



Innovative design for energy recovery and odor control

The Dupps Company, USA



The Dupps Company manufactures processing systems that turn fish by-products into protein-rich fishmeal, organic fish solubles, and fats such as omega-3 fish oil. Used in various ways with many benefits, fishmeal is a popular ingredient in animal feed. Fertilizer made of fish soluble products produces stronger plants and increased crop yields. And numerous studies have shown the health benefits of consuming omega-3 fatty acids from fish oil.

Munters heat exchangers added

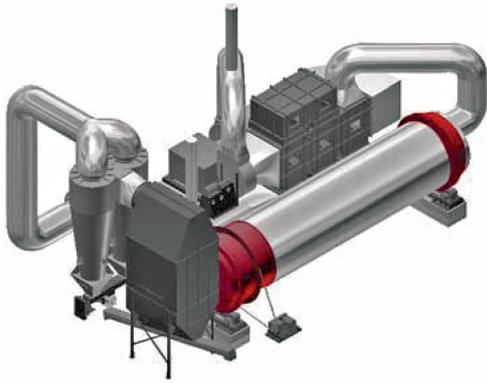
Dupps recently purchased two custom-designed and manufactured Munters heat exchangers. The three pass tubular heat exchangers with removable cores that facilitate cleaning are used as an indirect gas-fired heater during the fishmeal drying process. Recirculation of the process gas by the heat exchanger results in an unpleasant odor typically associated with this process. Besides controlling odor in the community, the Munters heat exchanger system helps Dupps efficiently produce fishmeal processing systems.

Case study

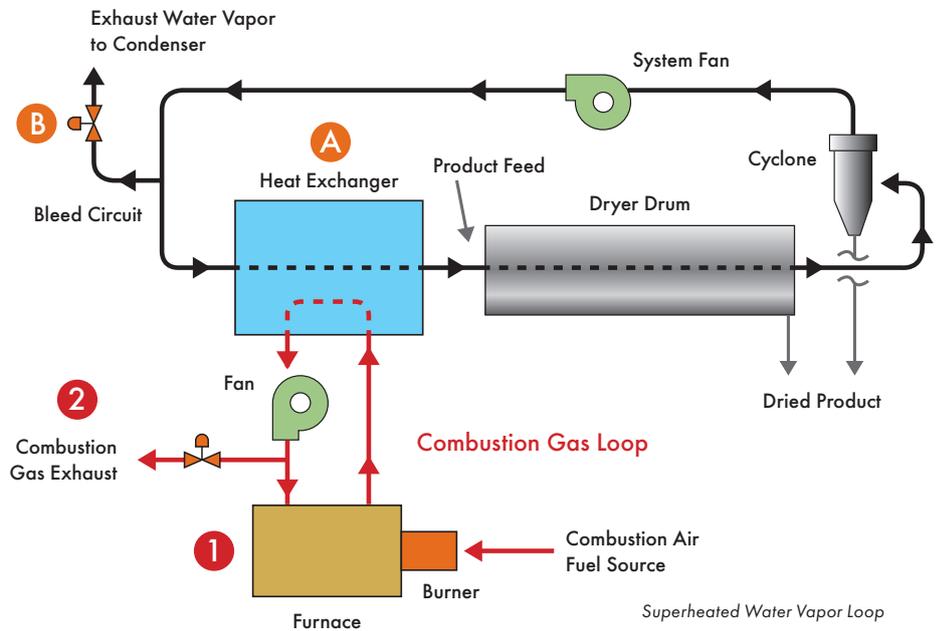
Heat exchangers utilized in fishmeal processing at Dupps.

Benefits

- Easily incorporated into existing system
- Efficient energy recovery
- Easy to clean
- Odor control



Munters (3) pass tubular heat exchanger design with removable cores

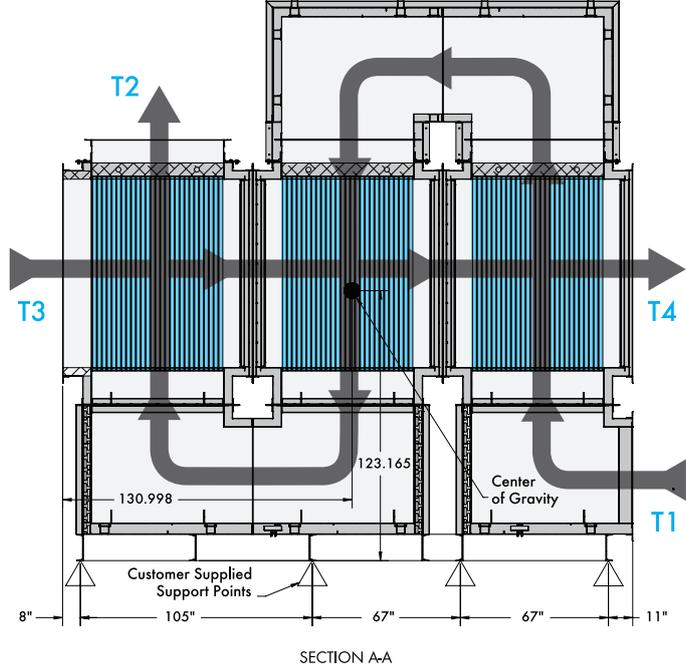
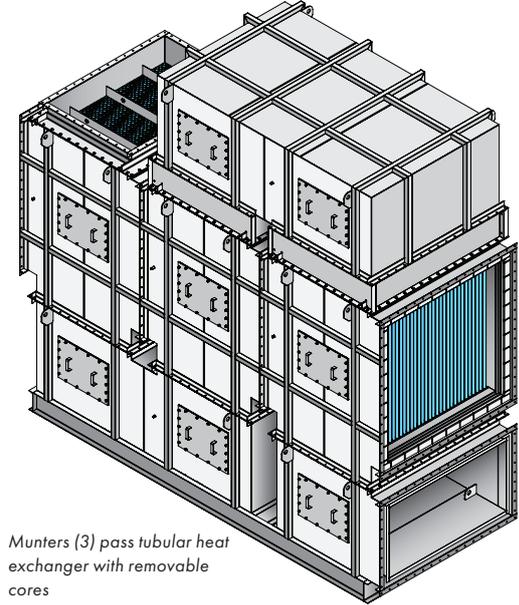


Heat recovery

Munters designed and supplied a special three (3) pass tubular heat exchanger to incorporate removable tube bundles for annual cleaning. The three (3) pass design recovers over 64% of the available waste energy or 21 MMBTU/HR resulting in significant fuel savings and operations energy cost reductions.

How it works

Please refer to the above illustration. The system fan creates a circulating loop of water vapor. Heat is transferred from the Munters heat exchanger (A) to drive the evaporation of moisture from wet feed in the dryer drum. The water evaporated from the feed displaces air in the water vapor loop, creating an "airless" environment. To maintain atmospheric pressure in the dryer, a bleed circuit (B) is needed to remove water vapor. This water vapor can be treated with a conventional condensing system or used as a heat source for other processes. Combustion gases from a conventional furnace (1) supply heat to the Munters heat exchanger. The combustion gases are circulated several times through the heat exchanger for maximum efficiency before being dispersed into the atmosphere (2).



Greater efficiency with lower environmental impact

- The Dupps airless dryer offers the highest thermal efficiency of any dryer commonly used in the fishmeal industry; up to 20% fewer BTUs per pound of water are evaporated using the Munters heat exchanger.
- Dryer exhaust is essentially water vapor, which can be used as a superior heat source elsewhere in the plant. Emissions are dramatically reduced and there is no visible exhaust plume.
- The airless design requires much less odor control and scrubbing system capacity.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com

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