



ROTAPRO SCRAPED SURFACE HEAT EXCHANGER



The perfect heat transfer solutions for products with a high viscosity



Contact today - Efficiency tomorrow...

Skilled Danish craftsmanship

The Rotapro scraped surface heat exchanger is the result of many years of experience. At JH Staal we have been specialising in the development of quality solutions in stainless steel since 1990. Our employees are passionate about their profession, and take pride in delivering solid Danish craftsmanship. At JH Staal we are confident that our products are top of the range and the most reliable choice on the market.

The right solution for high viscosity products

The manufacturing of a wide range of products requires heating or cooling, which is complicated when dealing with high viscous products. The viscous texture of the product can result in the fouling of the process equipment. The Rotapro scraped surface heat exchanger is developed to ensure that this does not happen.

Efficient and reliable heat transfer process

By pumping the product through a cylinder, while a rotating shaft with blades continuously turns and mixes the flow, the Rotapro scraped surface heat exchanger prevents the viscous liquid from sticking to the cylinder walls. In this process the temperature of the product is simultaneously adjusted by a heating or cooling media flowing in an outer jacket of the cylinder. The Rotapro scraped surface heat exchanger is a reliable and efficient solution guaranteeing complete control over the heat transfer process.



Applications

The customised design of the Rotapro scraped surface heat exchanger makes it ideal for manufacturing many different products. The versatile solution can be applied to a variety of markets:

FOOD

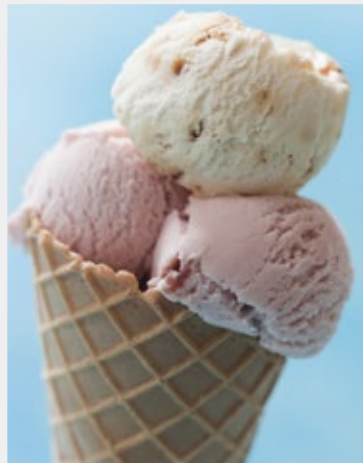
The **Rotapro** scraped surface heat exchanger is the safe choice in the production of a wide range of food products within categories like:

- Sauces
- Spices
- Soups
- Dairy products
- Fruit-based products
- Processed meats
- Prepared meals
- Confectionary
- Baby food

NON - FOOD

The **Rotapro** scraped surface heat exchanger can also be applied in different industries not related to the production of food, as for example:

- **Pet-food:** The production of nutritious food for cats, dogs and other pets made from animal by-products.
- **Cosmetics:** The manufacturing of sanitary personal care products such as lotions, creams and ointments.
- **Pharmaceutical:** Hygienic laboratory production of certain enzymes, vitamins and medicine.
- **Chemical:** Controlled production of products like paint, glue and shoe polish.



Processes

The Rotapro scraped surface heat exchanger can be part of many different production processes. These are mainly related to the heating and cooling of products with a high viscosity. However, the rotating shaft with scraper blades in the Rotapro has the added benefit of assisting in the process of mixing and unifying the product.

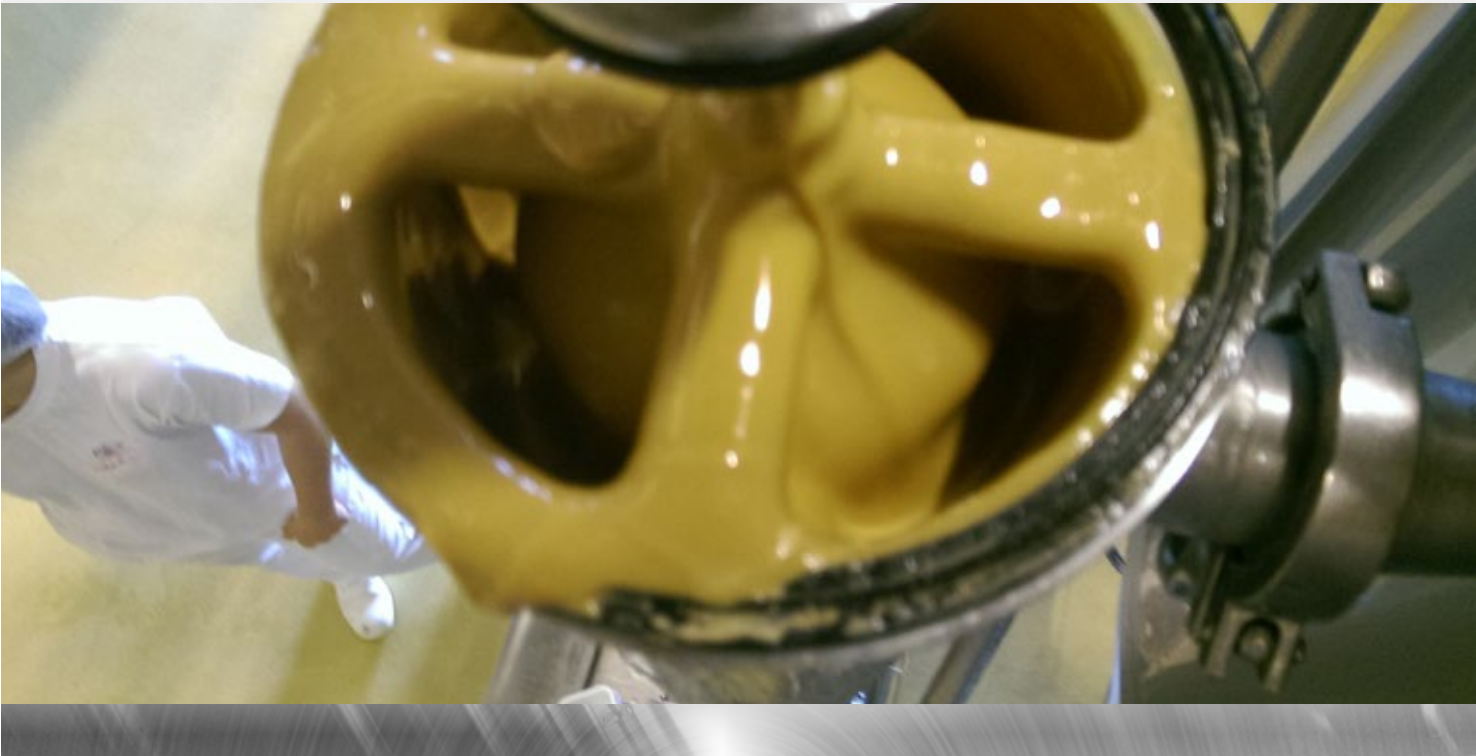
High viscosity - Plate or tubular heat exchangers can also be used for the heating or cooling process. However, when it comes to products with a high viscosity (starting at 800 centipoise) or big particles, a scraped surface heat exchanger is needed. Rotapro is therefore the most reliable way of efficiently heating and cooling a high viscous product through a process with low loss of pressure and reduced fouling.

Heating – Rotapro enables a precise heat treatment of the product. It thereby ensures that all specific requirements are met as desired for the product. Rotapro can therefore be used for pasteurisation and sterilisation.

Cooling – Rotapro can be used as an efficient way of cooling the product before the process of packaging begins. As an example Rotapro can be used for packaging hot products into plastic containers by quickly cooling the product.

Crystallisation – Rotapro can be used in the process of crystallisation. The continuing motion of the scraper blades efficiently pumps the sticky product through the cylinder.

Caramelisation – Rotapro is also effective in the process of browning and melting sugar. Once again, the specially designed scraper blades ensure that the product is easily moved through the cylinder.



Benefits

Updating your production facilities is more than just buying new process equipment. It is about finding the right partner, who can deliver a solution that adds value to your production process for several years to come.

THE RIGHT PARTNERSHIP

Choosing a new supplier is not just about considering price and technical issues. It is also about identifying the right people to partner with. At JH Staal you will find a group of enthusiastic and dedicated people with years of experience - all of which gives you:

- Reliable Danish craftsmanship of the highest quality.
- A supplier who specialises in developing flexible solution customised to meet the specific needs of each customer.
- A supplier with years of know-how who is accessible and fast in providing valuable guidance and service.
- A solution where all elements from the technical to the practical aspects have been carefully thought out.
- A simple solution that works right away with flawless start-up, production on time and no added costs.
- A solution that is installed and delivered on time.
- A solution that is long-lasting and requires a minimal of maintenance.
- All these benefits at the most competitive prices on the market!



THE RIGHT SOLUTION

The Rotapro scraped surface heat exchanger is the right solution for most manufactures of viscous products. It has many valuable benefits:

- Rotapro increases production by ensuring an efficient heat transfer.
- Rotapro lowers production cost by ensuring a minimal loss of pressure.
- Rotapro ensures a higher level of quality assurance, due to full control of the product and process.
- Rotapro enables you to make a better and smoother end product.
- Rotapro has automated CIP cleaning.
- Rotapro comply with the recommendations and requirements proposed by the FDA and EHEDG.
- Rotapro functions after the basic principle of “first-in-first-out”, which makes it ideal for the production of food products.
- Rotapro requires a minimum of space in the production facility
- Rotapro is easy to maintain, and parts can be replaced effortlessly.
- Rotapro can handle products with particles up to 30 mm including berries and nuts. A horizontal positioning is perfect for production with fragile elements.

Options

The Rotapro scraped surface heat exchanger can be manufactured and delivered in a number of different combinations and orientations, depending on the product to be treated or simply the most practical installation mode (Floor space or head space).



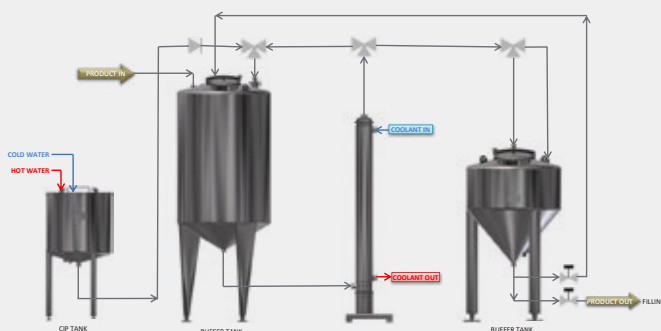
Special options

The Rotapro scraped surface heat exchanger can be delivered with special options, like water cooled or heated rotor to prevent product sticking to the rotor body and thereby causing unbalance and consequent vibrations.

Other special options include the configuration of scraper blades combined with spiral segments to provide an even distribution of the product to be processed.

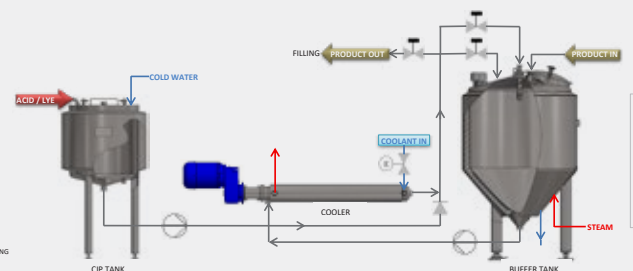
FLEXIBLE INTEGRATION

The Rotapro scraped surface heat exchanger can be integrated in any line of production. It can be used as part of a process unit relying on a series of heat exchangers including plate or tubular exchangers. The versatile Rotapro solution can be combined with an existing process plant or be part of an entire new setup.



TURN-KEY SOLUTION

At JH Staal we are specialists in the production of process facilities. We have designed and developed several turn-key process units for domestic and international customers. The Rotapro scraped surface heat exchanger is therefore not only sold as a single component. It is also offered as an integrated part of a complete turn-key process plant customised to meet any specific requirements.



Dimensions

Rotapro types	Cylinder Di [mm]	Cylinder Length [mm]	Rotor diameter [mm]	Product clearance [mm]	Rotor Speed	Motor size	Free head space for service [mm]		
V45/40	97	1.438	40	28,5	Depending on requirement and viscosity between 50 and 300 RPM	Depending on viscosity between 2,2 and 15 kW	1.600		
V45/60			60	18,5					
V45/70			70	13,5					
V70/060	150	1.641	60	45,0					1.800
V70/089		1.641	90	30,0					
V70/101		1.641	102	24,0					
V70/108		1.641	108	21,0					
V70/125		1.641	125	12,5					

DESCRIPTION

	Product side	Service side
Working temperature	Max. 170°C Min. -15°C	Max. 170°C Min. -15°C (Alternatively -25°C)
Working pressure	15 bar (optional 25 bar)	10 bar
Clamp connections	Ø51 mm/ Alternatively Ø63,5 mm	

MATERIAL

All welded parts of the Rotapro scraped surface heat exchanger exposed to product are made of EN 1.4404 steel and comply with the standard mechanical requirements. The scraper blade is made of FDA approved PEEK. As an alternative option the cylinder can be delivered in SAF 2507 or in hard chrome plated steel with stainless steel scraper blades.

NOISE LEVEL

Under normal operating conditions, the SPL at a distance of 1 meter from the unit, is measured to less than 70-dB (A).



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JH STÅLINDUSTRI

COMPETENT AND RELIABLE SUPPLIER



JH Stålinindustri has been a competent and reliable supplier since 1990. Human resources, high professionalism and efficient process is the focal point that ensures a high-quality final product.

PRODUCTS

- Stainless steel pressure vessels, process tanks, storage tanks from 10 L to 250.000 L
- Stainless steel Scraped Surface Heat Exchanger for heating and cooling of high viscosity products
- Stainless steel tubular heat exchanger
- Stainless steel agitators
- Mobile and stationary process units

For further information, please contact sales department on jhstaal@jhstaal.dk or +45 8647 9044

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www.jhstaal.dk

