



Unused Meat, Bone and Heads
are Rendered into Usable
Products

What is a Keyhole Trough?

Question

Raw materials such as meat, bones, heads, condemned carcasses are rendered into usable products. How is possible to meter or convey such large pieces with screw feeders and screw conveyors?

Answer

Keyhole troughs are used in processing and rendering plants to handle raw materials and whole condemned carcasses. A keyhole trough looks like an old-fashioned keyhole with approximately 240-degrees of circumference of a tubular housing on the bottom, then sloped and vertical sides terminating with top flanges.

Keyhole troughs are used in plants where larger animals are processed, such as cattle and swine. Smaller pieces of meat such as entrails and hooves will convey near the bottom of the trough. Quarters, heads, and whole condemned carcasses will convey on top of the screws. Most screw feeders or conveyors utilizing keyhole troughs have drive units located at the inlet end and “push” the materials to open end discharges.

Screw feeders and conveyors for handling raw materials are designed for sheer brute force and capable of crushing bones or parts that get between the screw and trough. Extreme high torque is required for the application with high horsepower and low speeds. Screws are designed with large screw pipe and shaft diameters. Screw flights can easily be 1-inch thick and continuously welded to the center pipe.

Keyhole troughs are quite large. For example, a 24-inch keyhole trough is 54-1/2” deep and 42” wide inside. Minimum trough thickness is 3/8-inch thick. Most keyhole troughs have outside support gussets on 4-foot centers. Abrasion Resistant (AR) plate wear liners are installed on the tubular bottom section and on sloped side walls.

KWS provides the Rendering Industry with properly designed keyhole screw feeders and conveyors for handling raw materials with very large parts.



Keyhole Trough Conveys Raw Materials to
Magnetic Separation and Grinding



Smaller Pieces Convey on Bottom While
Larger Pieces convey on Top of Screw



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