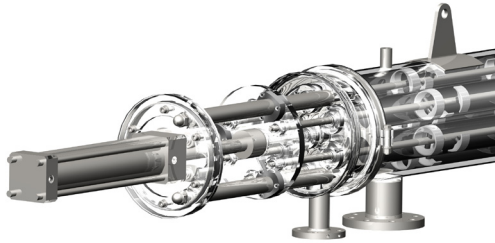




RECIPROCATING SCRAPED SURFACE HEAT EXCHANGERS

HRS UNICUS SERIES - FOOD



The HRS Unicus Series is a scraped surface heat exchanger ideal for food and sanitary 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 minimized 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
Pasteurization
Crystallization

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: 147 PSI/365°F
Product Side: 232 PSI/365°F

STANDARD CONNECTIONS

Service Side: Clamp
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 (ft)	SURFACE AREA (ft ²)	SERVICE SIDE CONNECTION	PRODUCT SIDE CONNECTION	VOLUME SERVICE (gal)	VOLUME PRODUCT (gal)	POWER * CONSUMPTION (hp)
U 1/I 89/60	3 - 20	12	1.5"	2"	4	4	2**
U 1/I 104/76	3 - 20	15	1.5"	2.5"	5	6	2**
U 3/X 154/60	3 - 20	37	2"	2"	14	12	4**
U 4/X 219/76	3 - 20	62	3"	2.5"	28	26	7**
U 7/X 219/76	3 - 20	86	3"	2"	25	28	7**
U 7/X 273/76	3 - 20	109	3"	2.5"	38	45	10**

Unicus evaporator models can be supplied with areas up to 1290ft².

The surface area and volumes shown are for 20ft length models.

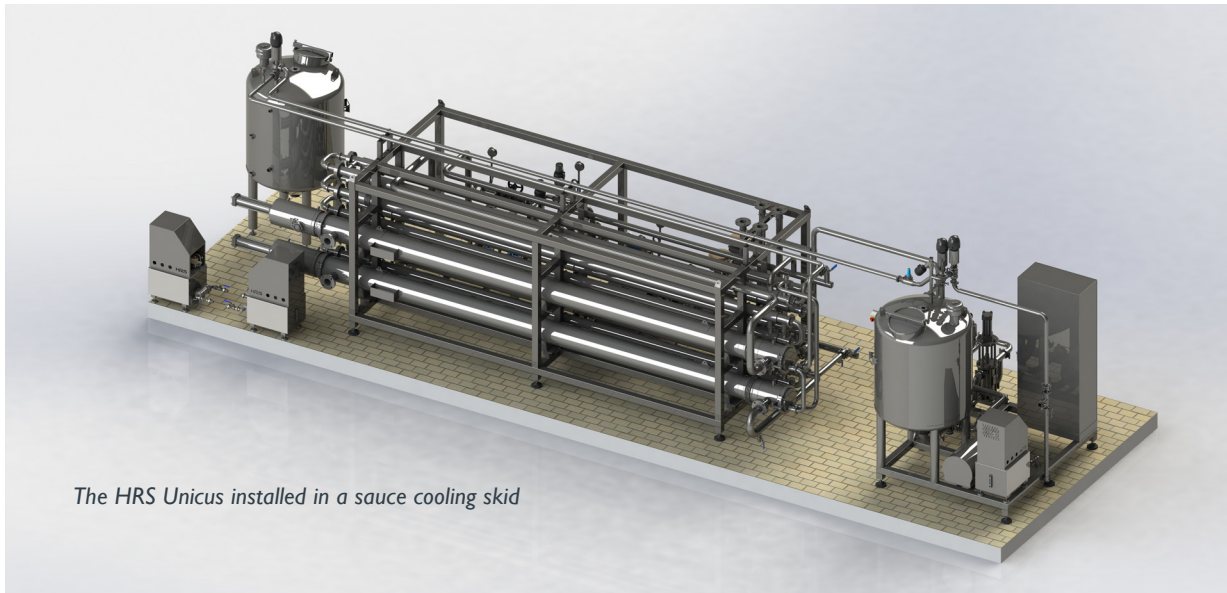
*The power consumption is for a stroke rate of the scraper bar around 10-14 cycles/minute.

** These models can be supplied with a pneumatic cylinder instead of a hydraulic cylinder. The required air pressure is a minimum of 116 PSI.

ASME version has matt external finish.

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The HRS Unicus installed in a sauce cooling skid

ELEMENTS OF THE UNICUS

Hydraulic Cylinder and Power Pack
Separation Chamber
Heat Exchanger

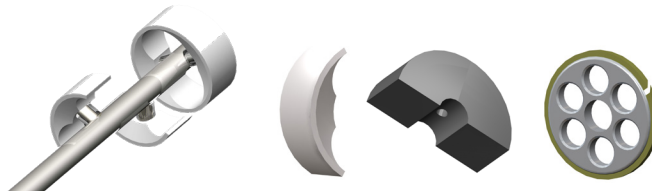
Smaller models of Unicus can be supplied with a pneumatic cylinder

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