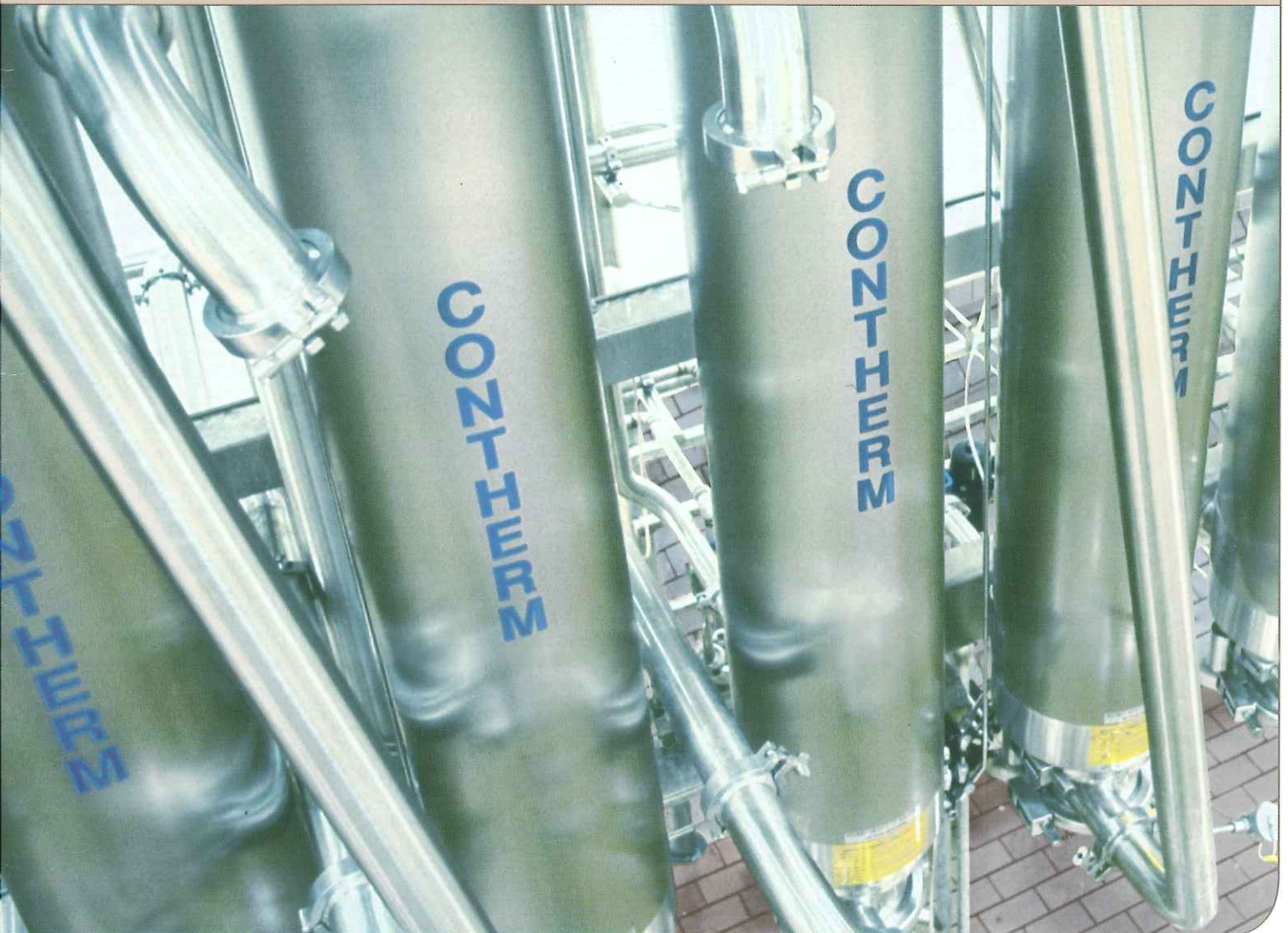


Contherm® Scraped-Surface Heat Exchanger

The Ultimate Food Heat Transfer Solution



Contherm® – The ultimate food heat exchanger

Today, convenience food plays an important role in peoples' lifestyles. However, fresh flavor and pleasing texture at an affordable price are critical qualities to the modern consumer. This presents a challenge to food manufacturers, particularly with prepared foods made from delicate raw materials or with consistencies that demand special processing.

Why a scraped-surface heat exchanger (SSHE)?

Many prepared foods prevent optimal heat transfer because of their consistency or content. For example, food or products with the following characteristics can quickly block or foul certain types of heat exchangers:



Viscous

Viscous

Ketchup, mayonnaise, chocolate, fruit pie filling, gravy and sauces, whipped/aerated products, peanut butter, pizza sauce, pudding, salad dressing, salsa and taco fillings, sandwich spreads, mechanically deboned meat, gelatin, scrambled eggs, baby food, ointment, lotions, mascara and candle gels.



Crystallizing/Phase Change

Crystallizing/Phase Change

Coffee/tea extracts, icings and frostings, lard, sugar concentrates, margarine, shortening, spreads, beer and wine.



Particulate

Particulate

Chicken pieces, fish meal, jams and preserves, pet food, rice pudding, yogurt and fruit.



Sticky

Sticky

Caramel, cheese sauces, lecithin, process cheese, confectionery and starch.

(Individual types of applications may possess more than one of these properties.)

The Heart of the System

Scraped-surface heat exchangers are at the heart of many modern continuous and semi-continuous processes of various food products. Also at the heart of many of today's systems are the Contherm SSHEs, which have earned the trust of many producers of today's food products.

Optimizing thermal efficiency

Continuous production is a prerequisite for modern food processing because it promotes:

- high throughput
- uniform heat transfer
- better economy

**Low Viscosity
No Fouling
No Particulates**



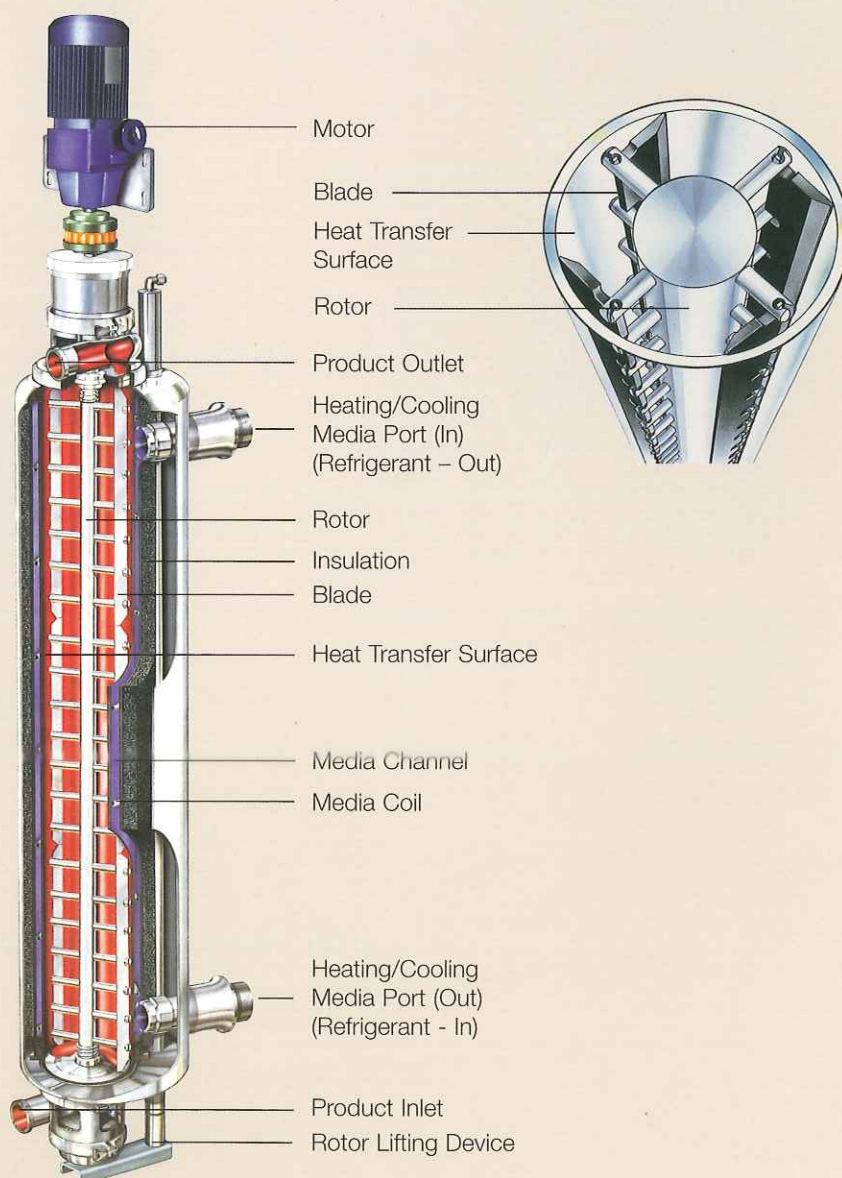
**High Viscosity
Fouling
Particulates**



How it works

- Product enters the cylinder through the lower tangential port and flows upwards through the cylinder.
- Simultaneously, media travels in a countercurrent flow through the narrow annular channel.
- Rotating blades continuously remove product from the cylinder wall to ensure uniform heat transfer to the product.
- A coil in the annulus increases media velocity, adding to the heat transfer efficiency.
- Product exits the cylinder through the upper tangential port.
- Product flow and rotor speed can be varied to suit the properties of the product flowing through the cylinder.
- Numerous configurations of the Contherm are available. By varying materials of construction, features and options, you can customize your SSHE to meet your requirements.

Contherm Scraped-Surface Heat Exchanger



Features and options for lifetime economy

Contherm design features and options ensure reliability, flexibility and maximum runtime, adding up to increased lifetime economy and return on investment.



Tangential head



Seal

Tangential product head design

- Product enters the cylinder under the rotor in a corkscrew pattern in the direction of the rotor to assure gentle product treatment. Product enters and exits the cylinder in the same direction as the turning rotor, maximizing product integrity and quality. This gentle handling is a must for products such as pie fillings, fruit preserves and soups and stews.

Aseptically sealed units

- Minimize the risk of microbial contamination
- 3A Approved
- A closed-system design keeps air, bacteria and foreign material out
- Remove the risk of contamination with flushable seals that are able to withstand the high pressures and temperatures found in aseptic processing
- Offer a variety of seal designs and materials to choose from
- Feature steam flush to maintain sterility of the product seal

Dedicated hydraulic rotor lift system

- Daily or weekly inspections
- Only one person required to raise and lower the rotor assembly, translating into reduced labor
- Reduces clean-up time significantly
- Maintenance and inspection times are cut in half as all Contherms have a devoted hydraulic rotor lifting device
- Fast and easy to use, keeping downtime to a minimum
- Fixed and secure integral design ensures safe operation

Automatic Maintain-Status feature

- This feature provides an automated control function to a customer's process, preventing product freeze-up that can occur when rapid cooling with expansion refrigerants

Contherm: mounting options to maximize space

Contherm is available in both vertical and horizontal configurations. However, it is most effective when mounted vertically. Contherm's design has proven to be the most effective in providing a comprehensive range of benefits, including:

- Saving valuable floor space – requires a fraction of the floor space (3 ft.² per unit)
- Maximizing product recovery by providing effective air purging/plug flow
- Optimizing cleaning-in-place (CIP) and reducing the risk of contamination
- Facilitating rapid and safe removal of the rotor assembly for simple inspection and labor-saving maintenance through the use of Contherm's dedicated hydraulic rotor lifting system

Horizontal mounting may be required when there is insufficient ceiling height for vertical installations. Portable frames are also available to accommodate your SSHEs.



Bellows Thermal Expansion Joint

- Welded product cylinder and media jacket employs a bellows thermal expansion joint, eliminating maintenance associated with gasket-style expansion joints
- Allows for more production time
- Ensures that steam or toxic media, such as ammonia, will not leak



Hydraulic lift

Technical Information

Model	Heating Surface ft ²	A in	B in	C in	D in	E in	Net* Weight lb	Floor Space ft ²
6x3	3.0	33.6	98.5	34.0	36.8	28.2	308	3.6
6x6	6.0	54.6	143.5	34.0	36.8	52.2	515	3.6
6x9	9.0	78.6	191.5	34.0	36.8	76.2	605	3.6

Model	Heating Surface m ²	A mm	B mm	C mm	D mm	E mm	Net* Weight kg	Floor Space m ²
6x3	0.279	854	2502	864	933	717	140	0.33
6x6	0.557	1387	3645	864	933	1326	234	0.33
6x9	0.836	1997	4864	864	933	1936	274	0.33

*Excluding motor

Contherm Specifications

Working temperature range:

-30°F to +300°F

(-35°C to +150°C)

Maximum working pressure:

300 psig (20 bar) on the product side, 250 psig (17 bar) on the media side. 400 psig (27 bar) design also available.

Connections — product side:

2" and 3" (51 and 76mm), union

Connections — media side:

2" (51mm), upper; 1-1/2" (37mm), lower

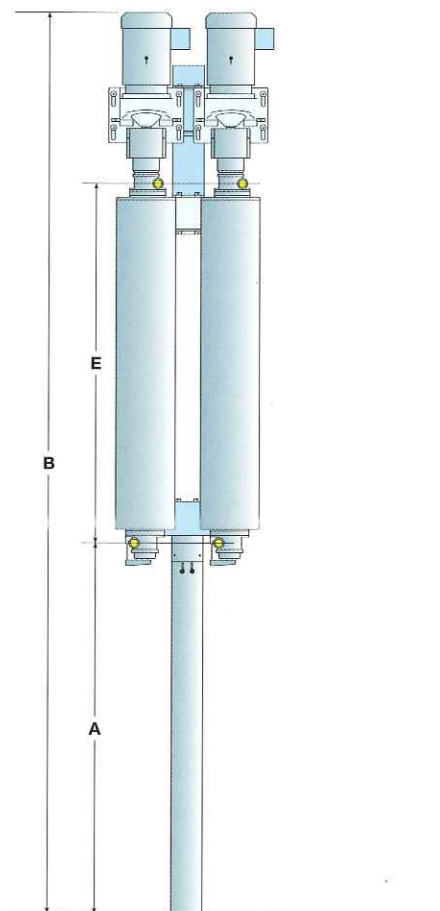
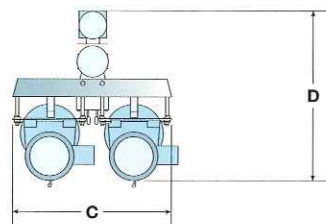
Options

- Alternative drive systems are available
- Standard stainless steel, Hipex stainless steel or nickel cylinders with or without single or triple-chroming
- Mounting column
- Stainless steel, Alfalon II plastic blades, or Nylon are offered in standard, slotted, and spring loaded types
- Standard, hard face, and aseptic seal designs available
- Rotors: 3", 4", 4 1/2", and 5" (76, 102, 114 and 127mm)
- Eccentric rotor
- Staggered blades to prevent channeling of product
- Connections with a larger diameter
- A horizontal Contherm option is available for use in facilities with limited ceiling height
- Cryogenic units

Particulars required for quotation

To enable our representative to tailor a Contherm system to your exact requirements, inquiries should be accompanied by the following information:

- Flow rates required
- Temperature program
- Physical properties of your product(s) or a description
- Type of heating and/or cooling media preferred





Convap evaporation module

The Contherm SSHE can be modified to form the Convap evaporator, which is particularly suited to concentrating viscous products. The system normally operates under vacuum. The entrainment separator, connected to the SSHE by means of a specially designed vapor head, allows the separation of the concentrate from the vapor phase.

Over 35 years of successful processing

Contherm, supplied by Alfa Laval®, embodies more than 35 years of efficiency and reliability. Units installed worldwide are fulfilling the demand for premium, uniform product quality. The Contherm is designed to meet the strictest sanitary standards and is widely used for aseptic processing applications. ISO9001 certification ensures that quality and dependable manufacturing practices are in place.

Nonstop performance

To be a frontrunner in your business, you must have strong support from your service supplier. The service has to go far beyond just solving problems when they occur. Rather, it is a lifelong investment that will help you optimize the performance of your processes. Alfa Laval provides that support. We call our approach "Nonstop performance". Nonstop performance gives you outstanding service. It offers you unique expertise. And it makes it easy to do business with us.

Customer support: An innovative technology that never ends

From initial contact to system operation, there are many ways in which we can help you get the most out of your investment in Alfa Laval. Our customer support program includes application advice, test units, process development and configuration, and service contracts. By listening to your views and following processing trends at the source, we can fine-tune our systems to satisfy your demands.

To enable your staff to run and maintain your Contherm SSHE during everyday production, we offer training courses and seminars covering all aspects of their use. And, of course, because we provide local support on a worldwide basis, we can respond rapidly to your emergency situations.

Parts and service

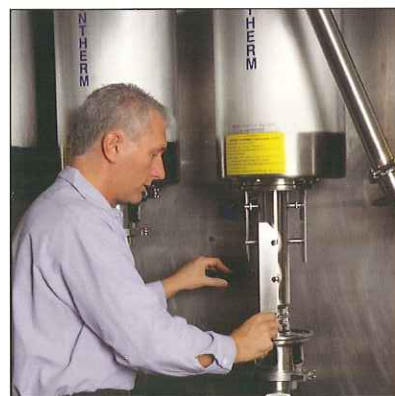
Parts and service agreements tailored to your individual requirements are an important part of Alfa Laval's customer care program designed to maximize your production uptime.

Food Development Centers at your disposal

Put the Contherm and your product to the test. We have fully equipped Food Development Centers in the USA, Sweden and Japan, which are available for the cost-effective development and definition of process conditions prior to scale-up. Whether you want to test processing methods or plant efficiency, we have the facilities and application knowledge to help your decision making.

Rental units are also available

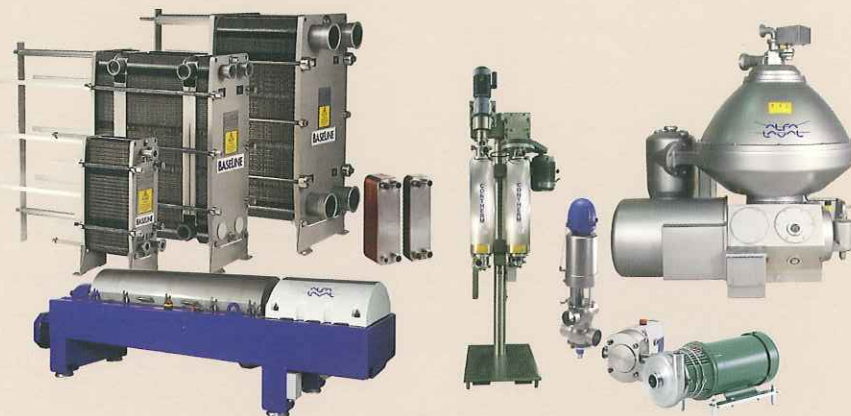
For reasons of confidentiality, if you prefer to carry out processing trials using Contherm in your own plant and with your own personnel, we can offer you a Contherm test unit on a rental basis along with qualified Contherm personnel during start-up.



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Alfa Laval stands behind many innovations that have brought better, safer food at lower prices to more people. Your source for reliable food processing performance, Alfa Laval offers products to meet all of your requirements.



Fluid Handling Equipment

- Our wide range of centrifugal pumps provides high efficiency and low maintenance costs
- Positive displacement pumps feature a tough, innovative construction and offer reliable, gentle pumping action
- The widest selection of valves for the food processing industry, our single seat, mixproof, and manual and specialty valves will meet your exacting demands for safety, efficiency and hygiene while ensuring the careful handling of your product
- Our wide range of control units offers high precision, reliability and performance
- Fittings, tank equipment and other accessories for clean and efficient processes

Heat Transfer

- Plate heat exchangers meet your exacting demands for food safety, efficiency and hygiene
- Spiral heat exchangers for heating, cooling, interchanging or condensing, offering high efficiency in a compact size
- Plate evaporators for condensing and evaporating; can be used as a booster with existing equipment or as a complete effect station
- Scraped-Surface Heat Exchangers for heating, cooling, slush-freezing, pasteurizing, sterilizing and crystallizing media that is viscous, sticky or particulate

Separation

- High performance sanitary decanter and disk-stack separators optimized for clarification, extraction, dewatering, and classification applications in the food and beverage industries, meeting the highest standards of hygiene



Alfa Laval in brief.

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuff, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

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How to contact Alfa Laval

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





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.

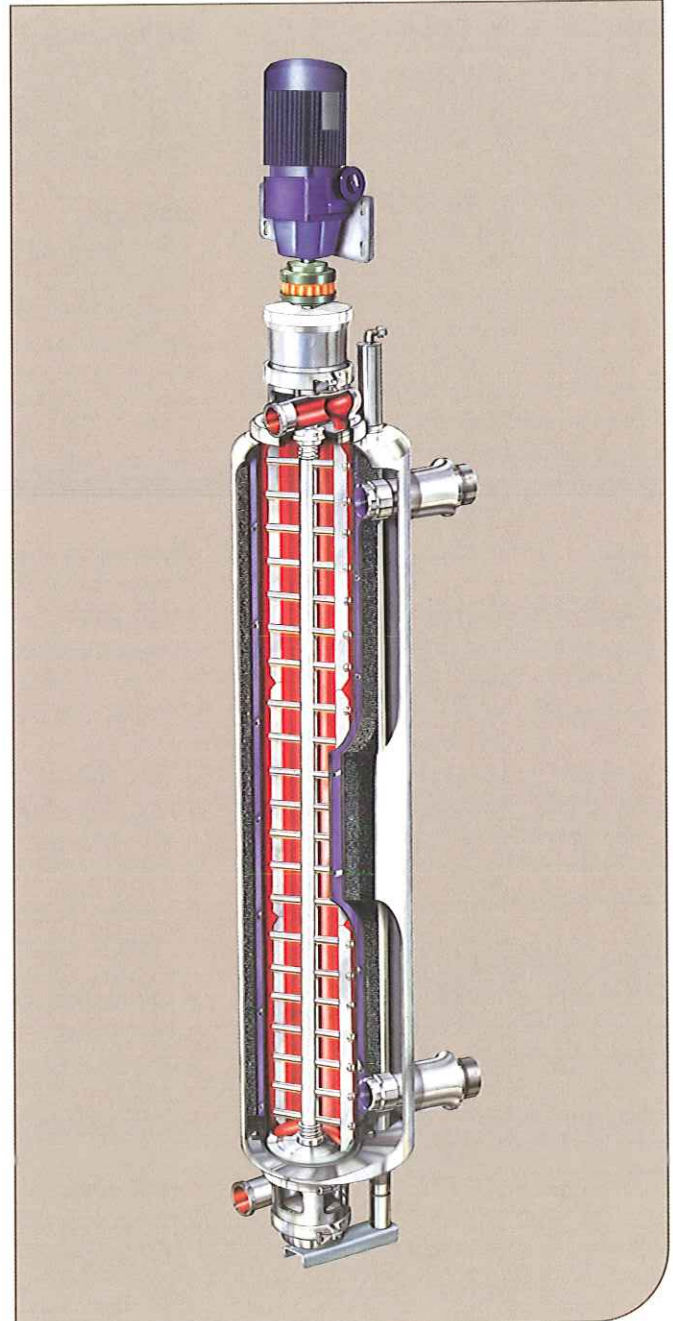
The rotor can be driven by either a top mounted electric (belt and sheave or direct coupled) or hydraulic motor drive. Either drive can be adjusted for varied rotor speeds – an important feature when a number of different products are to be processed.

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. Meanwhile, 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

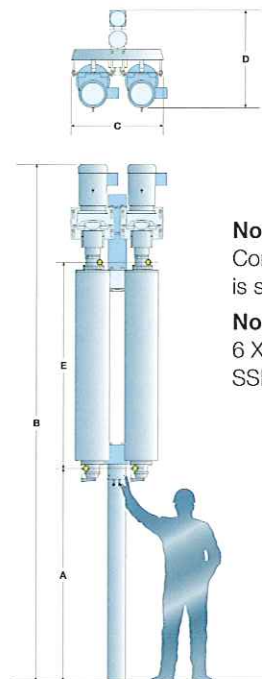
Materials

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

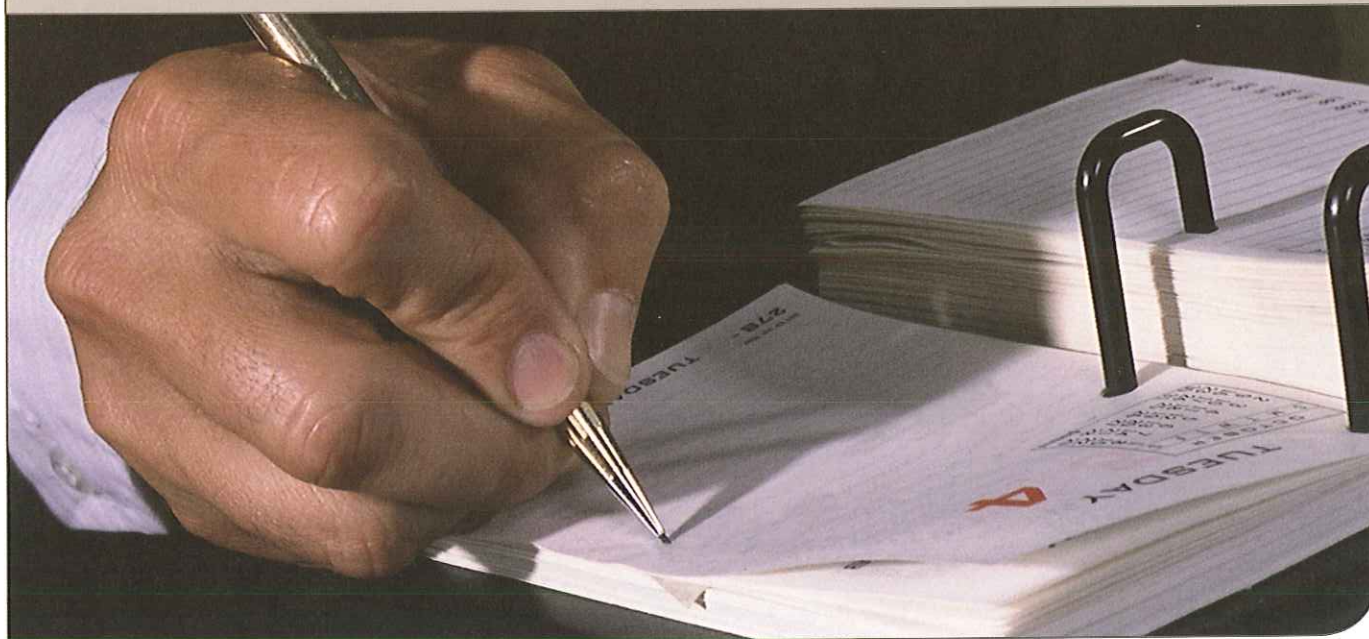
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Preventative Maintenance Guidelines

Maintenance schedules for the Contherm® Scraped-Surface Heat Exchanger



Plan your budget. Plan your downtime.

Why wait for system breakdowns to perform corrective maintenance? Why perform maintenance at irregular intervals and inconvenient times? Why lose money due to costly, unplanned downtime?

Preventative maintenance is the safest, most cost-effective way to take care of your equipment. And by using the following suggestions, together with genuine Alfa Laval® spare parts, you will achieve the best results.

By following a regular maintenance schedule, you can better plan your operating budget and your downtime. Risk of breakdowns due to component failure is virtually eliminated and operating costs are lower in the long term.

Alfa Laval Service Kits

The Contherm Product Center ships 95% of all spare parts and service kits within 24 hours, providing you with fast and reliable service. By ordering kits, you realize several benefits:

- Each service kit contains all the spare parts you need for that specific operation.
- You don't have to order a long list of individual items.
- Since each service kit has just one part number, you have fewer stock numbers to deal with.
- The kit price is less than the total cost of individual items.
- You don't need to carry a large stock of spare parts.

Service Kit Offering

- Standard and aseptic seal assemblies – major
- Standard and aseptic seal assemblies – minor
- Hydraulic lift assembly
- O-rings
- Outboard and inboard bearing assemblies
- Retaining rings

Contact the Contherm Product Center for additional details and prices.

Contherm Scraped-Surface Heat Exchanger Preventative Maintenance Schedules

Below is a periodic maintenance schedule for your Contherm Scraped-Surface Heat Exchanger or Convap Scraped-Surface Evaporator. The schedule assumes Contherm or Convap production operation of approximately 40 to 50 hours per week. This table has been provided by Alfa Laval's Contherm Product Center as a suggested maintenance guideline. Please contact the Contherm Product Center directly to discuss your specific application

and maintenance experience so that we can make recommendations for improving your process.

Maintenance guides

Detailed maintenance manuals are supplied with every Contherm purchase. They are also available in hard copy or digital format from Alfa Laval's Contherm Product Center located in Newburyport, Massachusetts. Service videos that take you through the maintenance procedures step-by-step are available upon request.

Component	Maintenance Action	Time Period
O-Rings	<ul style="list-style-type: none">• Inspect and lubricate• Replace	<ul style="list-style-type: none">• Each time the Contherm is opened• Weekly
Product Seals	<ul style="list-style-type: none">• Inspect• Replace	<ul style="list-style-type: none">• Weekly and when lowering the rotor assembly• Six-month interval
Blades	<ul style="list-style-type: none">• Inspect and dress edge• Replace	<ul style="list-style-type: none">• Weekly and when lowering the rotor• Six-month interval or when < 1.250" wide
Hydraulic Lift Pump	<ul style="list-style-type: none">• Check oil level• Replace oil	<ul style="list-style-type: none">• Weekly• Six-month interval
Bearings¹	<ul style="list-style-type: none">• Inspect• Replace	<ul style="list-style-type: none">• Monthly• Six-month interval (bottom); Annually (top)
Heat Transfer Cylinder²	<ul style="list-style-type: none">• Inspect• Clean In Place (CIP)	<ul style="list-style-type: none">• Weekly and when lowering the rotor• As required

1 Regular lower bearing inspection and replacement will ensure proper operation. Failure to maintain proper lower bearing function can result in significant and costly damage to the Contherm rotor, cylinder and blades.

2 The Contherm is designed specifically for cleaning in place with CIP solutions. Contact the Contherm Product Center for troubleshooting assistance and to discuss your specific application.

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Alfa Laval has been designing, developing, manufacturing and servicing the Contherm Scraped-Surface Heat Exchanger for over 35 years. We take great pride in providing an unmatched level of service that allows us to partner with and add significant value to our customers. In addition to effective maintenance programs, we offer the products, resources and support needed to enhance your bottom line.



Twelve month service kits



In-house or on-site training available



Spare parts shipped within 24 hours

Our commitment to you extends through the product life cycle.

Quick response, high availability, and short lead times are the basics. But Alfa Laval believes truly outstanding service requires a good deal more. Our goal is to add value to make your process run smoother. More than simply spares and repairs, we offer knowledge, skill and experience, as well as outstanding technology. Our parts and service offering is driven by your needs – to optimize the performance of your processes.

Products

- Spare part components are ISO9000 certified
- Service kits for specific components or equipment functions
- Conversion kits for upgrades
- Tools to increase ease of use

Resources

- Equipment and performance analysis available by trained engineering staff
- Instruction and parts documentation available in digital or hard copy format
- Instructional Maintenance videos
- Pilot plant facility, including state-of-the-art testing equipment

Services

- Service and maintenance agreements tailored to your specific needs
- Customer Testing Center for evaluating equipment and product performance
- Full scale units available for rent
- Parts rental (including cylinders and rotors) permits service without lost production time

Support

- Fast delivery of spare parts, most shipped within 24 hours
- Equipment inspection
- In-house or on-site training

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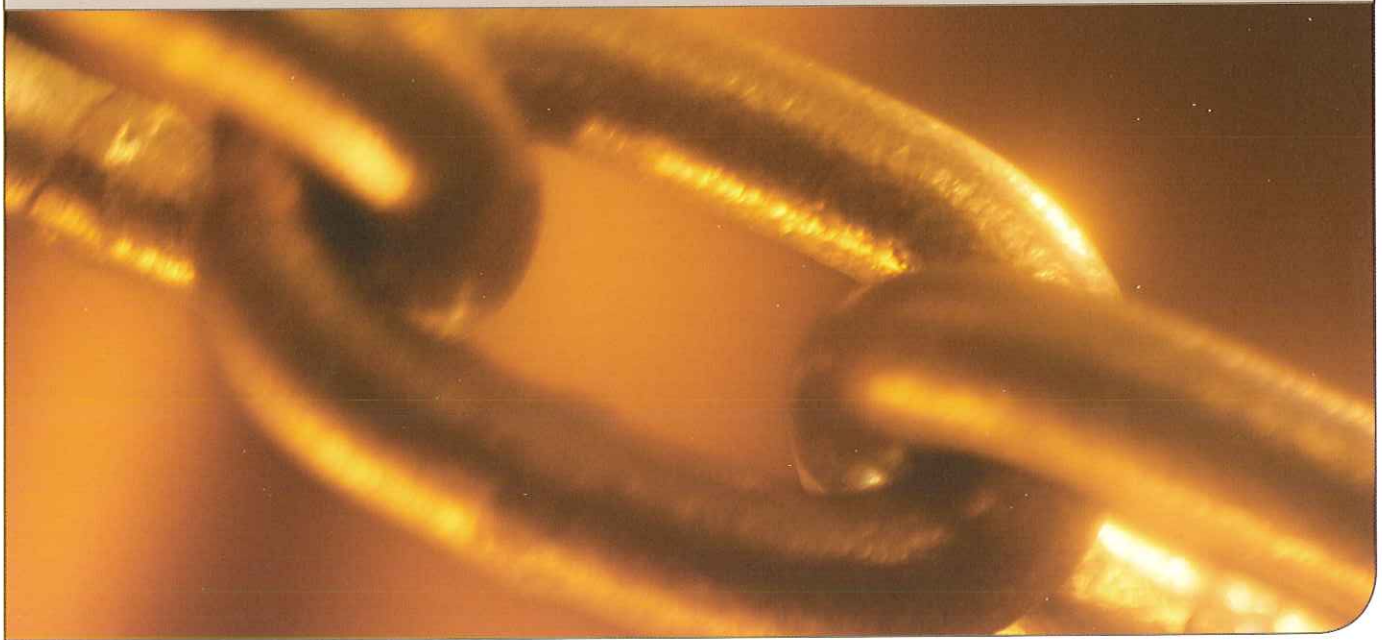
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Is it Really Worth the Risk?

Use of non-Alfa Laval spare parts can cost you more in the long run



Using non-Alfa Laval® parts can increase your overall maintenance and production costs. It pays to use the best.

Quality through and through

Alfa Laval's Contherm® Scraped-Surface Heat Exchangers are highly specialized, precision pieces of equipment. The Contherm Product Center is ISO9001 certified with established and proven manufacturing practices and a knowledge base that spans 35 years. You can have full confidence in the quality and dependability of our products.

Assess overall operating costs

Many variables contribute to equipment performance. It is important and worthwhile to review your overall long-term operating costs rather than concentrating solely on short-term product/maintenance costs. Proper preventative maintenance programs are essential for managing and tracking overall costs as well as promoting optimal performance and maximizing return on investment.

A heat exchanger that delivers unique performance

Scraped-surface heat exchangers are unique in their method of operation and out-perform other types of heat exchangers. In order to deliver optimum performance, scraped-surface heat exchangers may require additional care since their interior environment can be both dynamic and demanding, depending on the type of product being processed.

Maintaining a strong chain

A chain is only as strong as its weakest link. By using non-Alfa Laval spare parts in a Contherm Scraped-Surface Heat Exchanger, you may be compromising the integrity of the interactive components in your system. The risks of doing this include:

- Extensive and costly wear of genuine Contherm components due to non-Alfa Laval parts
- Unplanned system downtime/unreliable operation
- Voiding of equipment warranty

The examples given here illustrate the importance of using Contherm Scraped-Surface Heat Exchanger Spare Parts from Alfa Laval. All genuine spare parts are backed by a guarantee of quality.

Contherm Component	Associated cost and risk factors when using non-Alfa Laval parts
Seals	<ul style="list-style-type: none"> • Product loss • Product contamination • Unplanned labor and system downtime
Blades	<ul style="list-style-type: none"> • Loss of heat transfer and equipment performance • Excessive and costly Contherm cylinder wear • Blade breakage, causing equipment failure downstream <ul style="list-style-type: none"> - Unplanned labor and system downtime - Loss of product
Bearings¹	<ul style="list-style-type: none"> • Cylinder wear • Rotor wear • Seal wear • Blade wear • Overall equipment failure
O-Rings	<ul style="list-style-type: none"> • Product loss • Product contamination • Unplanned labor and system downtime
Hydraulic Lift Pump	<ul style="list-style-type: none"> • Operator / maintenance personnel safety • System downtime
Rotors	<ul style="list-style-type: none"> • Excessive heat exchange cylinder wear • Blade wear • Bearing failure
Heat Transfer Cylinder	<ul style="list-style-type: none"> • Blade wear • Loss of heat exchange performance • Rotor damage

¹ Bearings are among the least expensive parts to replace. They are responsible for the proper operation of many critical components such as the Contherm seal assemblies, the rotating rotor assembly, the scraping blades and the Contherm heat exchange cylinder itself. Failure to maintain proper bearing function can result in significant and potentially irreparable damage to your Contherm scraped-surface heat exchanger.

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Improving Your Performance

Contherm® Scraped-Surface Heat Exchanger upgrades and enhancements



Continuous improvement pays

The Contherm Scraped-Surface Heat Exchanger's (SSHE) improved design makes it extremely versatile and easy to operate and maintain in an extensive range of product applications. A result of Alfa Laval's philosophy of continuous improvement, the Contherm SSHE provides maximum performance for your processing operation.

The Contherm SSHE was introduced 35 years ago, and since that time, Alfa Laval® has been developing it to meet the evolving demands of a changing industry. Over the

years we've made the Contherm more efficient, more cost effective and more user friendly. The result is a heat exchanger that performs exactly to the specifications your product and process demand.

Alfa Laval seeks to be a long-term performance partner to our clients. A major part of that effort is service. From supplying the smallest part to helping clients configure systems to their specific applications, service is integral to the Alfa Laval business philosophy.

When should you consider upgrading your Contherm SSHE?

- When the Contherm is undergoing scheduled maintenance or refurbishment
- When your product and/or process is being modified
- When the Contherm has been out of service for some time
- When the Contherm equipment is being moved from one location to another

Some examples of upgrades available from the Contherm Product Center:

- Hipex cylinder replacement: High heat transfer coefficient allows for increased product flow without adding to surface area
- Bellows expansion joint: Reduces maintenance, designed to last the life of the cylinder and eliminates potentially dangerous media leakage
- Tangential head: Improves product quality by more gentle treatment of product flow and reducing the pressure drop across the head
- Seal upgrades:
 - Inboard seals – reduce down time and eliminate leakage on lower bearings
 - Hard faced seals – prolong life of seal relative to standard carbon seals
 - Flushed/aseptic seals – insure aseptic product environment
 - Huhnseals – allow extended run times between inspections
- Rotor spline upgrade: Tapered spline end makes rotor insertion quicker and easier
- Rotor hold down conversion: Reduces maintenance by eliminating the need for an adjustable rotor stop
- Drive system conversion: Many different styles to accommodate specific site requirements
- Omega drive motor coupling: Easier to align, cleaner and more durable than previous Woods coupling design
- Hydraulic upgrade package: Clear reservoir and pressure gauge allows easier visual inspection of the system



Hipex Cylinder



Seal



Rotor Hold Down Conversion Kit

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