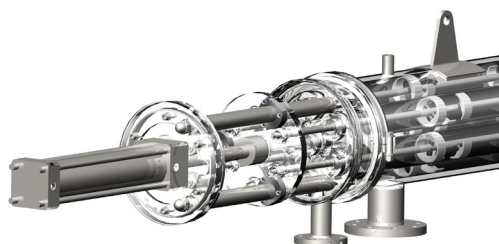


## RECIPROCATING SCRAPED SURFACE HEAT EXCHANGERS

### HRS UNICUS SERIES - FOOD



The HRS Unicus Series is a scraped surface heat exchanger ideal for food and hygienic applications. Based on the traditional shell and tube heat exchanger, the Unicus has scraping elements inside each interior tube which move back and forth by hydraulic action.

The effect of scraping is twofold, it ensures potential fouling is minimised by keeping the tube wall clean whilst enhancing turbulence and increasing the heat transfer rate. This patented design makes the Unicus an ideal heat exchanger for high fouling and viscous fluids.

## TECHNICAL DATA

### APPLICATIONS

Heating/Cooling  
Pasteurisation  
Crystallisation

### SURFACE FINISH

External: Polished  
Internal: <0.8µ

### STANDARD MATERIALS OF CONSTRUCTION

Service Side: AISI 304 Stainless Steel  
Product Side: AISI 316L Stainless Steel  
*Other materials option available*

### STANDARD DESIGN CONDITIONS

Service Side: 10 bar/185°C  
Product Side: 16 bar/185°C

### STANDARD CONNECTIONS

Service Side: Flange  
Product Side: Clamp  
*All flange & clamp types available*

### DESIGN CODE AND COMPLIANCE

PD 5500, PED 2014/68/EU, 2006/42/CE, ASME  
FDA, 3A, TR CU 032, DOSH Compliant

### RANGE

MODELS	LENGTHS (m)	SURFACE AREA (m <sup>2</sup> )	SERVICE SIDE CONNECTION	PRODUCT SIDE CONNECTION	SERVICE SIDE VOLUME (l)	PRODUCT SIDE VOLUME (l)	POWER * CONSUMPTION (kW)
U 1/I 89/60	1 - 6	1.1	DN40	DN50	16.8	14.9	1.5**
U 1/I 104/76	1 - 6	1.4	DN40	DN65	19.9	24.4	1.5**
U 3/X 154/60	1 - 6	3.4	DN50	DN50	54.6	44.8	3**
U 4/X 219/76	1 - 6	5.8	DN80	DN65	104.6	98.3	5.5**
U 7/X 219/60	1 - 6	8	DN80	DN50	94.1	104.6	5.5**
U 7/X 273/76	1 - 6	10.1	DN80	DN65	144.7	172	7.5**

Unicus evaporator models can be supplied with areas up to 180m<sup>2</sup>.

The surface area and volumes shown are for 6m length models.

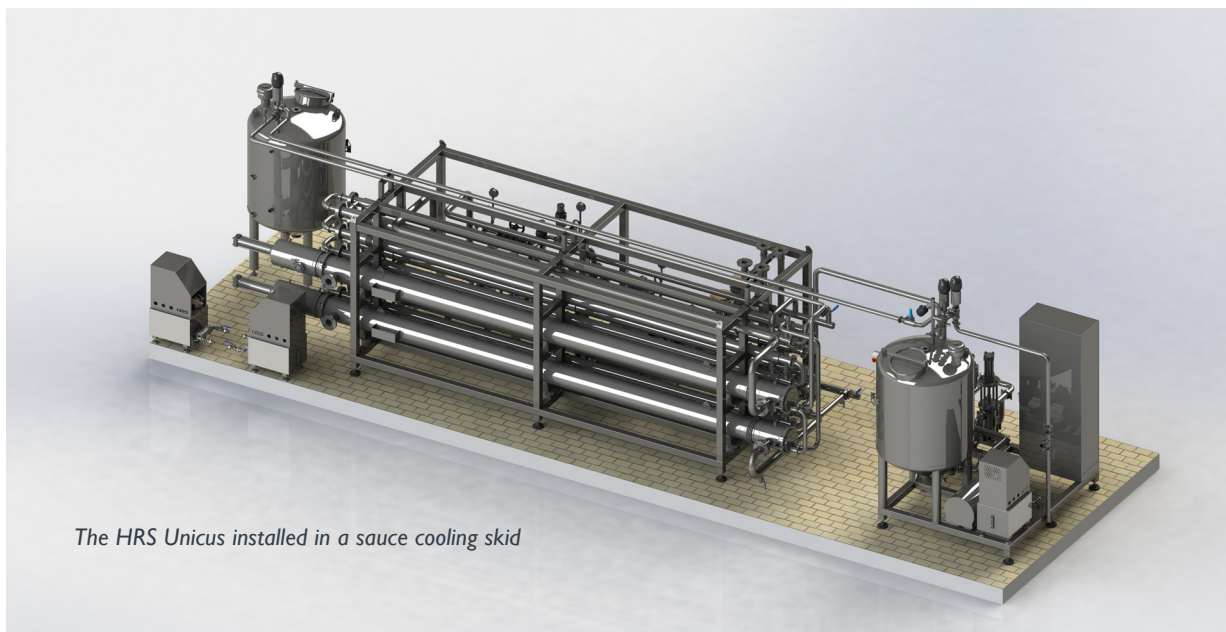
\*The power consumption is for a stroke rate of the scraper bar around 10-14 cycles/minute.

\*\*These models can be supplied with a pneumatic cylinder instead of a hydraulic cylinder. The required air pressure is a minimum of 8 bar.

ASME version has matt external finish.

## RECIPROCATING SCRAPED SURFACE HEAT EXCHANGERS

### HRS UNICUS SERIES - FOOD



*The HRS Unicus installed in a sauce cooling skid*

#### ELEMENTS OF THE UNICUS

Hydraulic Cylinder and Power Pack  
Separation Chamber  
Heat Exchanger

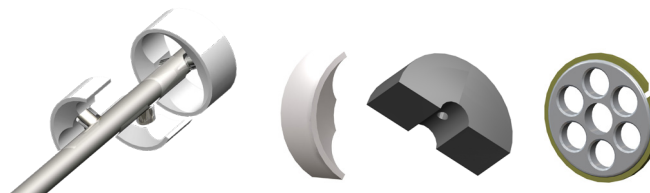
Smaller models of Unicus can be supplied with a pneumatic cylinder

Unit can be mounted in a frame or skid

#### SCRAPED SURFACE

The scraping system consists of a stainless steel rod to which the scraping elements are fitted. Various types of scrapers are available.

The optimal scraper is selected based on the application. The Unicus' unique design enables use with fluids containing large particulates.



#### PRODUCTS

DAIRY:	Cheese, yoghurt, cream, whey, concentrate, ice cream, condensed milk
FRUITS:	Juice concentrate, fruit purée, diced fruit
VEGETABLES:	Processed vegetables, tomato concentrate
CONVENIENCE FOOD:	Eggs, mashed potato, ketchup, mayonnaise, baby food, spreads, fats, oils
PROTEINS:	Visceras, meat slurry, MDM, meat stuffing, minced meat, pet food
CONFECTIONARY:	Chocolate, pie filling, paste, marmalade, syrup, gelatine, starch, butter
BEVERAGES:	Coffee extract, yeast-malt extracts
COSMETICS:	Lotion, cream, gel