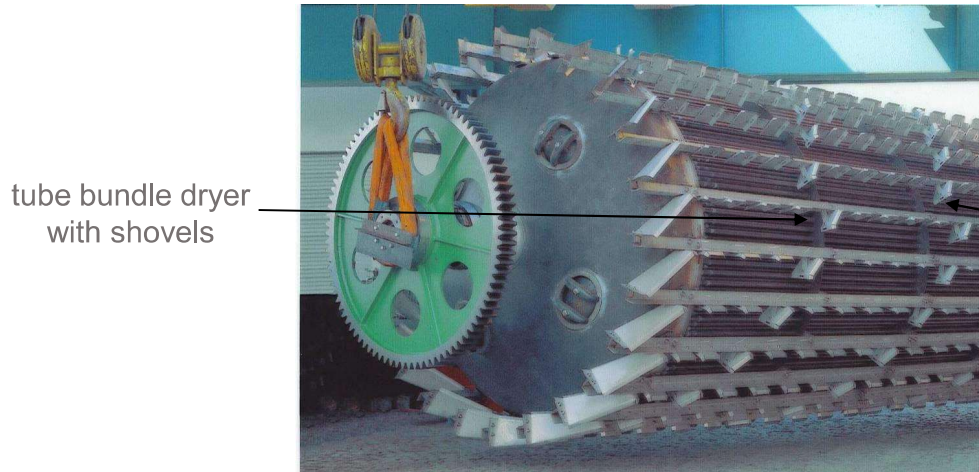
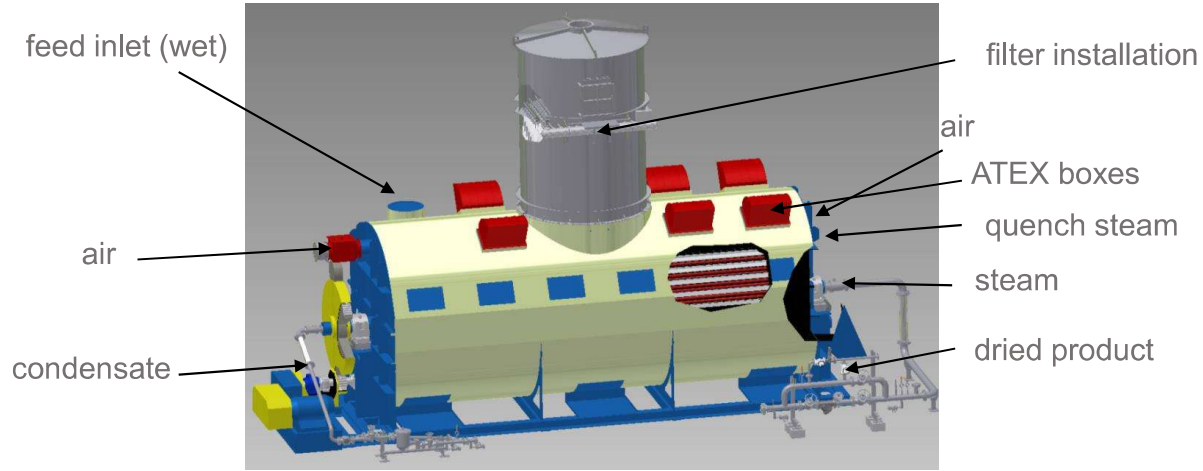
- combine convection and contact drying
- steam as indirect heating medium
- gentle drying through low temperatures
- easy installation through modular design and pre manufacturing
- closed gas-tight system possible
- optional drying below atmospheric pressure

/ Tube Bundle Dryer – working principle



- the **steam heated tube bundle** slowly rotates in a **fixed housing** and conveys the product to be dried axially through the dryer
- **Reverse flow system => steam flow versus product flow**
- shovels transport the product along the circumference of the housing, where it falls through the heated tube bundle for each rotation
- **economic and gentle drying** is achieved by contact with the tubes and convection

/Tube Bundle Dryer – design features



/Tube Bundle Dryer – design features

Filter Installation

- filter positioned directly on top of the dryer housing
- no dust layers inside the tube connections
- min. risk of fire
- min. emission value (assured: < 20 mg, at measured 5-12 mg)
- cleaned air can be re-used directly (without an additional wet scrubber)
- adherence of the dust emission regulations

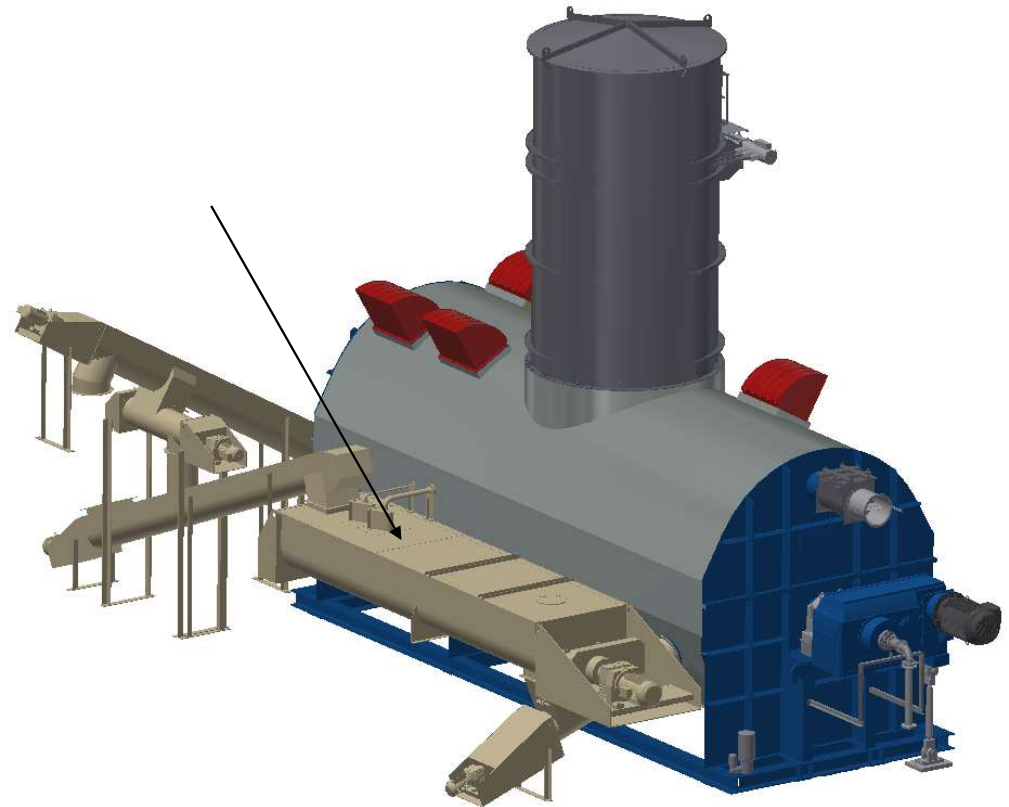


/Tube Bundle Dryer – design features

Mixing & Recycling System

The mixing and recycling system is equipped with a special double shaft mixer and various screw conveyors.

The system is mixing two components (e.g. bran and syrup) together with a part of the already dried product, in order to get a suitable feed for the dryer



/Tube Bundle Dryer – design features

Oxygen Control

- prevention of fire critical situation
- minimization of exhaust – high wet bulb temperatur
- maximization of energy recovering

Explosion Prof design ATEX

- Gas Area approved
- Dust Area approved

Tube Bundle Pressure code

- ASME Pressure Vessel
- European PED
- Canadian CRN
- Japanese JIS



ATEX boxes

/Tube Bundle Dryer – applications



Starch Industry

- gluten
- germ (corn, wheat etc.)
- corn husks
- feed (DDGS) / fibres / CSL / bran



Alcohol/Ethanol and Brewery

- DDGS (wheat, corn, triticale, etc.)
- spent grains
- yeast



Vegetable Oil

- rape seeds
- olive pomace
- soya beans
- sun flower fibres
- removal of solvents (desolventizing)

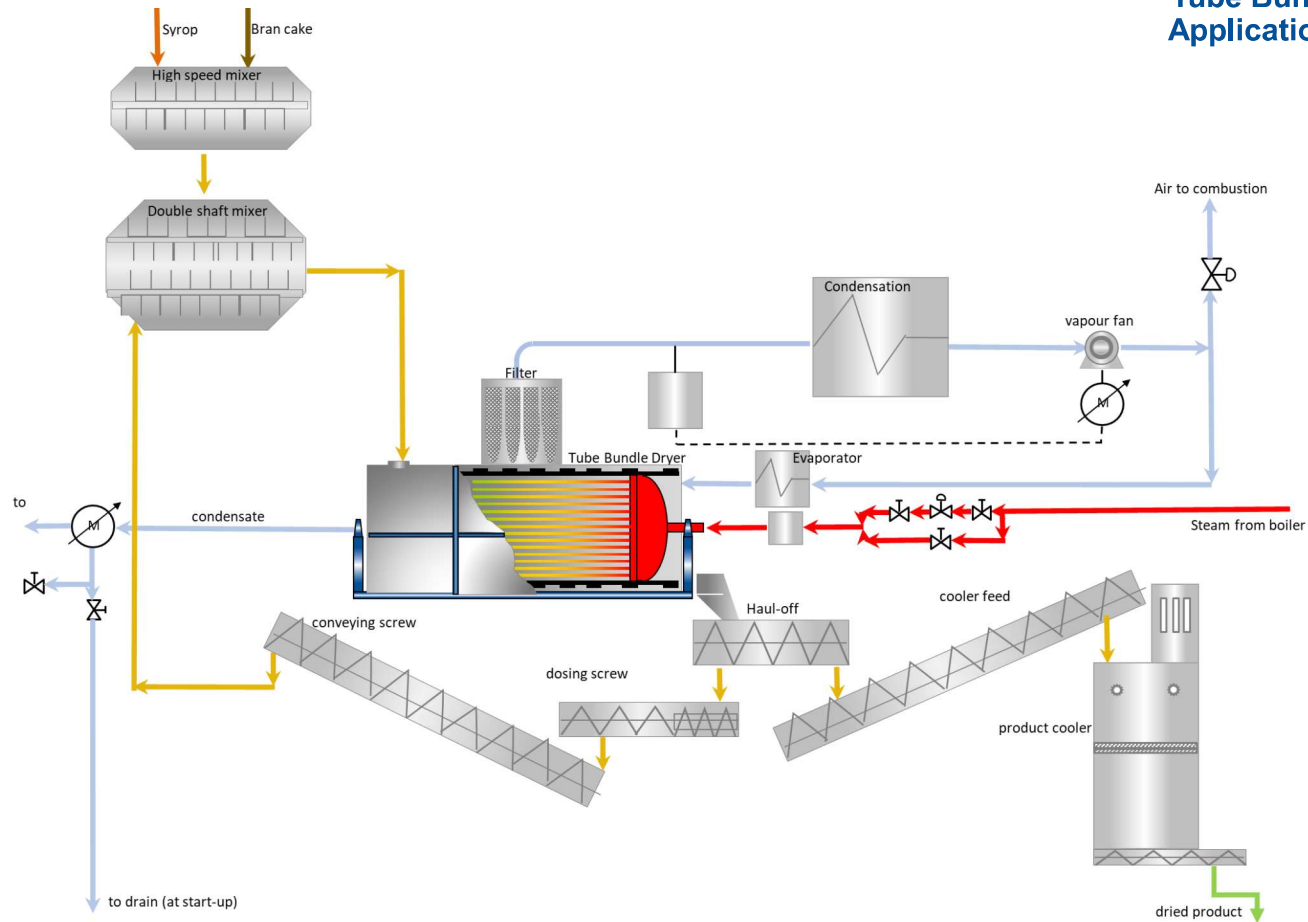


Various

- lignin
- pig manure

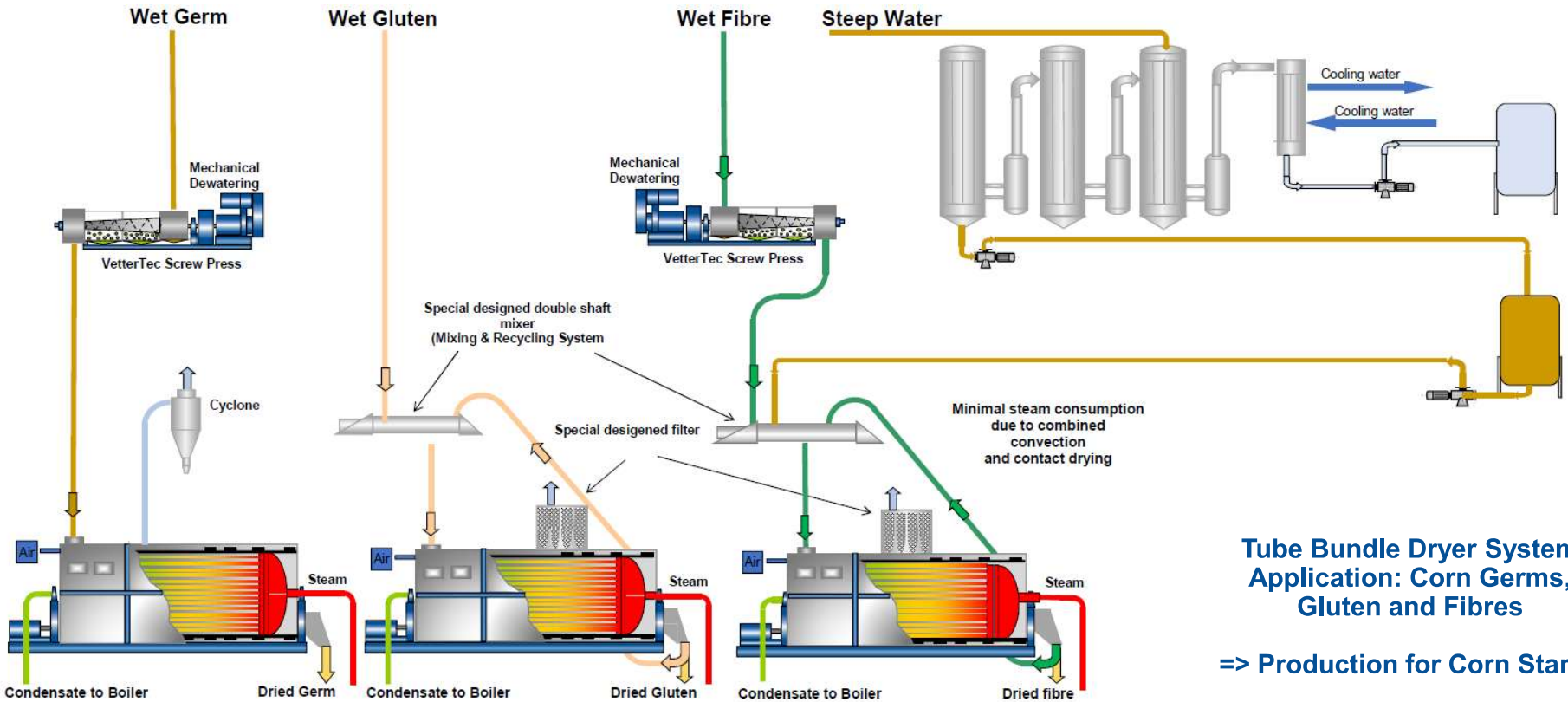
/ Design example

Tube Bundle Dryer System Application: DDGS + Syrop



/ Design example

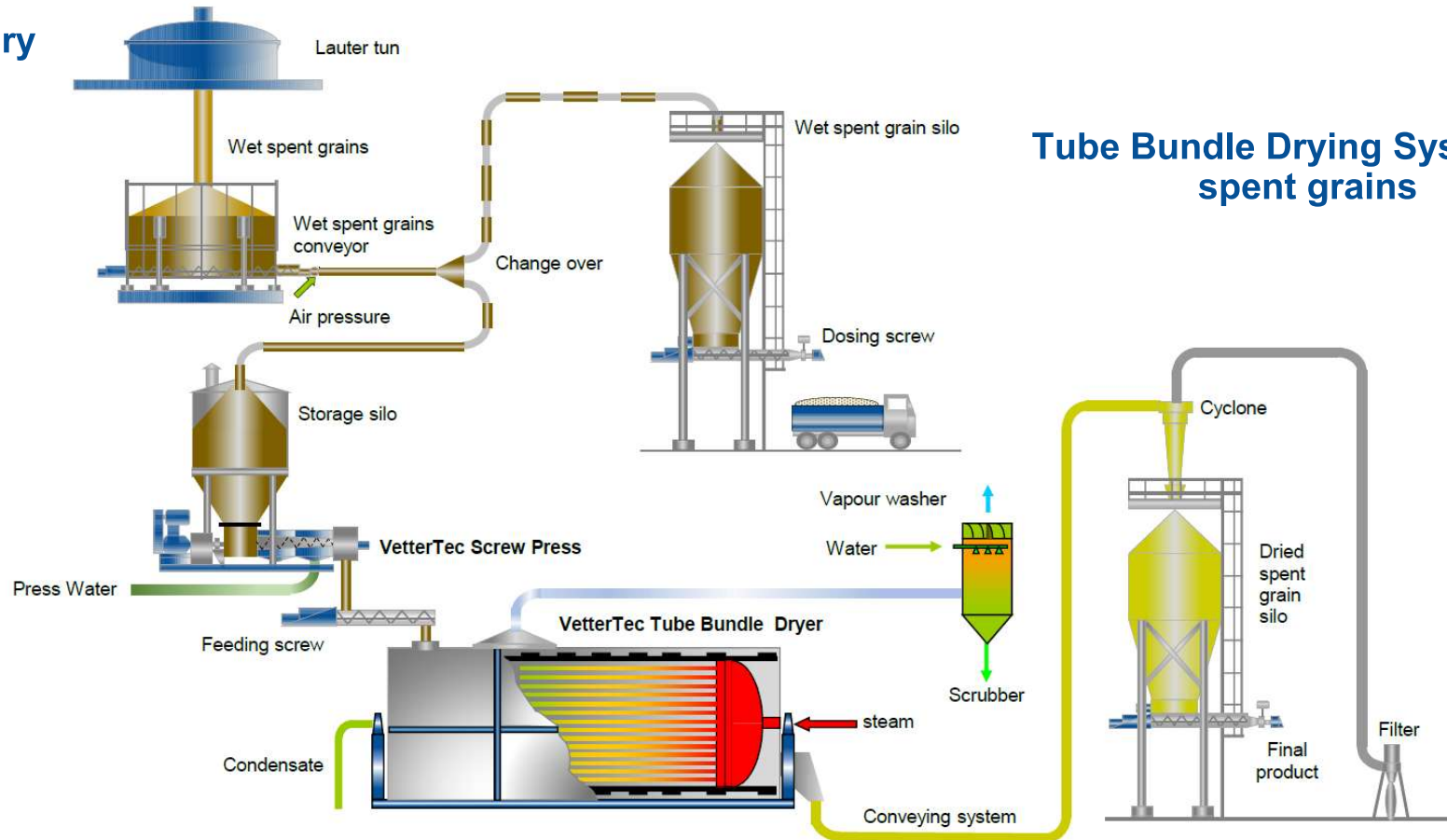
Starch Industry



**Tube Bundle Dryer System
Application: Corn Germs,
Gluten and Fibrres**
=> Production for Corn Starch

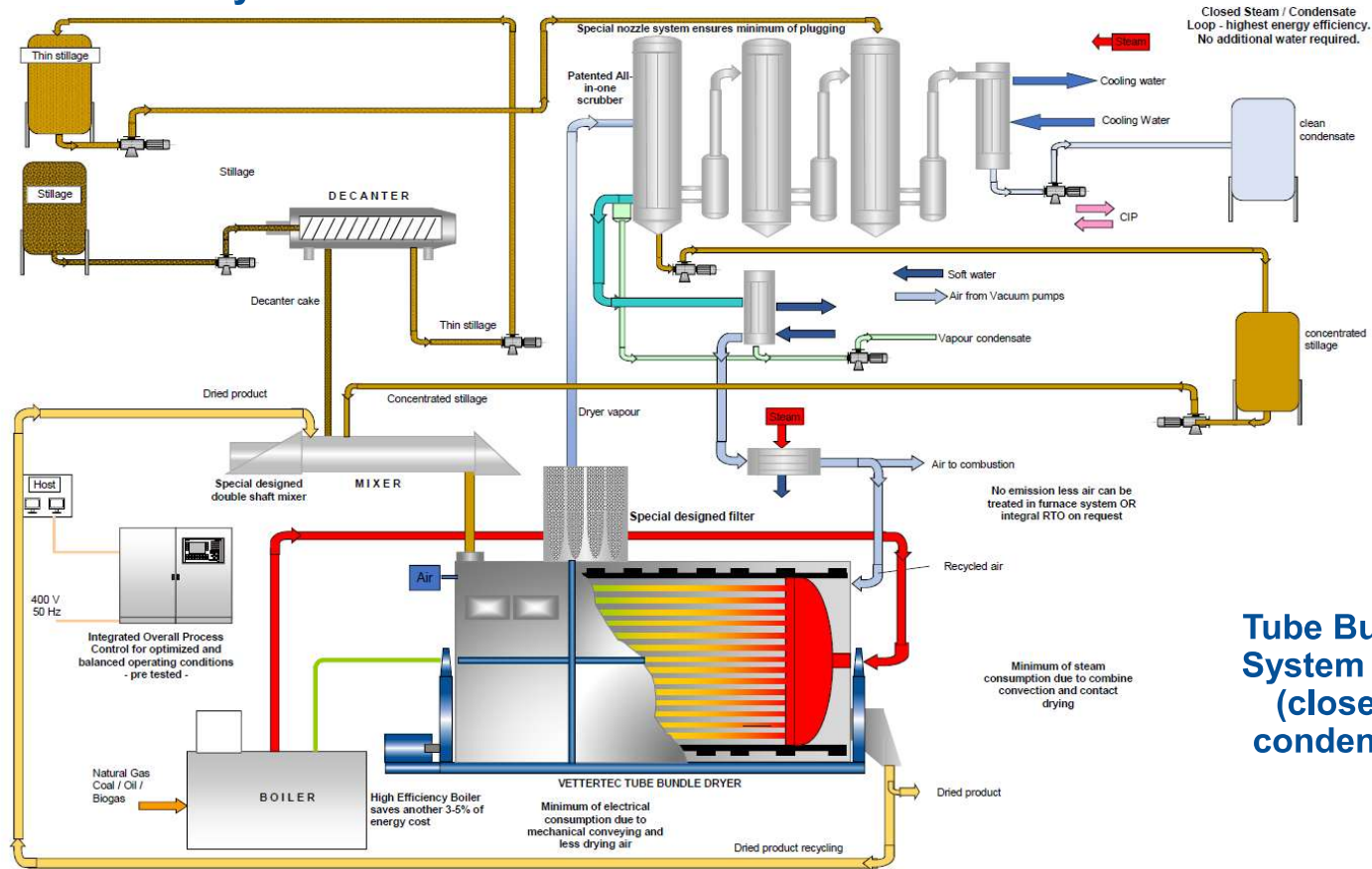
/ Design example

Brewery



/ Design example

Starch/Alcohol Industry



Tube Bundle Dryer System for stillage (closed steam/condensate loop)