



Contherm Scraped-Surface Heat Exchanger (SSHE)

Product Applications

The Contherm SSHE is particularly suited for processing viscous, sticky or chunky (containing particulates) products that are to be pumped. It can be used in a broad range of processing environments, including:

- Heating
- Slush-freezing
- Sterilization
- Cooling
- Pasteurization
- Crystallization

The Contherm can operate with the following media types:

- Steam
- Ammonia
- Thermal Oil
- Water
- Glycol
- Liquid Gases
- Brine
- Freon™

Functional Description

The product is pumped into the lower end of the Contherm heat exchange cylinder. As it flows through the cylinder, it is continuously agitated and removed from the cylinder's precisely finished walls by the scraping blades. This scraping action results in thin film product heating or cooling, a surface free from fouling deposits, and a corresponding high heat transfer rate.

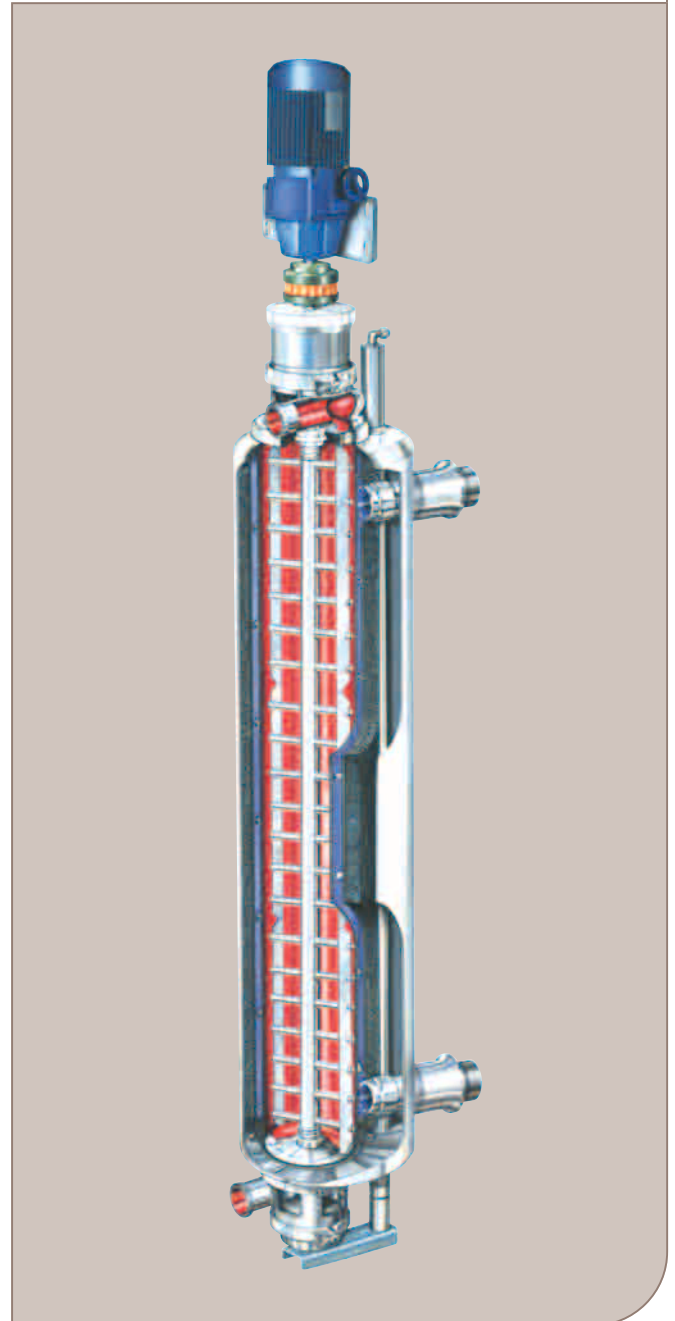
The rotor can be driven by either a top mounted electric (belt and sheave or direct coupled) or hydraulic motor drive. Either drive can be adjusted for varied rotor speeds – an important feature when a number of different products are to be processed.

Heating or cooling media flows in the annular space between the Contherm's heat exchange cylinder and the insulated jacket. When liquid media or steam is used, a spiral coil is installed in the annulus to provide a higher heat transfer efficiency. Steam, glycol, brine, or water enter the heat exchanger from the top end; refrigerants, such as ammonia and Freon, enter from the lower end.

On start-up, air is completely purged from the Contherm. At the end of a processing run, the product can be drained or "chased" by water resulting in minimal product loss.

Flow Rate

The Contherm's maximum flow rate is application specific and determined by the temperature program, nature of the product, and type of duty.



Product is pumped into the bottom of the Contherm and is continually agitated via the scraper blades while heating or cooling media flows in the jacket that surrounds the heat transfer cylinder.

Technical Data

Model	Heating Surface (Sq. ft/Sq. m)	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	Net Weight (lb/kg)	Floor Space for One (Sq. Feet/Sq. Meters)
6 X 3	3.0/0.28	33.6/854	98.5/2502	34.0/864	36.8/933	28.2/717	308/140	3.6/0.33
6 X 6	6.0/0.56	54.6/1387	143.5/3645	34.0/864	36.8/933	52.2/1326	515/234	3.6/0.33
6 X 9	9.0/0.84	78.6/1997	191.5/4684	34.0/864	36.8/933	76.2/1936	605/274	3.6/0.33

Note: The Net Weight does not include the weight of the motor.

Standard Design Features

Standard design features of the Contherm SSHE include:

- Vertical mounting on a wall or a column.
- Rotor is driven by electrical motor installed on upper end of the unit.
- Rotor is placed on ball bearings. Mechanical seals at each end of Contherm prevent product leakage and external contamination.
- Rotating scraping blades are secured to pins welded to the rotor.
- A hydraulic lifting device, an integral part of the Contherm, provides an easy way to lower the rotor and blades for maintenance and inspection.
- Tangential inlet/outlet ports provide gentler handling of the product, resulting in better product integrity and quality, by allowing product to enter and exit cylinder in same direction as the turning rotor.
- Its aseptic technology-based design complies with strict international standards of hygiene, including CE/3A and USDA.

Working Temperature:

From -20°F to +450°F (-60°C to +230°C). With special insulation, a lower temperature can be applied.

Maximum Working Pressure:

Product Side: 300 psig (20 bar)
Media Side: 250 psig (17.2 bar)

Connection:

Product Side: 2.00-in. (51-mm)
Sanitary (Union)
Media Side: 2.00-in. (51-mm) NFPT,
Upper; 1.50-in. (37-mm) NFPT, Lower

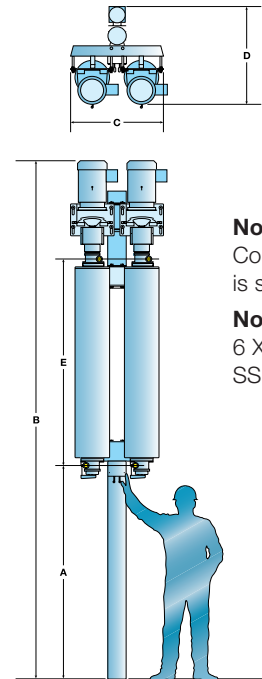
Materials

The heating surface is normally stainless steel, honed to a very high finish on the inner surface. The scraping blades are made of hardened and ground stainless steel or non-metallic material. Gaskets and O-ring are made of viton, nitrile or teflon. Suitable materials will be selected for special applications.

Optional Features

The following optional design features are available:

- Alternate drive systems.
- Motors of explosive proof design.
- Nickel, chromed nickel or chromed stainless.
- Alternative mounting configurations, including a horizontal option for use in facilities with limited ceiling height.
- 400 psig (27 bar) pressure rating.
- Control Panel with Automatic Maintain Status feature to prevent product freezing if flow is interrupted.
- Refrigeration (accumulator) or heating/cooling valve packages.
- Aseptic (Flush) Seals or Hard Face Seals.
- Rotors in different sizes: 3.00-in. (76-mm), 4.00-in. (102-mm), 4.50-in. (114-mm) and 5.00-in. (127-mm).
- Staggered blade to prevent channeling of product.



Note: Model 6 X 9 Contherm SSHE is shown.

Note: Two Model 6 X 9 Contherm SSHE are shown.

- 3.00-in. (76-mm) diameter product connections.
- An Eccentric rotor.

To request a quotation

To obtain a quotation, contact your Alfa Laval representative for a Contherm SSHE configured for your specific needs. Please provide your representative with the following information:

1. Required Flow Rate.
2. Temperature Program.
3. Physical Properties (viscosity, specific heat).
4. Description of product's nature.
5. List temperature, pressure, and capacity of available media.
6. Identify electrical voltage and current frequency.

SSHE2M1001

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.