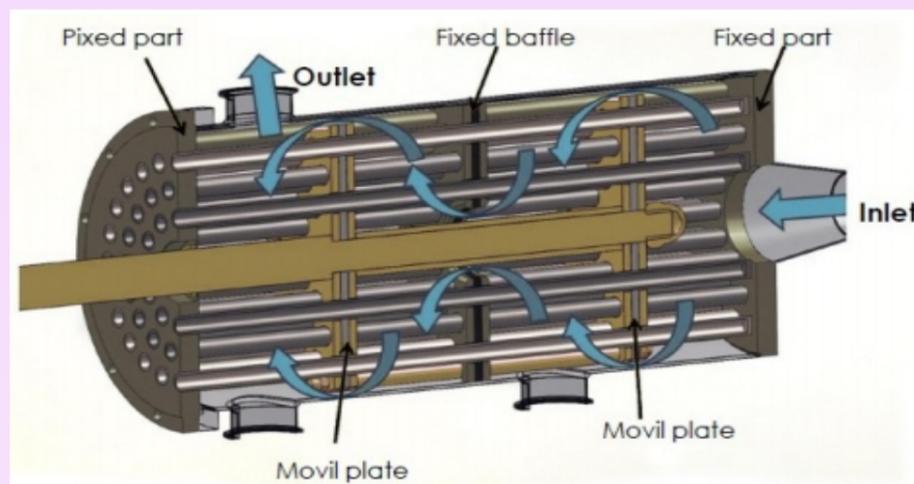




ASTUTE is a Scraped Surface Heat Exchanger with hygienic design and largest heat transfer area per unit volume over the conventional one. Astute is a compartmentalized heat exchanger with forced fluid displacement and with scraped surface for heat transfer. The product flows on the shell side and service flows through the inner tubes. On the shell side the combination of static deflectors and the scraping plates advance with a reciprocating movement, forcing a total displacement of all the product from side to side, independently of product process flow rate, whereas the product net flow travels through the heat exchanger generating nearly no pressure drop. The main difference between the **ASTUTE** and the conventional scraped surface heat exchanger is reciprocating action of the scrapers on the shell side (on the outer surface of the tubes) instead of rotary action of the scraper shaft on the inner shell. The induced product flow is perpendicular to the inner tubes, which promotes heat transfer and cleaning, thus reducing thermal processing time and also extending the production cycles.



Main Features

- Reciprocating action instead of Rotary action
- Less power consumption
- Handles all kind of viscosity levels
- Handles Medium sized particles
- Reduces thermal processing time
- Very low pressure drop
- Compact Size

Comparison

Parameter	Tubular	Plate	Astute
Viscous Product	Medium	Low	High
Product Treatment	Hard	Hard	Gentle
Runtime	High	Low	High
Floor Space	High	Low	Medium
Pressure Drop	High	Low	Low
For Crystallization	Medium	Not Suitable	Ideal

Advantages

- High thermal efficiency due to the forced displacement of the whole product.
- Homogeneous thermal treatment for the whole product. No dead zones due to total displacement of product through interior compartments.
- Very low level of fouling, due to the action of the scraper over the heat transfer surfaces.
- Increase of the continuous work time, due to the scraped surface and the forced flow.
- Low pressure drop.
- Ease of operation and Maintenance due to its easily removable cover.
- Visual Inspection: The shell is easily removable which allows a quick visual inspection of the product side of the heat exchanger,
- Uniform heat treatment of product: No dead zones because of the total displacement of the product in the inner chambers.
- Compact Design: The high thermal efficiency leads to a reduction of space required for installation and maintenance. It permits to process very high viscosity products with near no pressure drop.



Applications

- Finishers for Evaporation
- Concentration
- Cooling and Crystallization
- Partial Freezing
- Energy recovery with high viscosity
- Aseptic Process
- Energy Recovery with High viscosity

Technical Details

- **Models :** A42 273/22 -1.5, A61 323/22 -1.5 4.5m² to 12.5m²
- **Heating Service :** Steam or Super Heated Water
- **Cooling Service:** Tower Water, Cold Water, Glycol, Ammonia DX
- **Scraper Material :** PEEK and Teflon
- **Design Code and Certification :** The construction of the machine is in accordance with ASME, with recommendations of the FDA and USDA, EHDEG to