MX Series

The latest technology in corrugated tubular heat exchanger

HRS process technology

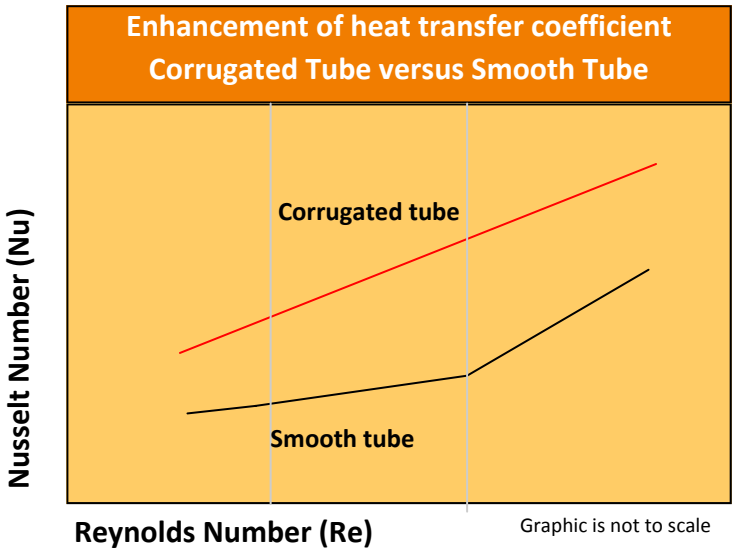
MX series - the latest technology in corrugated tubular heat exchanger

The MX series is the latest technology in corrugated tubular heat exchanger. We are working closely with technical collaboration of HRS International Ltd (UK) and HRS Spiratube SL (Spain) who have been leaders in this technology for more than 25 years worldwide.

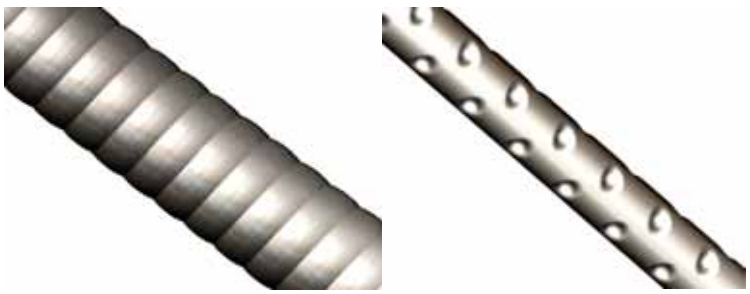
Efficient and effective

MX series is made with corrugated tubes which induce turbulence in the fluid . This turbulence ensures higher Reynolds numbers even at low levels of velocity. This results in significantly better thermal performance than conventional heat exchangers using smooth tubes.

The unique corrugation patterns in the MX series offer many advantages over smooth tube or plate type thermal technology.



Two basic corrugation patterns are used depending on the properties of the fluid. A hard corrugation surface is used for low to medium viscosity liquids, and a dimple corrugation surface is used for Reynolds numbers less than 1,000.



Meeting industry standards

The technology is manufactured to the standards for your industry.

Hardworking and adaptable

MX series is manufactured from two types of Stainless Steel for maximum durability. The product side is made of AISI 316L and the service side is made of AISI 304.

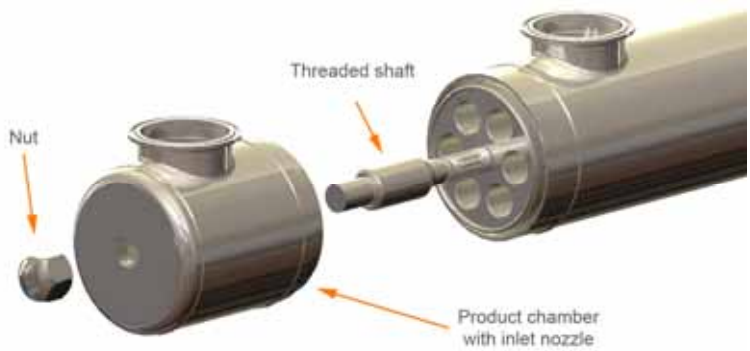
Other materials such as SMO 254, SAF 2507, Titanium, and others may be used depending on the application.

The standard maximum working pressure for the shell and product side is 250 PSI and the design temperature is 300ºF. However, your heat exchanger can be custom designed for specific requirements.

Features:

The new patented header allows to build **compact units.** More heat transfer area in less space, **saving footprint** on the plant floor. **Increase capacity** quickly without major changes. **NO Maintenance.** New frame design makes a **less expensive** units. New baffle design: better mixing, more turbulence, better heat transfer, more efficiency, it makes smaller designs and more sanitary. It has the advantageous design of a **removable tube bundle**, allowing for complete inspection of the shell side and tube bundle.

Different inner tubes diameters and tube bundle configuration on the same shell diameter. **Adding flexibility.** Elimination of the expansion joints **(no bellows)** in our new design requested by our customers

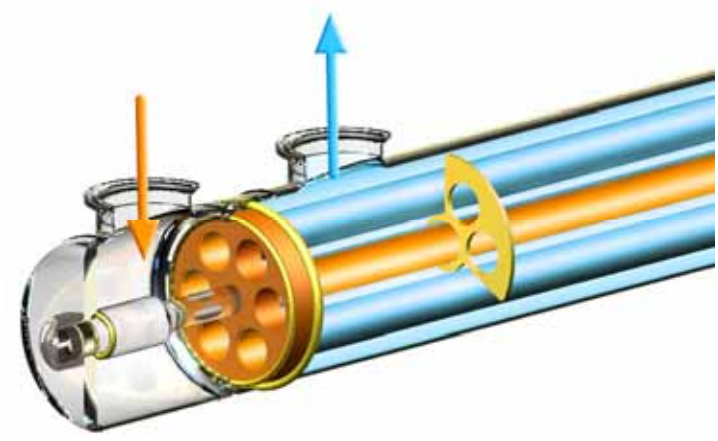


SIMPLE SOLUTIONS FOR COMPLEX HEAT TRANSFER APPLICATIONS

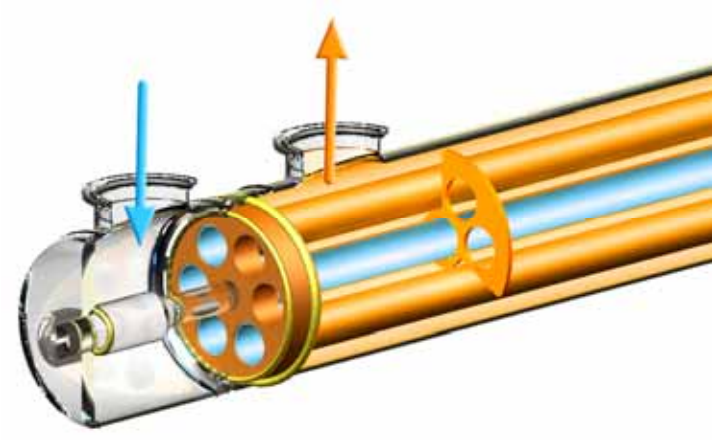
Flexible and compact

- **Low, medium and high viscous products, particles and fibrous applications**
- **High temperature, high pressure and UHT process**
- **Less pressure drop and more efficient than triple tube for viscous products running through the shell**
- **Direct product to product energy recovery, more efficient than indirect heat recovery.**

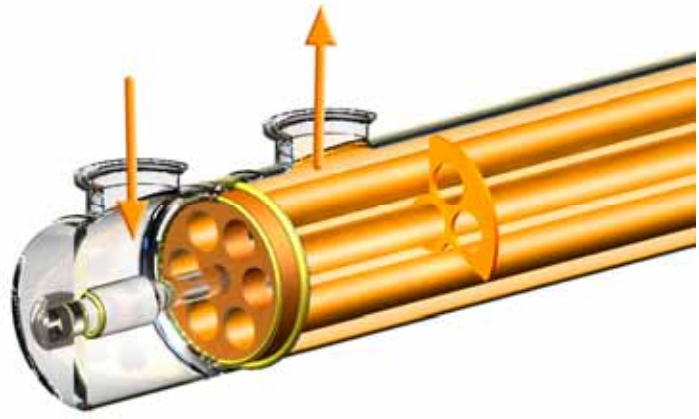
Sanitary processing on the tube side:
Industrial or food product on tube side, service media on shell side. Light to medium viscosity.



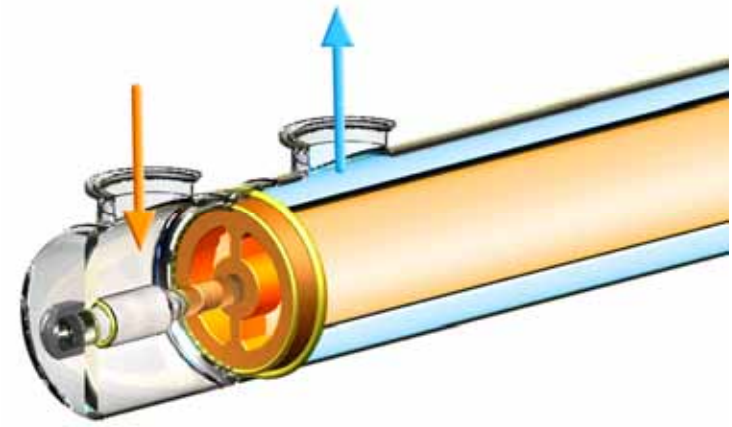
Sanitary processing on the shell side:
Industrial or food product on shell side, service media on tube side. High viscosity.



Sanitary processing tube & shell side:
Product to product regeneration. Reduces the sizes of pasteurizers and sterilizers dramatically.



Sanitary processing on the tube side:
Monotube applications for particulate products



Applications

fruit and vegetable juice and purée * juice concentrates * pulpy juice * juice with fibres * citrus pulp * tomato paste * tomato based products * milk (UHT) * flavoured milk * cream * concentrated milk * ice cream mix * whey * soy & rice milk drinks * coffee creamers * yogurt * liquid egg * pasta sauce * sauces * BBQ sauce * ketchup * soups * gravies * starch slurries * desserts * baby products * green tea * coffee solutions * isotonic beverages * sports drinks * brewery wort * sugar solutions * wine * wine must * pressed grapes * fluids with particles * vegetable oil * CIP heating * water/steam *and many other products

high temperature * high pressure * UHT process * aseptic * pasteurization * hot fill * heating * cooling * particles

SIMPLE SOLUTIONS FOR COMPLEX HEAT TRANSFER APPLICATIONS

Basic models	Lengths (ft)	Surface area (sq ft) (20 ft lengths)	Shell side connec-tion (inches)	Tube side connec-tion (inches)	Max flow shell (GPM)	Max flow tubes (GPM)	Volume shell side (Gal.) (10 ft / 20 ft)	Volume shell side (Gal.) (10 ft / 20 ft)
3.5" (89 mm) shell:								
MX 6 89/19	10/20	2.2	2	2	90	60	2.7/5.3	1.3/2.3
MX 8 89/16	10/20	2.4	2	2	90	57	2.8/5.6	1.2/2.2
4.5" (114 mm) shell:								
MX 6 114/25	10/20	2.8	2.5	2.5	160	115	4.5/5.6	2.5/4.4
MX 18 114/16	10/20	5.4	2.5	2.5	160	125	4.2/8.5	2.7/4.8
5.5 (141 mm) shell:								
MX 6 141/33	10/20	3.8	3	3	242	205	6.3/12.6	4.4/7.9
MX 18 141/19	10/20	6.5	3	3	242	185	6.9/13.9	4.0/7.1
MX 30 141/16	10/20	9.0	3	3	242	215	6.3/12.6	4.6/8.3
6.5" (168 mm) shell:								
MX 6 168/42	10/20	4.8	4	4	370	340	8.4/16.8	7.3/13.1
MX 30 168/19	10/20	10.8	4	4	370	305	9.2/18.4	6.8/11.9
MX 36 168/16	10/20	10.9	4	4	370	260	10.3/20.6	6.0/10.3

Max flow rates are calculated with water

Product wetted parts for food applications: roughness < 32 Ra (0.8 microns)

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