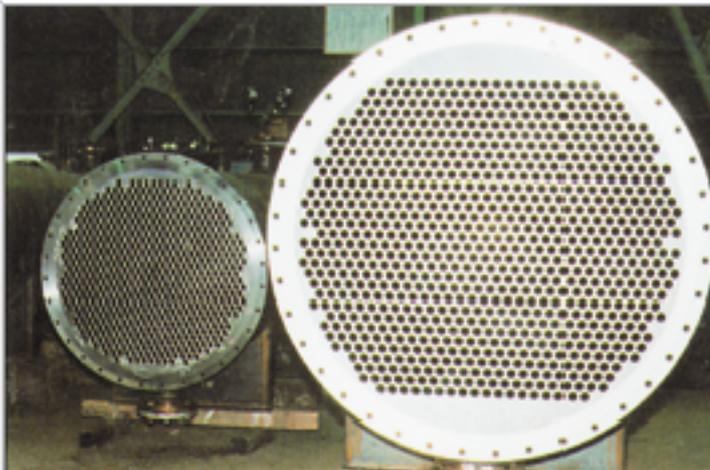
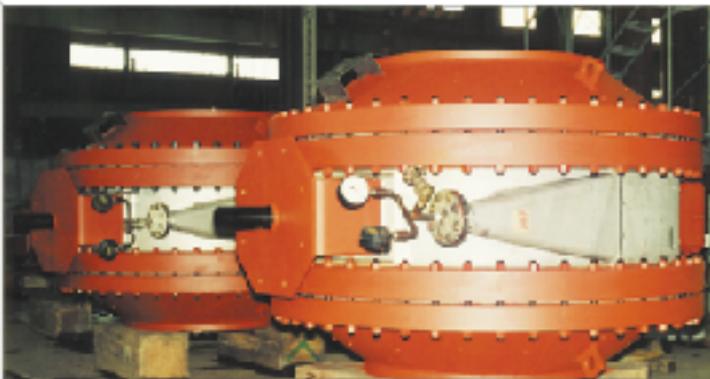


# ***KUROSE***



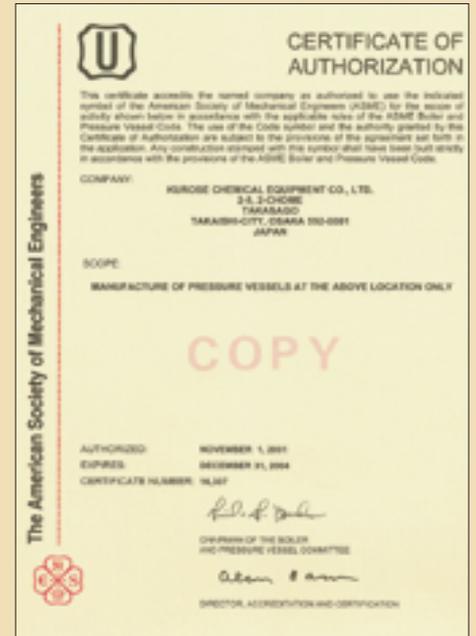
Kurose Chemical Equipment Co., Ltd. was established in 1925 and has become one of the leading companies manufacturing pressure vessels made of special corrosion-resistant materials.

Especially in high performance SPIRAL HEAT EXCHANGERS, we can be proud of excellent production scale and fine reputation for producing many satisfactory results.

As for quality assurance, we were authorized by ASME to use "U"STAMP in 1980 and obtained the seventh renewal authorization by ASME in 2001.

Additionally, we were granted the Safety Quality License for Import Boiler and Pressure Vessel by People's Republic of China in 1998.

We are continuously making efforts in order to improve the reliability of our products.



PROFILE	1
HISTORY	1
KUROSE SPIRAL HEAT EXCHANGER	2~3
MINI-SPIRAL	4
HIGH GRADE ALLOY	5

## PROFILE

### Kurose Chemical Equipment Co., Ltd.

Established : August 1, 1925

Capital Funds : ¥90,000,000

Staff : 100

Certification :

Authorized factory for  
ASME "U" stamp

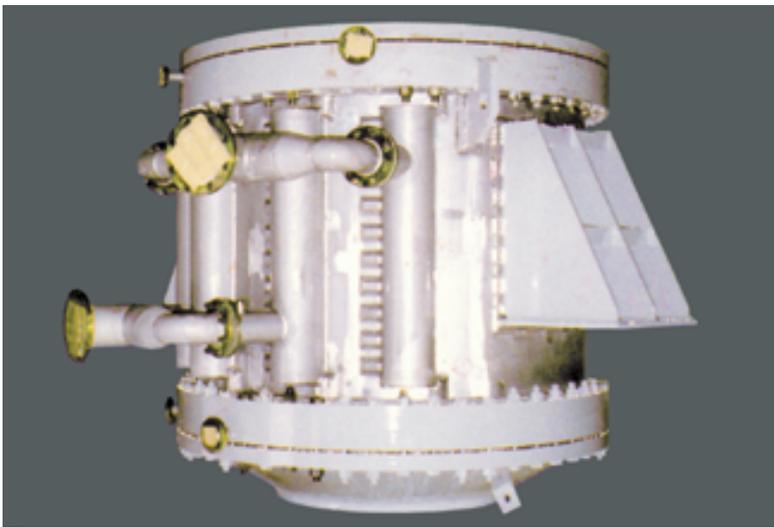
Authorized factory for  
Safety Quality License for Import Boiler  
and Pressure Vessel by People's Republic of China

Authorized factory for  
1st Class Boiler and Pressure Vessels

Authorized Factory for  
High Pressure Gas facilities

## HISTORY

- 1925 ● Established to manufacture chemical equipment
- 1952 ● Expanded the factory  
Started manufacturing of Titanium vessel
- 1955 ● Open Tokyo Branch
- 1956 ● Supplied the reactor made of Hastelloy®
- 1961 ● Concluded a technical license agreement for  
SPIRAL Heat Exchanger with  
AB Rosenblads patenter of Sweden
- 1976 ● Concluded a technical license agreement for  
Pressure Plate Filter with  
BHS-Bayerische Berg-Hutten-und Salzwerke
- 1977 ● Authorized by ASME to use "U" Stamp in Osaka City
- 1980 ● Factory removed to Takaishi City Authorized by  
ASME to use "U" Stamp
- 1998 ● Authorized by People's Republic of China for  
Safety Quality License for Import Boilers and  
Pressure Vessel
- 2001 ● The Seventh Renewal of the ASME "U" Stamp



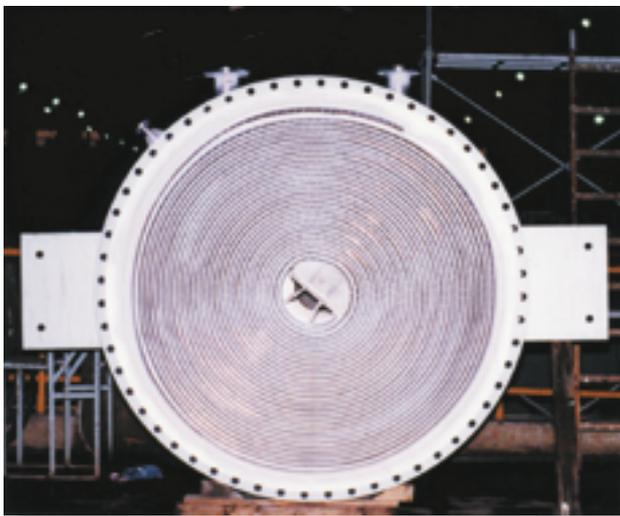
# KUROSE SPIRAL HEAT EXCHANGER

KUROSE Spiral Heat Exchanger is known as the excellent heating device for energy saving as compared to the conventional heat exchanger.

Kurose Chemical Equipment Co., Ltd. is the leading company of Spiral Heat Exchanger.

Our products have been useful for many chemical plants and many ecology plants in the world.

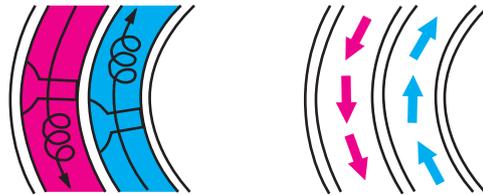
KUROSE Spiral Heat Exchanger is far more compact and easy installation than the tubular heat exchanger.



## ADVANTAGES

### High Overall Heat Transfer Coefficient

Spiral flow passage easily creates turbulent flow. Optimum flow speed can be set by selecting the most suitable spiral channel, which permits remarkably high heat transfer.



### Virtually dirt-free

The rotary current of spiral heat exchanger possesses the property of scraping off and spilling the sludge (solids).

Even though scale adhere to it, when the cross-section of the adherent part becomes smaller, the flowing speed would turn quick and bring the function of auto-cleaning into play owing to the one-way flows. Thereafter it is unnecessary to dismantle for cleaning.



### Efficient use of Temperature Difference

The fully countercurrent system (TYPE-1) is able to exchange heat even when temperature difference is very low and is therefore the optimum system for saving energy.



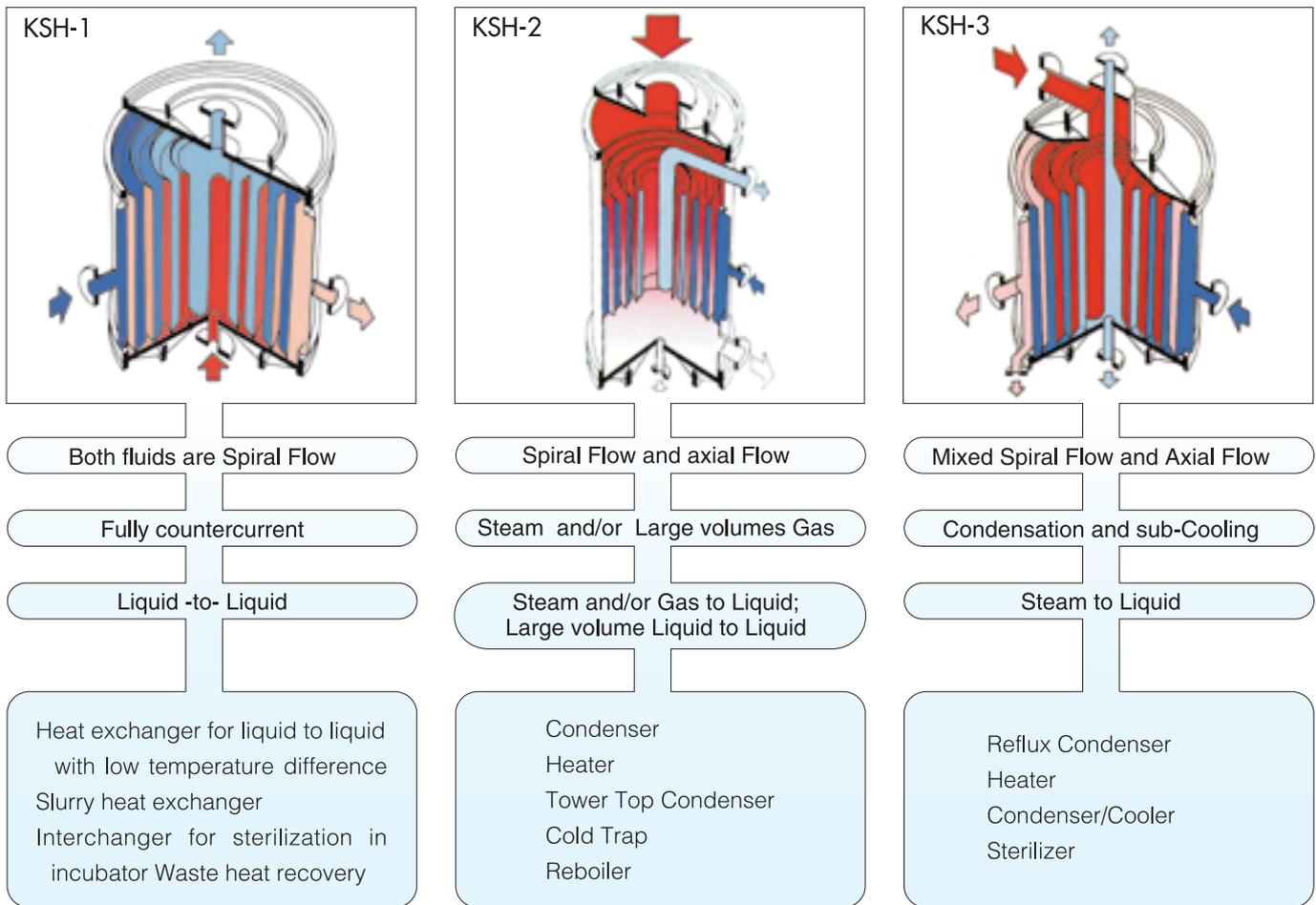
### Easy Maintenance

The inside is easily accessed and checked, simply by removing the covers on both sides.

### Space-saving

Its high-performance structure results in very compact equipment.

**TYPE**



**TECHNOLOGY DATA**

Overall heat-transfer coefficient : 1000~2500 kcal/m<sup>2</sup>hr°C

Water – Water

Max. Operating Temperature : -196~450°C

Max. Operating Pressure : 25 kgf/cm<sup>2</sup>G

Max. Area : 550 m<sup>2</sup>

Material :  
 Stainless Steel(Include Duplex)  
 Titanium, Zirconium  
 Hastelloy®  
 Nickel  
 Monel  
 High Alloy Steel

Design Code :  
 ASME-U  
 High Pressure Gas Safety Law  
 Pressure Vessel Construction Code



Hastelloy® is the trade name of Haynes International Inc.

# MINI-SPIRAL

Super Compact Spiral Heat Exchanger

High performance heat exchanger can be used just like VALVE FEELING.

Our MINI- SPIRAL has been achieved to most compact, and the structure is not necessary for this PORTABLE MINI- SPIRAL.

## ADVANTAGES

Most Compact and high performance  
 Made of all Stainless Steel  
 Quick delivery

## MATERIAL

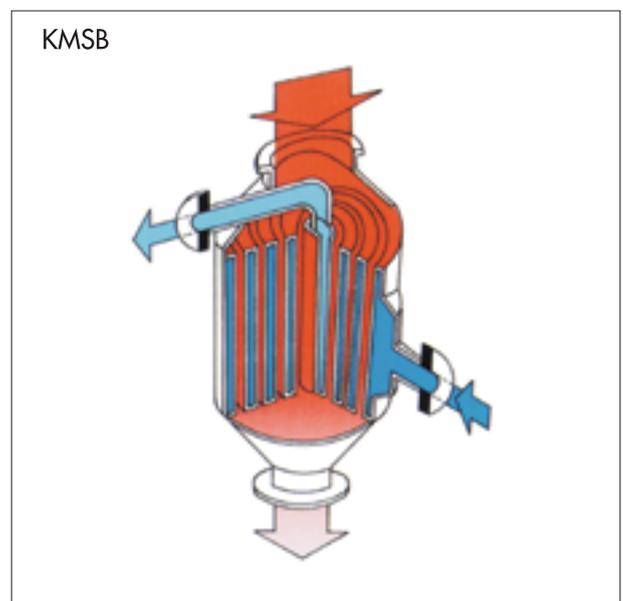
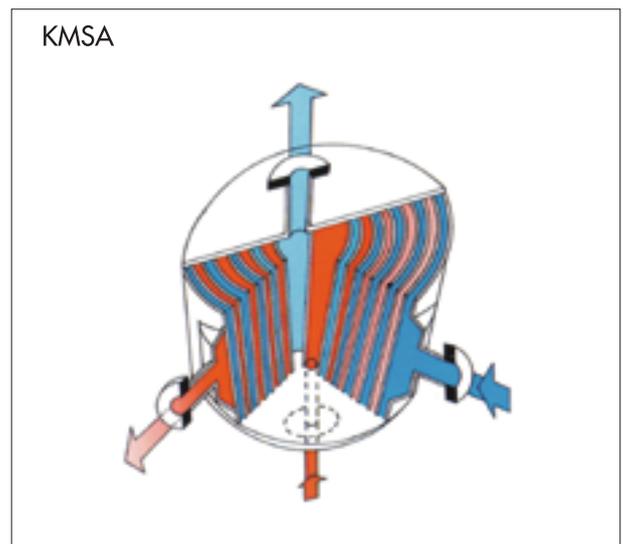
Standard: SUS 316  
 Specially, for High Pressure applications and for high grade materials such Titanium, Hastelloy®, Nickel, etc can be supplied.

## APPLICATIONS

For Laboratories or Pilot Plants  
 Vent Condensers, Sampling Coolers  
 For Air Conditioners (heaters, humidifiers)  
 Solvent Recovery  
 Temperature control

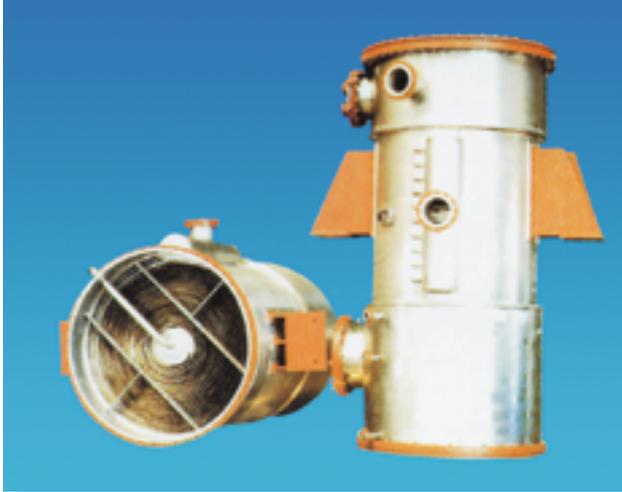
## STANDARD

Type	KMSA		KMSB	
	03	06	03	06
Heat Exchange Area	0.3m <sup>2</sup>	0.6m <sup>2</sup>	0.3m <sup>2</sup>	0.6m <sup>2</sup>
Material	SUS316			
Max.operating press.	0.6 MpaG			
Max.operating temp.	185 °C			
Nozzle	Spiral	All 15A JIS10K FL	15A JIS10K FL	
	Axial		40A	50A
			JIS10K FL	
Plate Width	100 mm			
Empty Weight	8 kg	11 kg	10 kg	15 kg



## HIGH GRADE ALLOY

In 1955, KUROSE Chemical Equipment Co., Ltd. started to design and fabricate HIGH GRADE ALLOY (Titanium, Hastelloy®, Monel, Pure Nickel, Duplex and their clad steel) earlier than other companies and is authorized by Japanese Labor Safety Health Law.



### TITANIUM

Spiral Heat Exchanger  
Type KSH-2

Area 170m<sup>2</sup>      130m<sup>3</sup>



### HASTELLOY®

Reactor



### MONEL

Column



### PURE NICKEL

Spiral Heat Exchanger  
Type KSH-1

## INQUIRIES

Please send FAX or E-mail, using bellow Inquiry Format for Heat exchanger.

Your Company Name					
Section of Contact Person					
Contact Person					
Phone		FAX		E-mail	

		Hot Side	Cold Side
Product Name Use			
1	Fluid Name (composition)		
2	Flow Capacity		
3	Inlet Temperature		
4	Outlet Temperature		
5	Heat Exchanged		
6	Inlet Pressure		
7	Allowance Pressure Drop		
8	Maximum Operating Press.		
9	Maximum Operating Temp.		
10	Materials		
11	Density		
12	Specific Heat		
13	Thermal Conductivity		
14	Viscosity		
15	Latent Heat		
16	Fouling Factor		
17	Others		

If vapor contains inert gas, please clarify its composition.

### **KUROSE CHEMICAL EQUIPMENT CO., LTD.**

URL:<http://www.kurose.co.jp>

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