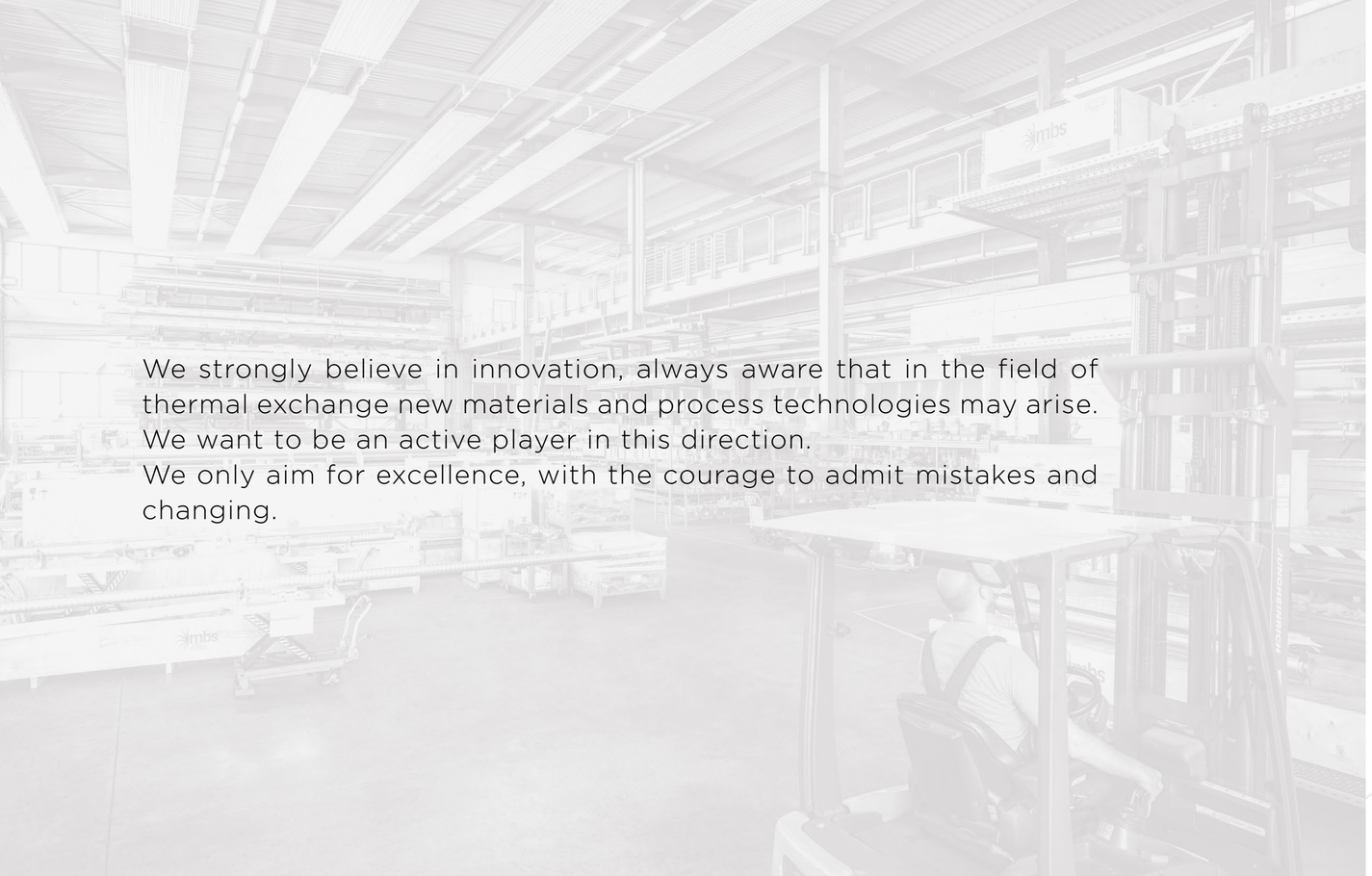
A-PF SOLUTIONS

MBS SCRAPED SURFACE HEAT EXCHANGER

HERCULES



We strongly believe in innovation, always aware that in the field of thermal exchange new materials and process technologies may arise.
We want to be an active player in this direction.
We only aim for excellence, with the courage to admit mistakes and changing.

MBS Strenght

INNOVATION

Since its beginning, MBS has believed in the importance of research and development of new technology that delivers value and worth for the customer.

QUALITY AND KNOWLEDGE

Thanks to the skilled workmanship and the expertise of its team, MBS offers high-quality products.

CUSTOMER'S SATISFACTION

MBS aims to meet the customers' needs by offering technical and commercial support to ensure customized solutions in line with key industry regulations.

PRODUCTION EFFICIENCY

MBS has introduced a LEAN production system for several years now with a view to continuous Production improvement.

Our history

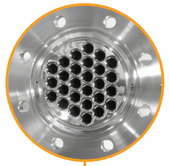


1993-95

In partnership with the **University of Parma**, the effects of pipes scraping during thermal exchange are studied and thus a computing software is developed

1995

MBS ltd birth/establishment



1999

Heat Exchanger nr. 1000

2008

Join **CSF Inox group**



2009

Production department in Godega di Sant'Urbano (Treviso)

2011

Manufacturing of the first Scraped Heat Exchanger **Hercules** series



2014

MBS obtains **ISO 9001:2015 Certification** for quality Company Organization

2016

- Opening **Flow Technology Components Mexico** (FTC Mexico) branch commercial office
- **EHEDG** certification



2018

- Parma's new head office
- **3-A** certification



2019

- Manufacturing of the first **DOUBLE** scraped surface heat exchanger "**HERCULES**" series
- **FTC DEUTCHLAND**

2024

- Opening **Flow Technology Components Usa** (FTC USA)
- Manufacturing of the first **Miniaturized** heat exchanger

THE ART OF HEAT TRANSFER

The Hercules project was born in collaboration with the University of Parma, which allowed for the determination of correct exchange coefficients, correct power absorptions and a study on materials in the presence of various tested products.



WHY CHOOSE HERCULES

In recent years, the food sector has witnessed an explosion of traditional recipes transformed into industrial productions, enriching supermarket shelves. These products often present challenges related to high viscosity, suspended particles and a tendency to adhere to exchange surfaces.

In these cases, HERCULES offers an effective solution to transition from a ‘batch’ process to a ‘continuous’ one.



SAUCES

- KETCHUP
- MAYONNAISE
- TOMATO SAUCES
- TOMATO PASTE
- HUMMUS
- SESAME PASTE



CHEESE

- RICOTTA
- CREAM CHEESE
- COTTAGE CHEESE
- SOFT CHEESE
- CONDENSED MILK



PUREE & CONCENTRATES

- VEGETABLE CONCENTRATES
- PISTACHIO PASTE
- NATURAL FRUIT PUREE
- CONCENTRATE FRUIT PUREE
- DATE PAST
- FRUIT MASS



PROCESSED MEET

- PORK LARD
- MINCED MEAT
- CHOPPED MEAT
- PET FOOD
- FISH PASTE
- LARVA PUREE
- INSECT PUREE



SUGAR & CHOCOLATE

- SUGAR MASS
- FONDANT
- CHOCOLATE
- WAFER FILLING CREAM
- FRUITMASS
- CARAMEL
- TOPPING
- JAM
- JELLY
- HONEY
- DESSERT CREAM



CHEMICAL & PHARMA INDUSTRY

- PARAFFIN
- GEL
- SOAP PASTE
- COSMETICS
- OILS

HOW IT WORKS

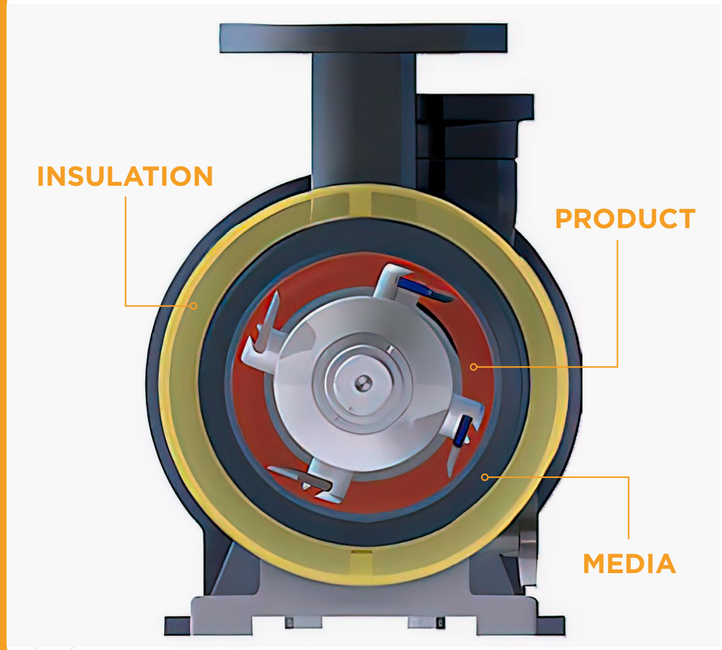
1 - The product to be processed enters the exchange cylinder through a screw designed to accommodate its change of trajectory.

2 - Simultaneously, the thermal fluid flows in countercurrent in the service section.

3 - Inside the exchange cylinder, there is a scraping shaft whose task is to keep the product mixed and prevent it from adhering to the wall.

4 - The rotation speed of the scraping shaft is determined by the characteristics of the product.

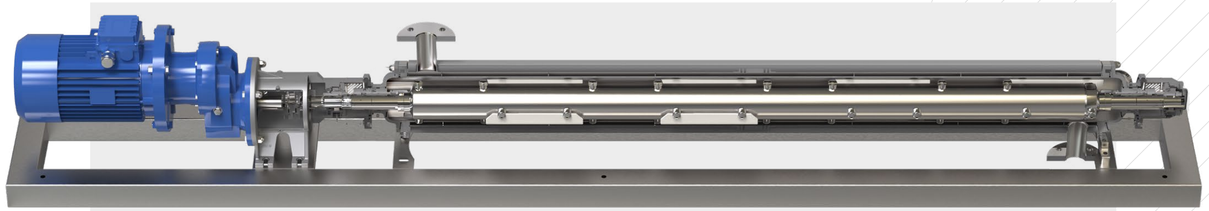
5 - The scraping blades are pressed against the exchange surface thanks to the rotation of the shaft and the fluid dynamic pressure of the product itself.



WHAT ARE THE ADVANTAGES

- MAXIMUM HYGIENE
- TANGENTIAL INLET
- SIMPLICITY OF COMPONENTS
- EASE OF MAINTENANCE
- DETECTABLE BLADES





H05, H10, H15

HOW IT WORKS

The Double Surface Scraped Heat Exchanger (DSSHE) is an advanced heat exchange device capable of maximizing the efficiency of heat transfer between the product and the service fluid, ensuring controlled and uniform temperature in industrial processes. Its operation is as follows:

1 - PRODUCT INLET
The product to be treated enters the thermal exchange cylinder from below through a tangential inlet screw. This design ensures a gentle flow of the product and prevents unwanted turbulence.

2 - SERVICE FLUID FLOW
The service fluid flows in a countercurrent manner inside the innermost thermal exchange cylinder and outside the outermost cylinder. This countercurrent flow maximizes the efficiency of heat transfer.

3 - SCRAPING BLADES
Inside the annular space where the product flows, scraping blades are installed on a rotating cage. Their rotation speed is adapted to the type of product being processed. The blades prevent the product from adhering to the inner thermal exchange wall and ensure good product mixing.

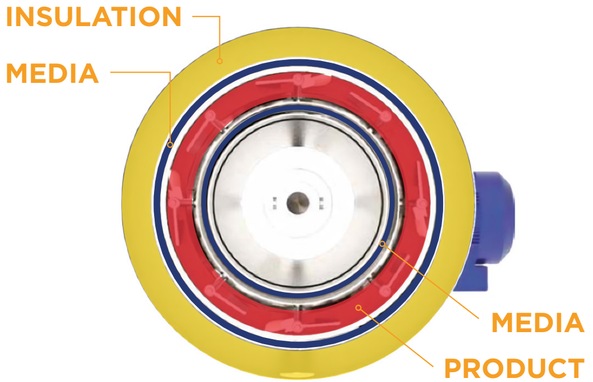
4 - CLEANING
After completing the production process, the remaining product inside the cylinder can be fully drained, and the heat exchanger can be cleaned using an on-site cleaning system, ensuring..."

H30, H45



ADVANTAGES

- VERTICAL INSTALLATION
- EASE OF MAINTENANCE
- HYGIENE
- TANGENTIAL PRODUCT INLET/OUTLET
- ASEPTIC DESIGN
- DETECTABLE BLADES
- FULLY DRAINABLE





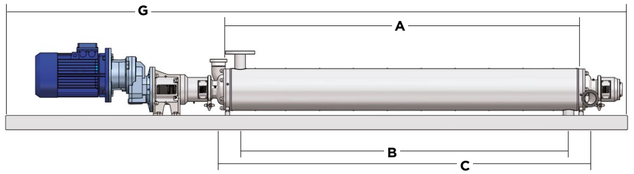
HERCULES

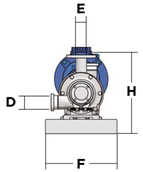
The Hercules range includes two main lines: the H05, H10, and H15 series with single scraped walls, excellent for exchange surfaces from 0.5 to 1.5 m2. Normally installed horizontally, these models offer flexibility as they can also be mounted vertically. Connectable in series to achieve high thermal gradients, they are ideal for smaller or specialized productions, requiring efficiency in limited spaces.

For larger needs, we offer the H30 and H45 models with double scraped walls, designed to handle larger exchange surfaces. They provide significant exchange surface in a limited space and can also be connected in series for optimal performance. They are the perfect choice for large-scale productions that require high thermal efficiency.

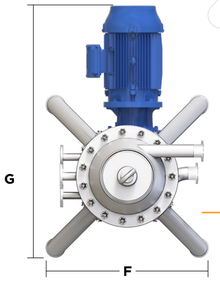
FEATURES		Model				
		H05	H10	H15	H30	H45
Cylinder materials	316 L	•	•	•	•	•
	Super-duplex	•	•	•	•	•
	304				•	•
Product side	15 bar				•	•
	19.5 bar	•	•	•		
	-30/+180°C	•	•	•	•	•
Service side	8 bar				•	•
	10 bar	•	•	•		
	-30/+180°C	•	•	•	•	•
Gasket and oring materials	EPDM	•	•	•	•	•
	NBR	•	•	•		
	FKM	•	•	•	•	•
	silicone	•	•	•	•	•
Mechanical seals	double flushed	•	•	•	•	•
	single	•	•	•		
	extreme knife edge	•	•	•		
	lip seal flushed	•	•	•		
Blades	PPS	•	•	•	•	•
	PEEK	•	•	•	•	•
	detectable PEEK	•	•	•	•	•
Gearbox	1:6 to 1:16	•	•	•		
	1:15 to 1:22				•	•
Power	5.5 to 9.2 kW	•	•	•		
	15 to 22 kW				•	•
Max particle size	17 mm				•	•
	24 mm	•	•	•		
	38 mm	•	•	•		
Certifications	ATEX	•	•	•		
	U-stamp		•			

Model	A [mm]	B [mm]	C [mm]	Exchange surface [m²]	D	E	F [mm]	G [mm]	H [mm]	Product side volume [L]	Shell side volume [L]	Weight [Kg]
H05	1000	840	1082	0,5	DIN11864-2 DN65	EN 1092-1 DN 50 PN 16	400	2350	482	9,5	6,35	270
H10	2000	1840	2082	1,0	DIN 11851 DN 65 F CLAMP 3"			3350		18,6	12,8	341
H15	3000	2840	3082	1,5				4350		28	19,04	410
H30	1370	1138	1775	3,2	DIN 11864-2 DN 76,1	EN 1092-1 DN 50/40 PN 16	1000	1500	2380	81	71	1040
H45	1900	1666	2312	4,5					2920	103	103	1400

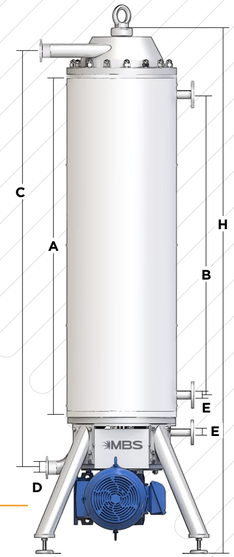




H05-H10-H15



H30-H45



PRODUCT RANGE AND COLLABORATIONS

HEAT EXCHANGER

Corrugation is a specific process applied to a smooth tube in order to achieve an internal surface capable of creating greater thermo-fluid dynamic turbulence in the fluid flow.

MLW
The multitube heat exchanger MLW serie is designed to meet the hygienic requirements of the food industry.

MLP
The multitube heat exchanger MLP serie is designed to meet the most hygienic and secure requirements of the pharmaceutical industry.

MLI
The multitube heat exchanger MLI serie is designed to meet the hygienic requirements of industrial sector.

MLM
The multi-passage heat exchanger MLM serie is designed to meet the requirements of industrial sector.

MNW
The tube in tube heat exchanger MNW serie is designed to meet the hygienic requirements of the food industry.

MLC
The annular heat exchanger MLC serie is designed to meet the hygienic requirements of the food industry.

COLLABORATIONS

For years, MBS has had a fruitful research collaboration with the University of Parma, which has produced mathematical validations regarding the increased efficiency of heat exchange, both for single and double corrugation, and is continuing on new significant projects.

siteia parma

UNIVERSITÀ DI PARMA



NOTES

A-PF SOLUTIONS

+32 (0)64 55 77 85 www.apfs.be Quality first

MBS

MBS S.r.l.
HQ: Via Gian Pietro Sardi 24, 43124 Parma Italy
FACTORY: Via degli Olmi 6/8, 31010 Godega di Sant'Urbano (TV) Italy
Tel: +39 0521 3971
mbs@mbs-europe.com - **www.mbs-europe.com**

CSFinoxGroup
FLOW TECHNOLOGY COMPONENTS