

SHELL AND TUBE HEAT EXCHANGERS



mixing & heat transfer

Double Tube Sheets for cGMP and High Purity Applications

Problem

In a typical shell and tube heat exchanger, any leak in the tube sheet will cause immediate cross-contamination between the process and cooling liquid.

Solution

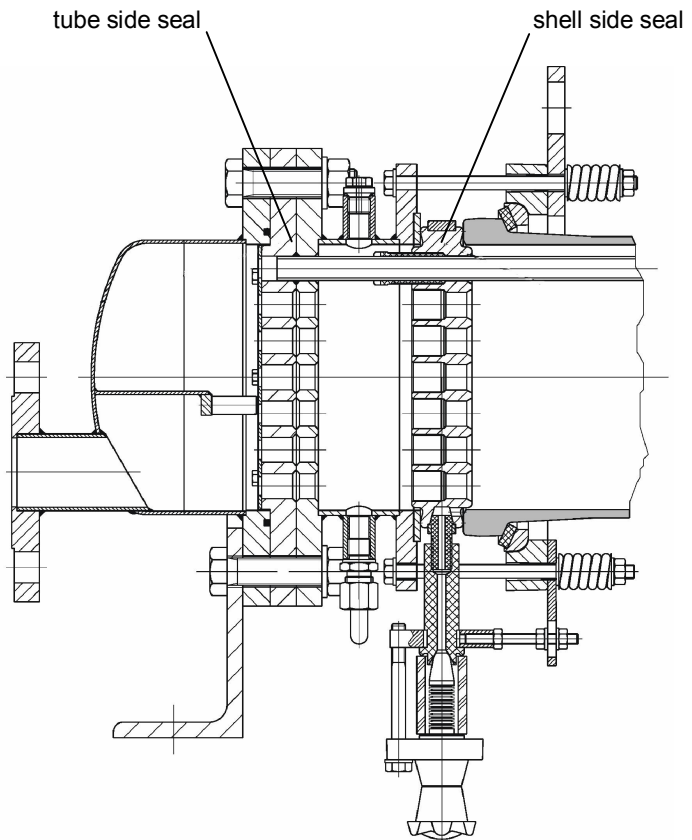
The double tube sheet design with an intervening safety chamber prevents contamination of product and cooling liquid under all circumstances. In case of a leaking tube gasket, the product or cooling liquid runs into the safety chamber and through the purge valve. The leakage is detected immediately.

The construction enables the use of various materials on the tube and shell side to meet any specific requirements.

An additional feature is the installation of a product drain through the edge of the tube sheet, especially useful for complete recovery of shell-side product in a vertical installation

Advantages

- Absolute cross-contamination proof design, even with vacuum in the shell or tube side.
- Custom designs use cGMP materials to meet specific applications, such as glass, SiC, glass-lined steel, stainless steel, PTFE
- Minimal product holdup eases cleaning and prevents product losses
- Meets CIP and SIP specifications



Shell and tube heat exchanger with double tube sheet



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