



PRODUCT CATALOGUE  
HEAT EXCHANGERS

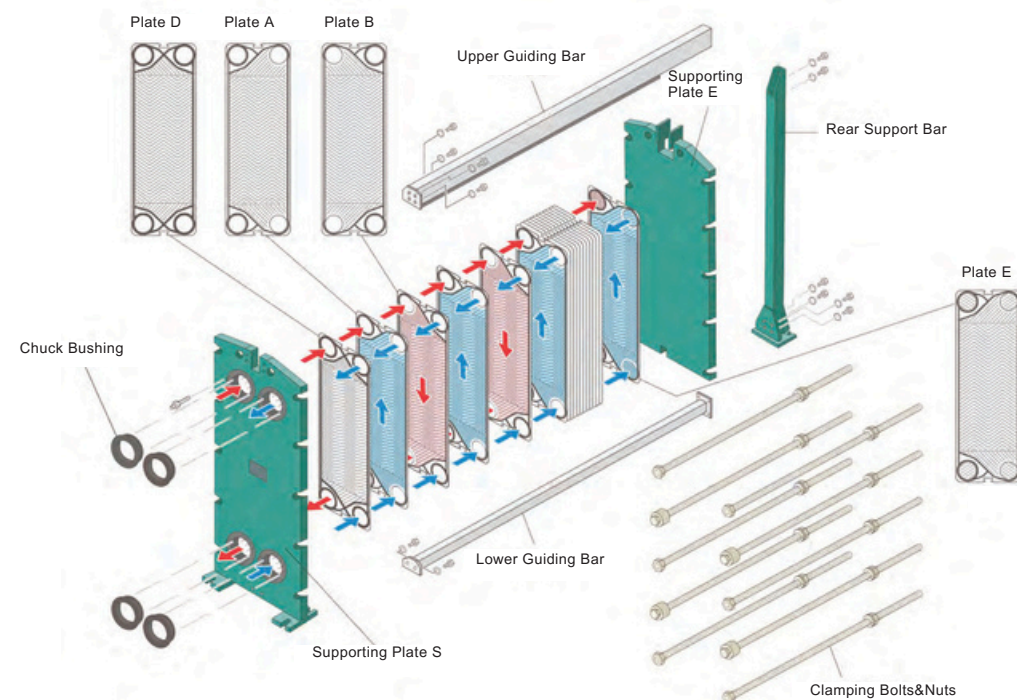


## Product Introduction

Plate Heat Exchanger is abbreviated as PHE, which is made by machine pressing metal plates into corrugated shape, then assembled & piled up, with the help of supporting plates and clamping bolts. In that, a compact and efficient Plate Heat Exchanger hence comes to life, featuring a neat structure in which multiple channels are formed and two fluids flow and exchange heat. High Efficient, Energy Saving, Economic, Advanced are the advantages of Plate Heat Exchanger. Until now it has already entered the market of Petrochemical Engineering, Food and Beverage, Mechanical Engineering, Central Heating,

Metallurgical Engineering, Power Unit System, Marine, Paper-making, Textile, Pharmaceuticals, Nuclear industry, Seawater Desalination, Cogeneration, and there are so many others to be discovered. Over the years, conventional Shell&Tube Heat Exchanger is giving way to this brand new Plate Heat Exchanger, and allows it to prove to the world its excellency in Cooling, Heating, Condensing, Heat Recovery and more.

## Plate Heat Exchanger Structure



## Model No. Illustration

B R 05 - 1.0 - 1 - N



Gasket Material Heat Transfer Area,  
 m<sup>2</sup> Design Pressure, Mpa  
 Nominal Heating Area Per Plate, m<sup>2</sup>  
 Plate Heat Exchanger Mark



## Characteristics

### Large LMTD

(Logarithmic Mean Temperature Difference)

Complete counter flow realizable, with coefficient 1 for temperature correction

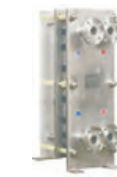


### High Heat Transfer Coefficient

Even under small Reynolds Number, turbulence is easily generated thanks to the corrugated plates, and increases coefficient by 3-5 times compared with Shell&Tube Heat Exchanger, up to 7000W/m<sup>2</sup>K.

### Economic Floor Space

Owing to the compact structure, the heat exchange area per unit volume of Plate Heat Exchanger is 2~5 times higher than Shell&Tube Type, accordingly its floor area is only 10-20% of Shell & Tube Heat Exchanger.



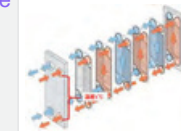
### Light Weight

The 0.5-0.8mm thickness plates lightens its weight by 20%, if given the same heat exchanged by Shell&Tube Heat Exchanger.



### Small Terminal Temperature Difference

For water-water exchanger, the minimal terminal temperature difference is 1°C



### Small Fouling Factor

Strong turbulence with less impurities accumulated; Small channel distancing; Smooth stainless steel plates with less fouling



### Multiple Fluids

By adding partition plates in the middle, we can achieve heat transfer among three fluids and more, which is widely applied in dairy processing.



### Convenient for Cleaning

Remove the Clamping Bolts and the exchanger can be washed from both sides of the plates.



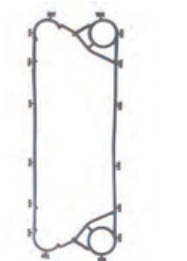
## Plate Material

Material Selection	Material Code	Thickness	Application
Stainless Steel Special	304,304L, 316, 316L	0.5-0.8 mm	Acid, alkali corrosion, not suitable for fluids with chloride ion.
Steel	SMO254,20Cr, 18Ni	0.5-0.8 mm	Weak sulfuric acid, inorganic water.
Commercial Purity Titanium	Ti	0.5-0.8 mm	Alkali&Salt production, Sea Water operation, cold&chilled situation, and for fluids with chloride ion.
Nickel	Ni	0.5-0.8 mm	Hot&strong alkali corrosion, weak acid.
Hastelloy Alloy	Hastelloy	0.5-0.8 mm	Strong sulfuric acid, hydro-choric acid, phosphoric acid.



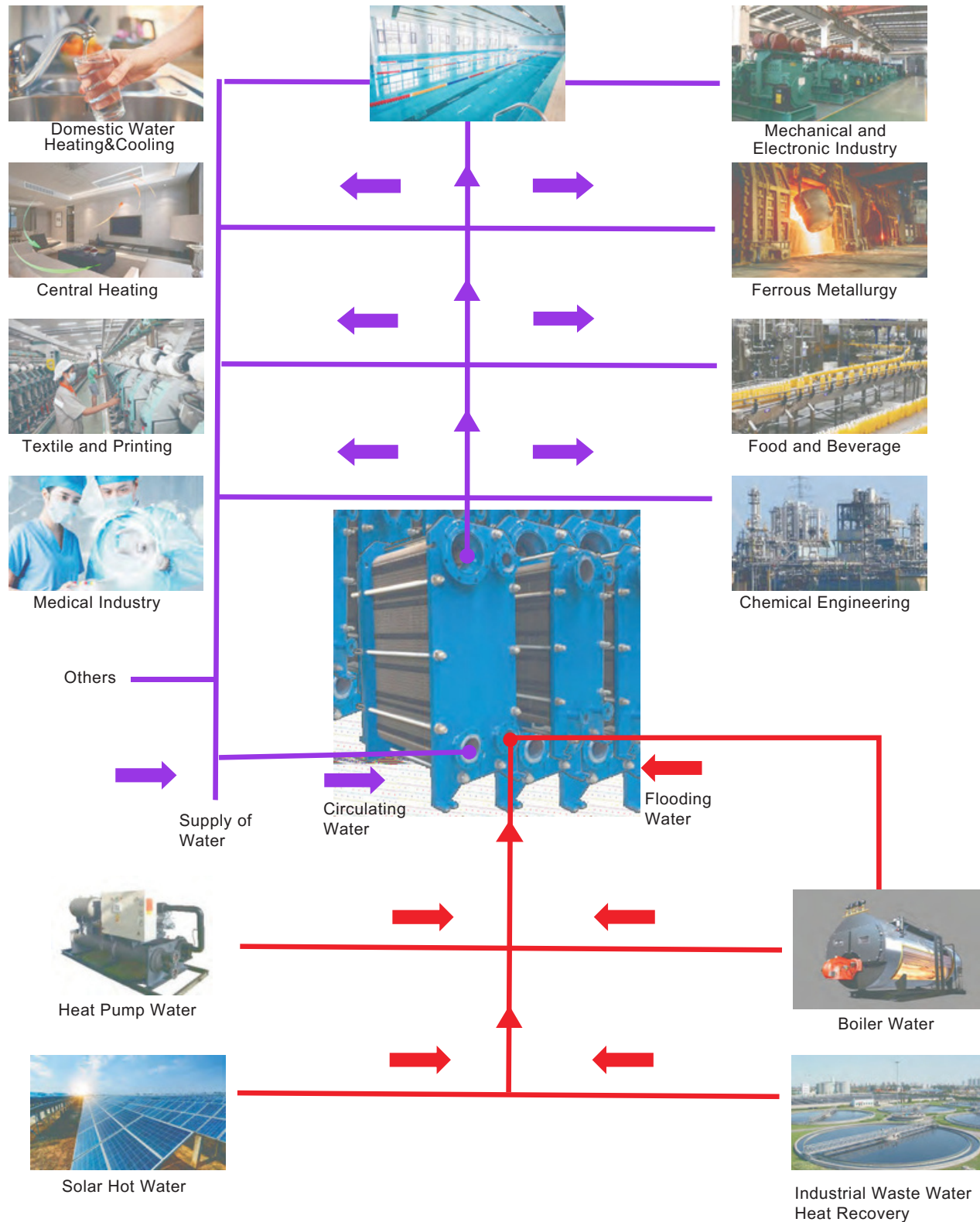
## Sealing Gaskets Material

Material Selection	Material Code	Applicable Temperature ( °C)	Application
NBR	N	-20-100	Heated air, water, non-polar oil, mineral oil, lubricating oil, silicone oil.
EPDM	E	-50-150	Steam, alcohol, weak acid, weak alkali, oxidant.
Fluorine Rubber	F	0-180	Strong acid, alkali, petroleum fluid, halo-hydrocarbons.
Silicone Rubber	Q	-65-230	Food and Beverage, Pharmaceutical Industry.
Chloroprene Rubber	C	-40-100	Ammonia, mineral oil, Freon such as R22, R32, R134a.



**Application Overview**

Swimming Pool Temperature Maintaining



**Model Selection with Parameters**

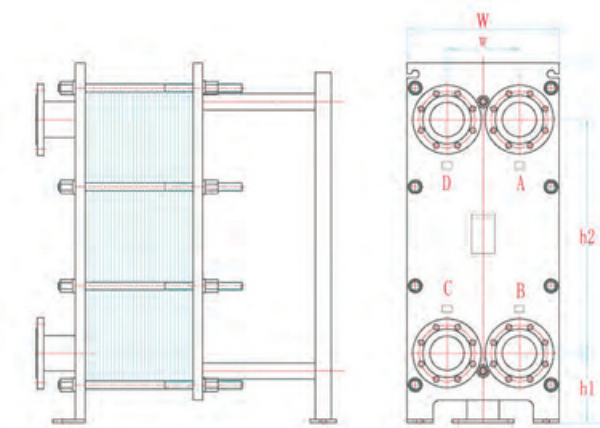
Please provide the following as much as possible, it would be of great help to come up with a most fitting exchanger

**Parameter Chart**

Heat Load/Heat Exchange Capacity		KW or Kcal/h	
Hot Side		Cold Side	
Fluid Name		Fluid Name	
Flow Rate	m <sup>3</sup> /h	Flow Rate	m <sup>3</sup> /h
Inlet Temperature	°C	Inlet Temperature	°C
Outlet Temperature	°C	Outlet Temperature	°C
Operating Pressure	MPa	Operating Pressure	MPa
Allowable Pressure Drop	MPa	Allowable Pressure Drop	MPa

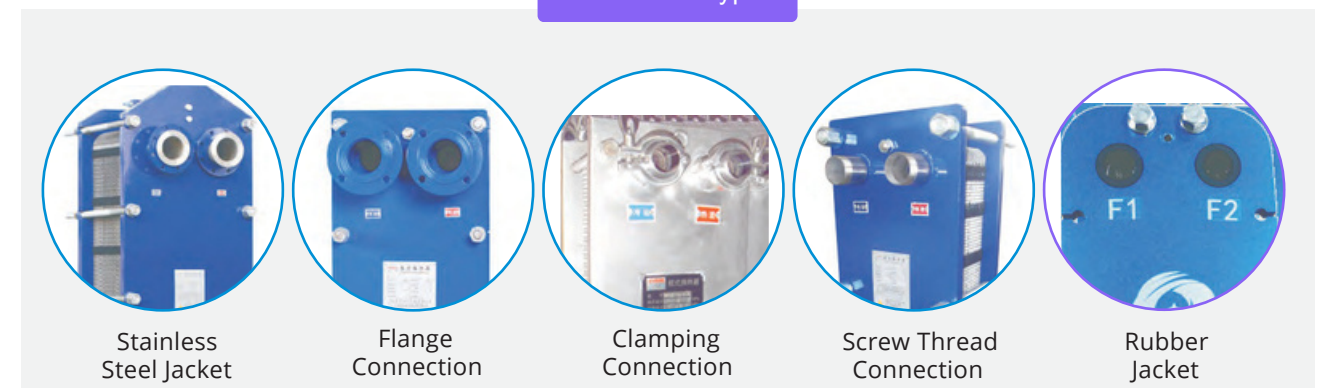
**Model Selection Based on Existing Machinery**

Please offer us with the mentioned dimension, for the convenience of our design&fabrication



- ①. Width of the equipment W
- ②. Center to center width w
- ③. Height of the equipment H
- ④. Center height h1, h2

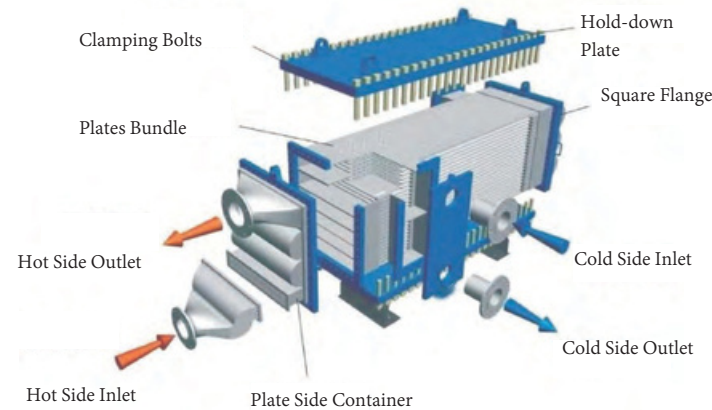
**Connection Type**



## Product Introduction

Welded Plate Heat Exchanger belongs to Recuperative Heat Exchanger, and is fully welded between every two plates to form channels through which the fluids with different temperature can flow and exchange heat.

The high temperature fluid transfers heat to the low temperature fluid through the plates, thereby realize heat exchanging. The flow velocity of each fluid can be controlled by plates distance, so as to meet the working condition perfectly.



## Model No. and Corresponding Specification

Model No.	Dimension			Max. Assembly Area(m <sub>2</sub> )	Max.Hot Side Connection (mm)	Max.Cold Side Connection(mm)
	Max. Length (mm)	Width (mm)	Height (mm)			
PQ06	960	26	910	9	DNL50	DN80
PQL8	1050	2	1425	32	DN200	DN80
PQ30	2750	36	1664	90	DN250	DNL25
PQ40	2800	7	1974	120	DN250	DNL00
PQ60	2900	42	2186	180	DN350	DN200
PQ90	3100	7	2560	450	DN500	DN300
PQLL0	3300	45	2860	550	DN500	DN300
PQL30	3500	0	3160	650	Dn500	DN300

51

1

71

8

71

8

## Design Data

Flow Rate: 1-2000m<sup>3</sup>/h

Operating Pressure: Vacuum-8.2MPa

Operating temperature: -195-300°C

Connection: DN25-DN300; Welded, Flange, Screw Thread and others

Anti-Corrosion: Fully welded without gaskets, but with a wide range of metal selections to ensure longer service life and strong corrosion resistance.

## Advantages

Welded Plate Heat Exchanger, combination of Plate Heat Exchanger and Shell&Tube Heat Exchanger, inherits advantages from the former such as compact structure, high temperature resistance, great sealing function, safety and reliability, and above all, it can perform under high pressure.

For application, Welded Plate Heat Exchanger is mainly for vapor condensing and liquid to liquid heat exchanging, to meet with various requirements from industries like power sector, petrochemical, petroleum coking, pharmacy, metallurgy, refrigeration, paper processing etc. Optimal arrangement of various channels also make sure of high heat transfer efficiency and minimal pressure loss. Besides, its frame is detachable, and therefore it is convenient to have either mechanical cleaning or chemical cleaning as per actual situations.

## Characteristics

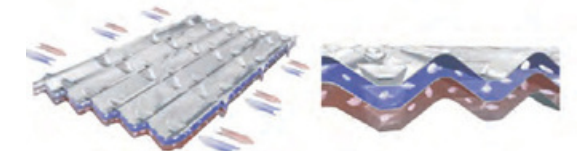
### High Heat Transfer Efficiency

The V-Shaped Structure of plates boost efficiency



### Little Fluid Hold-up

Unique plate design and high speed turbulence reduce the possibility of fouling, and thereby few fluids remain in the exchanger



### Simple Structure

Frame is made of Carbon Steel and the structure is simple&compact.



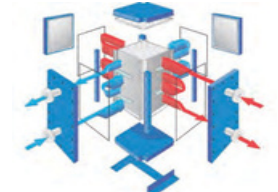
### Economic

Fluid contact part and plates are using the same materials due to structural settings for the edge of the plate. It can save cost while satisfying with various heating&cooling requirements.



### Detachable

Frame from all six sides are removable and cleanable.



**Product Introduction**

Brazed Plate Heat Exchanger is updated Plate Type Heat Exchanger, but without sealing gaskets. Composed of supporting head plates, and thin V-Shaped plates, Brazed Plate Heat Exchanger has every two plates arranged in different orientations, and thus creates numerous contact points.

Constructing principles for this exchanger is to melt brazing material and fuse with the metal plates by Vacuum Brazing, alloys are formed during this process. Every contact points between plates would become welding points, which will enhance both the intensity and efficiency of the exchanger.

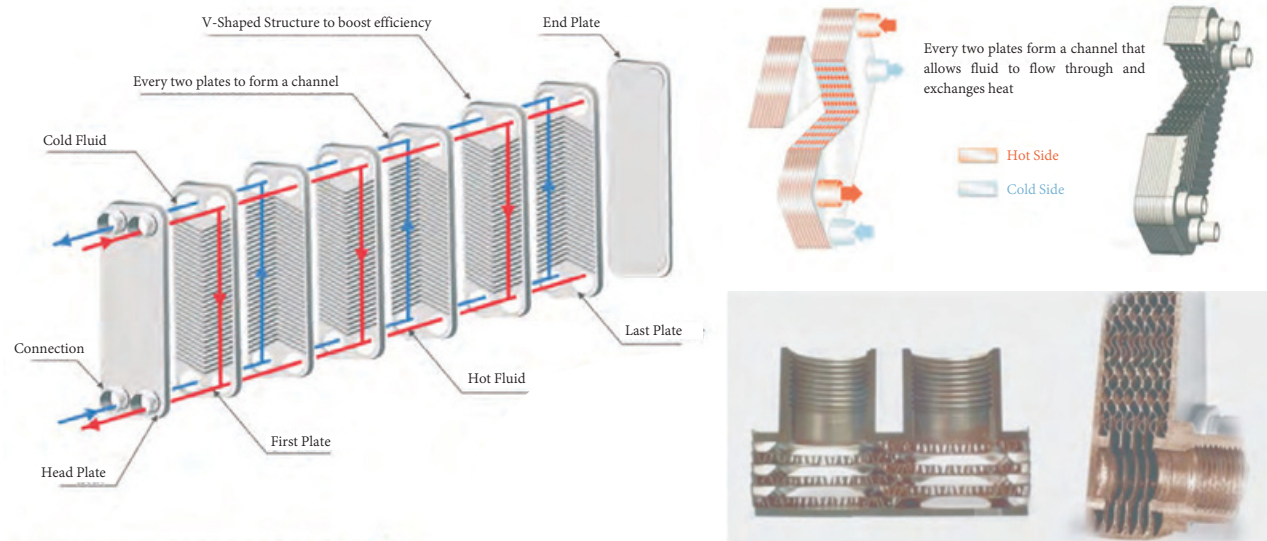


**Design Data**

Amazing Sealing Treatment-Pure copper brazed  
High Heat Transfer Efficiency-Up to 7000W/m<sup>2</sup>.K  
High Pressure Durability-Up to 4.5MPa

Small Temperature Difference at 1°C  
Wide Temperature Range from -195°C to 180°C  
Compact Structure, Small Volume, Light Weight and Little Fluids Hold-up

**Operating Image**



Products Series

**Integrate Series for Air Dryer**

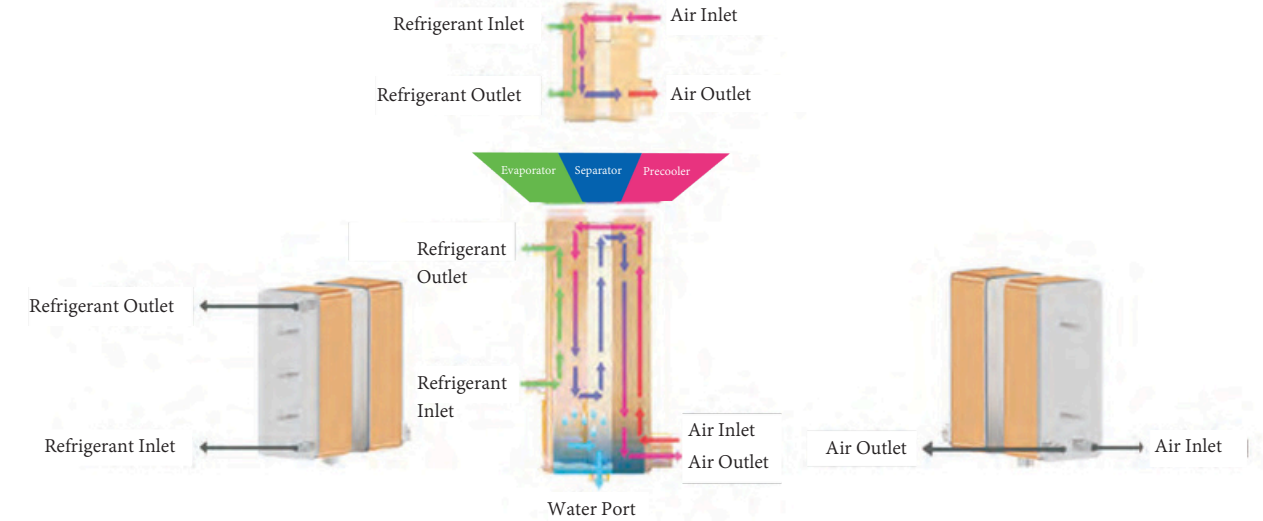
**Features and Advantages**

Integrate Air Dryer Series is a subtle blend of Refrigerant-Air Heat Exchanger and Air-Air Heat Exchanger with a separator in between. In this regards, overall performance is boosted, not only compactness, high efficiency for drying, stability for pressure drop, but also convenience for water draining and installation.



**Application**

Mainly for Refrigerant with medium or high pressure.



**True Dual Series for Air Conditioner/Heat Pump/Water Chiller**

**Features and Advantages**

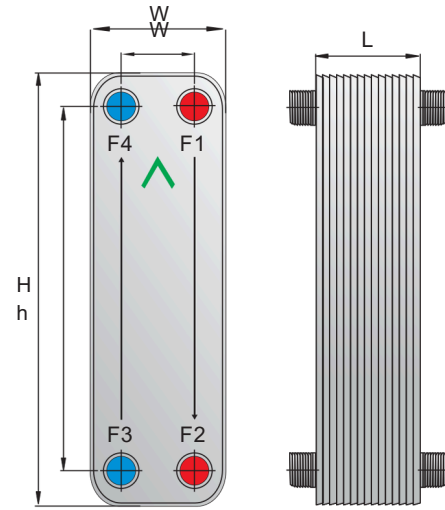
This series usually consists of two Compressors or Condensers, to form two independent refrigerating circuits and a central fluid circuit. Even if one refrigerating circuit stops functioning, the other one will still make sure a high efficiency heat transfer, owing to the maximal contact between the exchanging mediums.

Diagonal flow of the mediums inside the exchanger also brings the total heating area up to the most.



Products Series

Brazed Plate Evaporator and Condenser



Technical Data

Model No.	Sizing					Max. Connection Sizing	Single Plate Heat Exchange Area (m <sup>2</sup> )	Weight (kg)
	h (mm)	H (mm)	w(mm)	W (mm)	L (mm)			
TRP014	172	203	42	73	9+2.3n	3/4"	0.014	0.5+0.05n
TRP022	278	316	42	73	9+2.3n	3/4"	0.022	0.7+0.07n
TRP028	250	311	50	111	9+2.4n	1-1/4"	0.028	1.2+0.10n
TRP052	466	527	50	111	9+2.4n	1-1/4"	0.052	1.8+0.23n
TRP060	470	527	63	120	9+2.3n	1-1/4"	0.060	2.4+0.20n
TRP095	515	617	98	190	11+2.4n	2"	0.095	4.6+0.44n
TRP136	378	490	138	250	13+2.85n	3"	0.136	6.5+0.42n
TRP210	603	739	188	322	13+2.85n	4"	0.210	13+0.82n
TRP310	815	985	200	373	20+2.85n	5"	0.310	31+1.20n

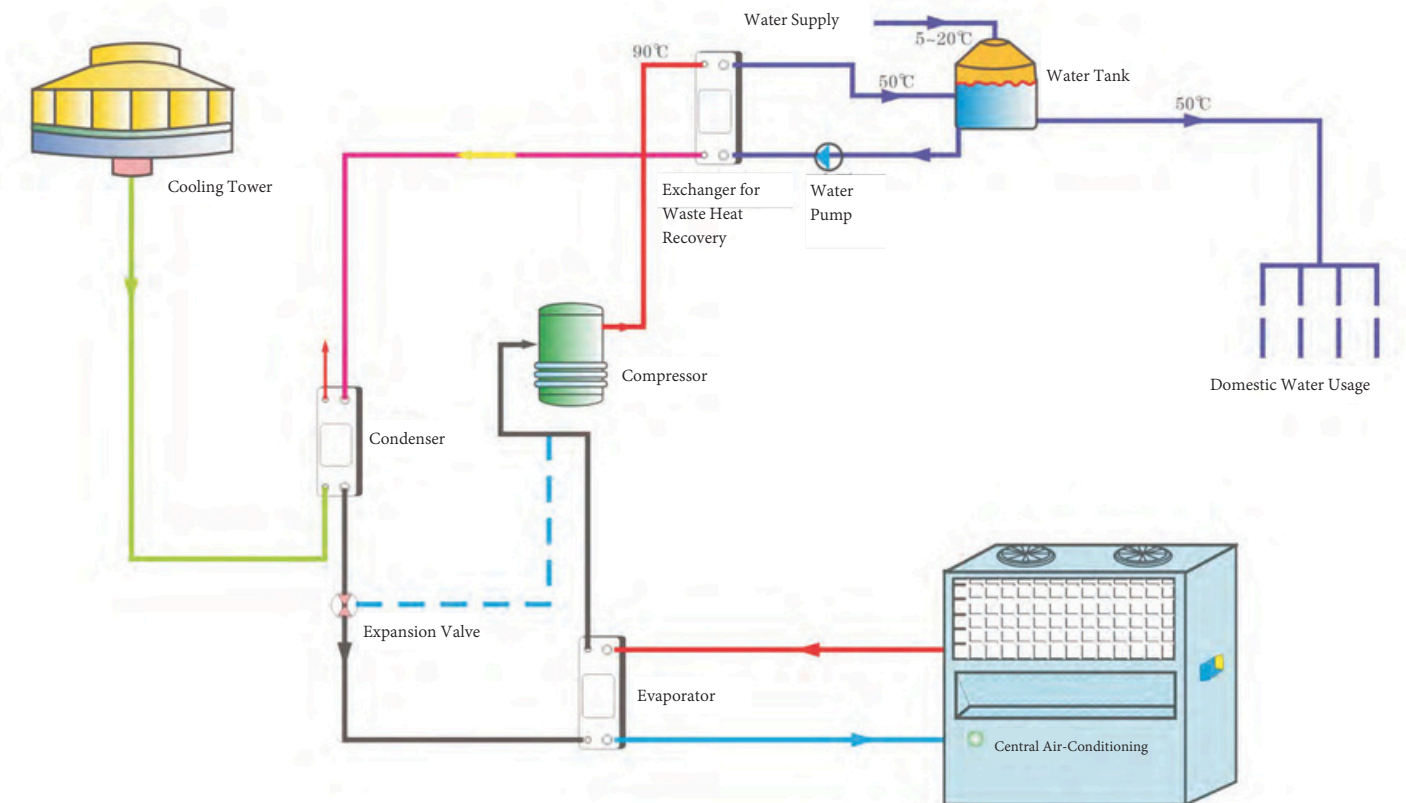
Products Series

Brazed Plate Evaporator and Condenser

Application

- Heat Pump
- Boiler
- Water Chiller
- Refrigeration
- Waste Heat Recovery
- Pharmacy/Food and Beverage/Electronics
- Heating and Cooling of Oil
- Heating and Cooling of Compressed Vapor
- Other Industrial Application

Brazed Plate Heat Exchanger(for Waste Heat Recovery)



**Product Introduction**

The Plate and shell heat exchanger is mainly composed of two parts: plate bundle and shell. The contact points of cold-formed pairs of slats are tightly welded together to form a plate tube containing multiple flat runners. A fluid flows in the plate tube, and B fluid flows between the plate tubes in the shell.

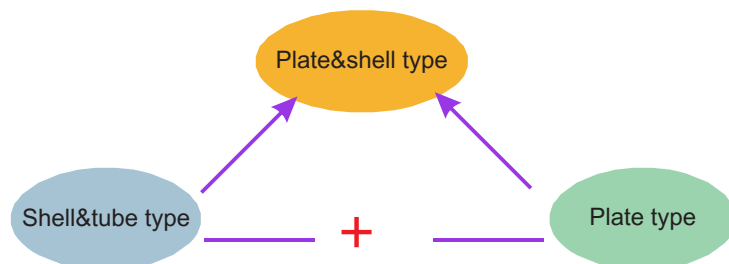
The operating principle: a laser-welded or automatic plasma-welded corrugated plate bundle is inserted in the shell, which replaces the tubes of Shell&tube heat exchanger, with the plate bundle as the heat transfer element.

It combines the advantages of both shell&tube heat exchanger and plate heat exchanger, widely used in general occasions, such as cooling system, petrochemical field, oil and gas field, pharmaceutical field, food industry, ship field, power industry, paper industry and grease industry,etc.



**Strengths of Plate&shell type**

- High pressure
- High heat transfer
- Gasket free
- Low fouling
- High temperature
- Compact structure
- High temperature
- Small temperature difference at the end
- Low pressure drop
- Small temperature difference at the end



**Strengths of Shell&tube type**

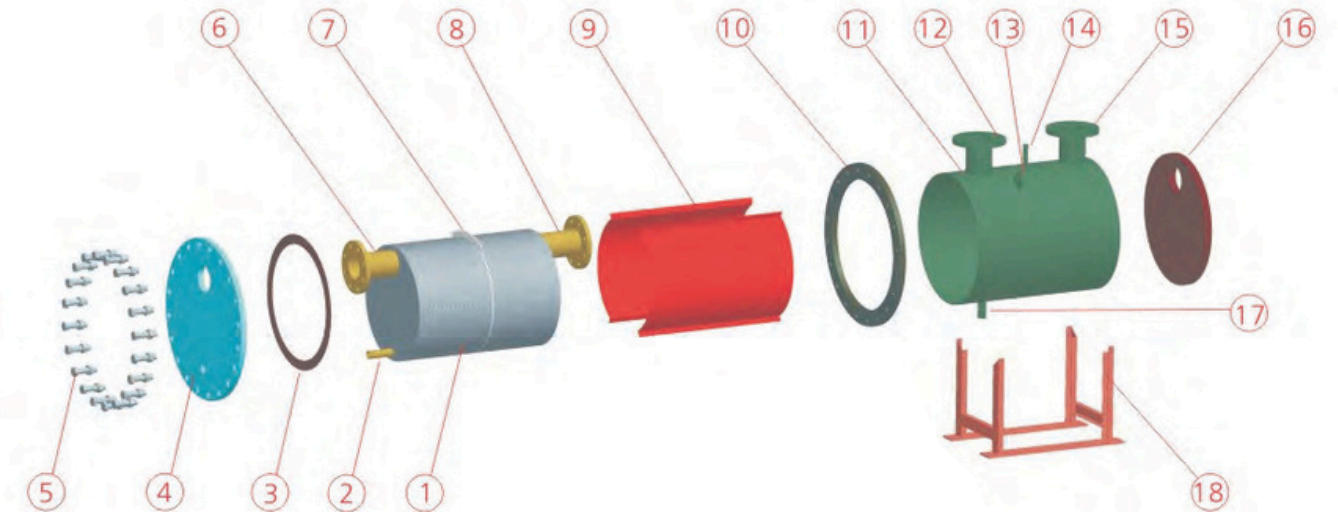
- High temperature
- High pressure
- Gasket free
- Low pressure drop



**Strengths of Plate type**

- High heat transfer
- Compact structure
- Low fouling
- Small temperature difference at the end

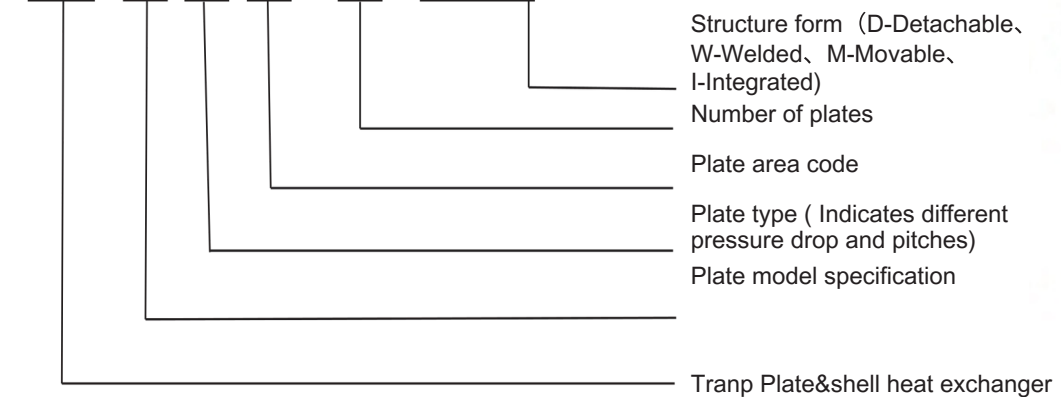
**Structure Details**



- 1. Plate Pack
- 2. Plate Side Drain
- 3. Joint
- 4. Front Cover Sheet
- 5. Bolts
- 6. Plate Side Inlet
- 7. Baffle
- 8. Plate Side Outlet
- 9. Spoiler
- 10. Flange
- 11. Shell
- 12. Shell Side Outlet
- 13. Lifting Lug
- 14. Vent
- 15. Shell Side Inlet
- 16. Rare Cover Plate
- 17. Shell Side Drain
- 18. Supports

**Model Specification**

TPS - 03 HH 76 - 80 W  
 XXX XX XX XX - XX X/X/X/X



**Parameters**

Design temperature: -195~550°C  
 Design pressure: vacuum~100.0bar  
 Area per plate: 0.022~2.0m<sup>2</sup>



**Material of Equipment**

Shell	Plate
carbon steel	AISI 304
AISI 304	AISI 316L
AISI 316L	AISI 904L
AISI 904L	254 SMO
254 SMO	Ti
Ti	Ni
Hastelloy	Hastelloy
others	others

If the medium is strong corrosive, the plate and the shell can be different metal materials.

**Plate Thickness and Operating pressure**

Plate Thickness	Operating pressure
0.6mm	10~25bar
0.8mm	10~63bar
1.0mm	40~100bar

**Main Features**

<p><b>Gasket free and not brazed</b></p>	<p><b>Stable and safe structure</b></p>	<p><b>Special seal structure for preventing media by-pass</b></p>	<p><b>High heat transfer efficiency</b></p> <p>It is possible to achieve "complete counter - flow " with high surface heat transfer coefficients on both sides of the heat transfer wall.</p>
<p><b>Compact structure and light weight</b></p> <p>The heat transfer area per unit volume of the Plate&amp;shell heat exchanger is 70% higher than that of the Shell&amp; tube heat exchanger.</p>	<p><b>Reliable technology</b></p>	<p><b>Non-scaling Easy to maintain and clean</b></p>	<p><b>Min. Requirement of maintenance space, small temperature difference at the end.</b></p>

**Structure Classification**

**All welded**

- TPS-W
- All welded structure



**Detachable**

- TPS-D
- Convenient for opening and cleaning



**Movable cylinder**

- TPS-M
- Matching customer usage

**Integrated unit**

- TPS-I
- Integrated control



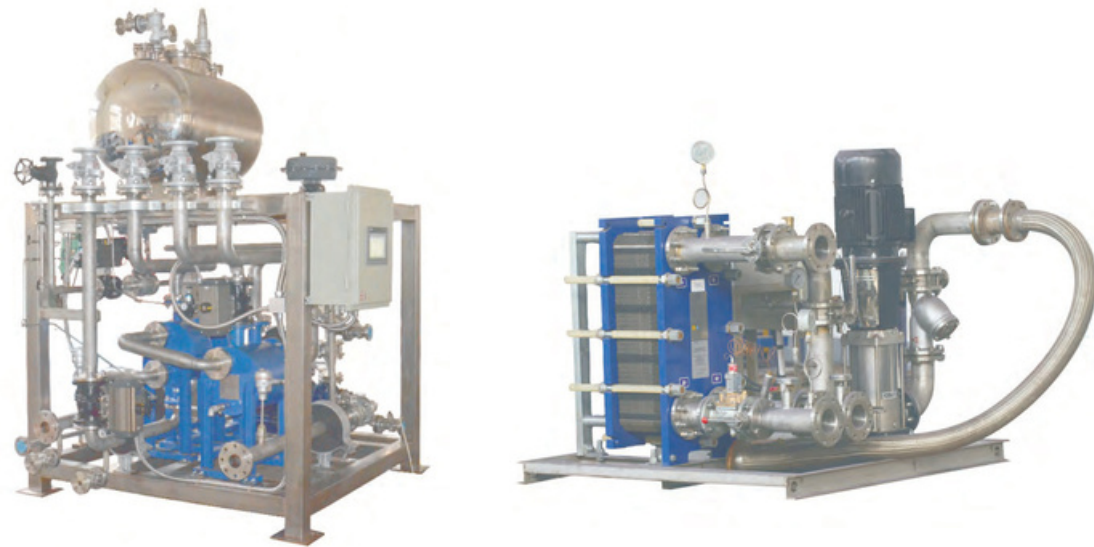
**TPS plate type and parameters**

Prefix	Item	Characteristic	Plate type	OD	Connectio	Corrugation dept	Hole distance	Heat exchange area;	Notes
		Type		mm		mm			
TPS	2	HH	22	190	20	2.1	138 164	0.022	High pressure drop
		HH	32	190	24	2.2	227 216	0.032	High pressure drop
		HA	32	190	24	2.5	216 216	0.032	Derivative plate of high pressure drop
		HH	46	240	40	2.8	310 310	0.046	High pressure drop
TPS	3	HH	72	319	49	2.1	338 400	0.072	High pressure drop
		HW	76	300	55	2.1	400 400	0.076	High pressure drop, wide pitch
		HH	76	300	55	2.1	400 480	0.076	High pressure drop
TPS	4	LL	76	300	55	2.1 3	480 515	0.076	Low pressure drop, regular pitch
		HH	165	440	80	4.2	515 515	0.165	High pressure drop
		LL	165	440	80	4.2	515 650	0.165	Low pressure drop, regular pitch
TPS	5	HH	179	480	100	2.1	780 780	0.179	High pressure drop
		HW	264	556	105	2.1	700 700	0.257	High pressure drop, wide pitch
		LW	264	556	105	2.1	850 1000	0.257	Low pressure drop, wide pitch
TPS	6	HH	264	556	105	2.1	1000	0.264	High pressure drop
		LL	264	556	105	4.2		0.264	Low pressure drop, regular pitch
		HH	350	650	132.5	4.2		0.35	High pressure drop
TPS	7	LL	350	650	132.5	2.1		0.35	Low pressure drop, regular pitch
		HW	446	740	165	2.1		0.442	High pressure drop
		LW	446	740	165	3.2		0.442	Low pressure drop, wide pitch
TPS	8	HH	446	740	165	2.1		0.446	High pressure drop
		LL	446	740	165	2.1		0.446	Low pressure drop, regular pitch
		HH	647	855	146	2.1		0.647	High pressure drop
TPS	9	HA	836	998	190	2.1 7		0.836	Derivative plate of high pressure drop
		LA	836	998	190	2.8		0.836	Derivative plate of low pressure drop
		HA	786	998	250	2.8		0.786	Derivative plate of high pressure drop
TPS	1	LA	786	998	250			0.786	Derivative plate of low pressure drop
		HW	1200	1236	293			1.2	Derivative plate of high pressure drop
TP	1	HH	1522	1358	300			1.522	High pressure drop
S	2	LL	1522	1358	300			1.522	Low pressure drop, regular pitch
TP	1								
S	3								

**Product Introduction**

The plate heat exchanger unit converts the heat of a primary heating network into domestic water or heating water needed by users automatically and continually, which is a set of heat exchange equipment for automated heat conversion.

The heat exchanger unit essentially consists of a plate heat exchanger, a circulating pump, a make-up pump, thermometers, a filter, sensors, a pipeline and valves. It is also possible to design the temperature control system, pressure stabilization system, variable-frequency controller, heat metering and communication controller, etc. according to the client's requirements.



**Working Principle**

Under the control of temperature-controlled valves, steam or high-temperature water flows into the heat exchanger according to the required flow rate of the heating system, where the user's heating (air conditioning) return water are heated indirectly. After being filtered, the secondary water enters the plate heat exchanger through the circulating pump to be heated again in the heat exchanger to realize heat supply. The primary heat medium returns again to the primary side after passing the heat exchanger, and the water loss of the system is automatically replenished by the charge pump according to the set pressure to ensure the system pressure is stable and operates normally.



**Features**

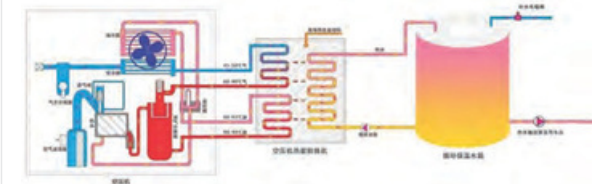
**Intelligent control**

Complete control functions, high accuracy, stable and reliable operation



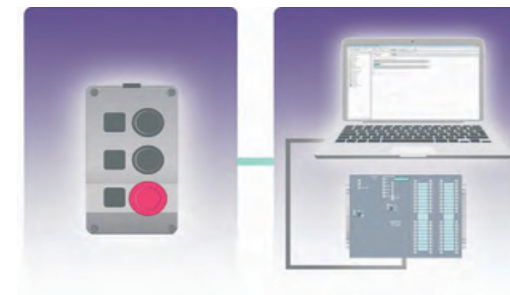
**Excellently energy-saving**

The unit adjusts the heat source and hot water supply according to the parameters such as ambient temperature, primary and secondary pipe network temperature and pressure, which saves heat and electric energy in the system operation.



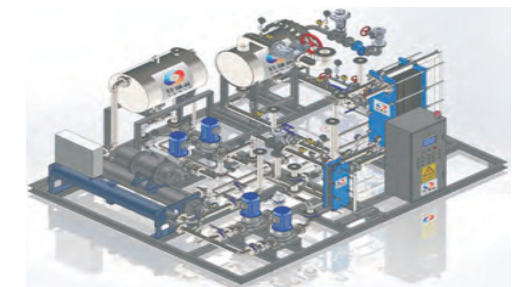
**High automation and easy to operate**

The system elements are reliable, the heat exchanger is a high-efficiency plate type, and the main intelligent parts are imported or JV brands, which is stable and reliable and durable. The system pressure, temperature or flow rate is automatically controlled.



**High cost performance and wide application**

It can be monitored remotely, and be switched between manual and automatic operation. The layout of the unit is reasonable, so its size is compact, and it's easy to inspect and repair; occupying a small installation area, saving infrastructure investment, easy to install and maintain, and suitable for various heating occasions and requirements.



**Operating principle**

The design of the heat exchanger unit meets the most comfortable heat load for heating users, with high energy-saving as the highest design concept, and achieves largely energy saving design in the district heating network system through mass regulation.



Product Introduction

Shell and tube heat exchanger, also called tube-and-tube heat exchanger, is a partition type heat exchanger with the wall surface of the tube bundle enclosed in the shell as the heat transfer surface. This kind of heat exchanger has simple structure

and reliable operation. It can be made of various materials (mainly metal materials, like carbon steel, stainless steel and copper) and can be used under high temperature and high pressure. It is widely used in the chemical, oil, energy and other industries.



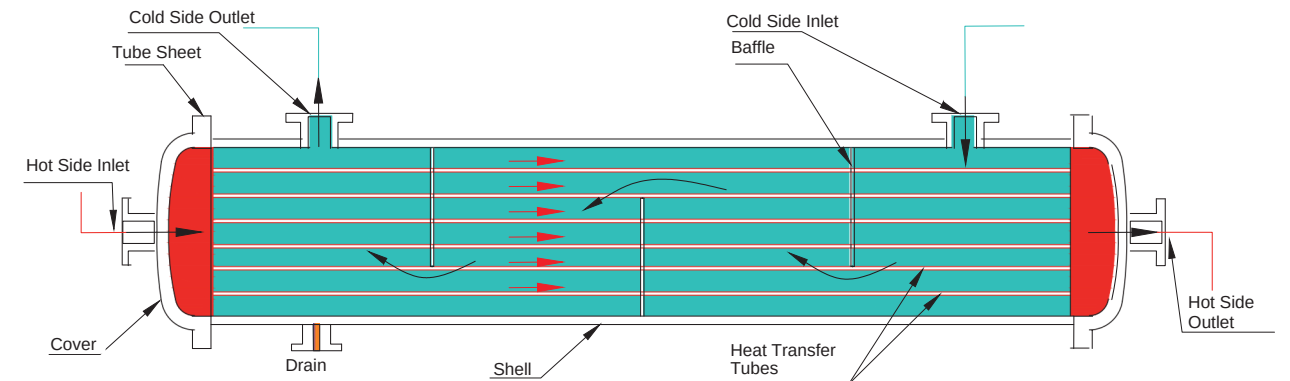
Features

- Large processing quantity (1-2,000m<sup>3</sup>/h)
- Extensive material selection (carbon steel, stainless steel, copper or other metals)
- Stable and reliable operating state
- Strong adaptability (applicable to almost all industries)
- Adaptability to high temperature and pressure (≤800°C; ≤6.0Mpa)

Material Selection	Applications
Carbon steel Q245R, Q345R, Q235-B, etc.	The sanitary level of water quality is not required for heating and production process water
Stainless steel SS304, carbon steel lined with copper, carbon steel lined with stainless steel	Strict requirements for sanitary hot water and other water cleanliness
SS316 and naval brass with excellent corrosion resistance	High chloride ion content or seawater conditions
Hastelloy, chrome steel, chrome-nickel steel and other high-alloy steels	These metals have corrosion resistance, high temperature resistance and low temperature resistance, suitable for sulfuric acid conditions, etc.

Fixed tube heat exchanger

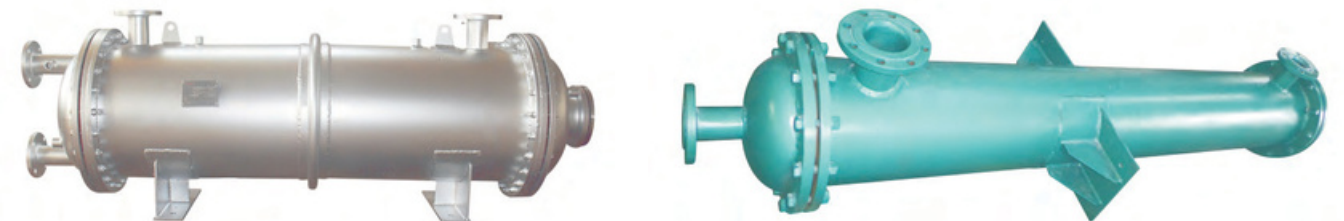
Product Structure



Applicable Occasions

The tube sheet at both ends of the tube bundle and the shell are integrated, only suitable for the small fluid temperature difference in both the tube and shell sides (less than 70 °C), and the shell side does not require mechanical cleaning ;

can also be used for a slightly large temperature difference and the shell side pressure is not high (less than 6Atm).

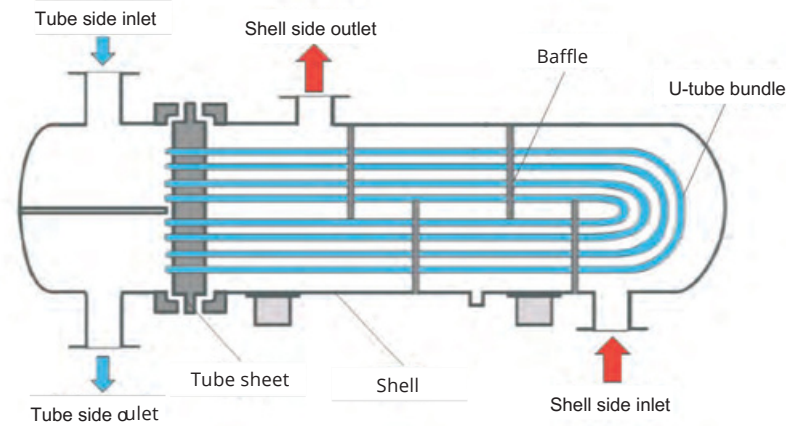


Features

- Advantages: simple and compact structure, high pressure resistance, low cost and easy to clean the tube side.
- Disadvantages: Risk of blockage when the tube is damaged or needs to be replaced.
- When the difference between the wall temperature of the tube bundle and the shell or the coefficient of linear expansion of the material is large, a large thermal stress will be generated in the shell and the tube bundle. A flexible compensation ring (also called expansion joint) should be installed on the shell to reduce the thermal stress.

U tube heat exchanger

Product Structure



Applicable Occasions

U tube heat exchanger is suitable for the large temperature difference between tube side and shell side. The shell side media is easy to scale and needs cleaning, while the tube side media is clean and not easy to scale. It is also suitable for high temperature, high pressure, fluid corrosive working conditions.

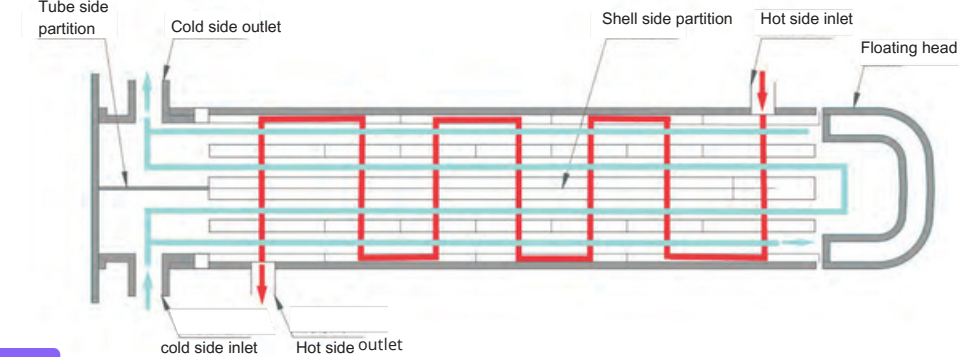


Features

- Each heat exchange tube is bent into U-shape, the two ends are fixed in the upper and lower areas of the same tube sheet, and divided into two chambers of inlet and outlet with the partition in the tube box.
- This kind of heat exchanger completely eliminates the thermal stress, the structure is simpler than the floating type, but the tube side is not easy to clean.
- The number of tubes is small, the utilization of the tube sheet is not frequent, and the shell side fluid is easy to short circuiting, which is unfavorable to heat transfer.
- If there is a leak or damage in the tube, the external U-tube can be replaced, while the broken inner tube can not be replaced, only plugged, and one broken U-tube means two broken, so the U-tube easily scrapped.

Floating head heat exchanger

Product Structure



Applicable Occasions

Floated type shell&tube heat exchanger is mostly used for large temperature fluctuations and temperature differences, compared with fixed tube heat exchanger, its structure is more complex and more expensive.



Features

One end of the tube is fixed on an immobile tube sheet, which is clamped between the shell flange and the tube flange, and is connected by bolts; the other end of the tube is fixed on a floating head tube sheet, which is clamped between the floating cover and the hook ring connected by studs, forming a floating head that can move freely in the shell.

Strengths :

1. If the tube bundle and the shell are heated and elongated, they do not affect each other, so there is no temperature difference stress.
2. The floating part is a detachable connection consisting of the floating tube sheet, hook ring and floating cover. It is easier to take the tube bundle out, and the tube can be cleaned both inside and outside and is easy access.

Plate Air-Air Heat Exchanger

Product Introduction

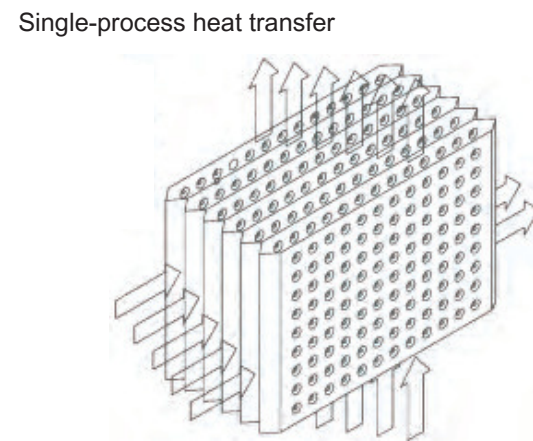
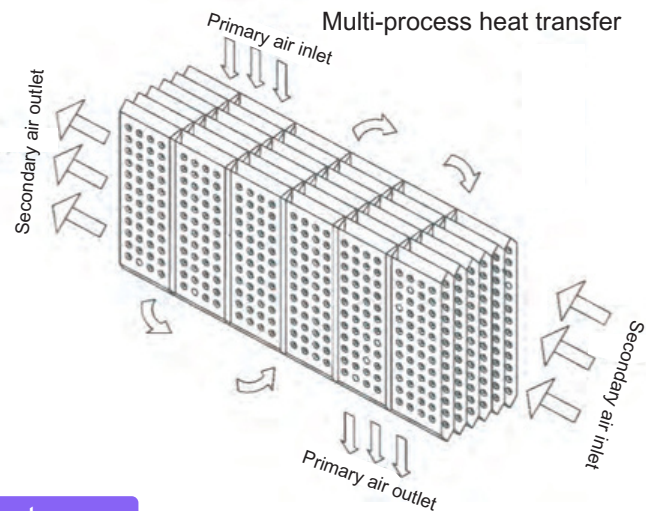
A series of thin metal plates parallel to each other and pressed with a distance column are stacked to form a plate air-air heat exchanger. The main components are heat transfer plates, outer frame sealing plates, compression device and so on.

The plate adopts full welding seal, flue gas and air cross flow between the plate for heat exchange. It's suitable for air preheating and waste heat recovery in steel, chemical, electric power, battery and other industries, especially

Applicable Occasions

for ultra-high temperature air to air heat exchange field.

Tranp's Plate Air-Air Heat Exchanger is especially suitable for heat exchange between gas medium with high corrosion, high dust and high humidity.



Features

- Convenient cleaning: The surface of the heat exchange plate is smooth with strong self-cleaning ability, so it is easy to clean. Besides, the equipment can be washed forwardly and reversely with clean water, few residue could hold-up, thus the cleaning is convenient and fast.
- Multiple process available: Multiple process is available, which is customized for different working conditions.
- Large processing capacity: The processing capacity can be as low as ten, but also as high as thousand CBM, therefore it's widely used in waste heat recovery.
- Not easy to block: The impurities is not easy to precipitate due to large channel between plates and less contacts; The heat exchange surface made of stainless steel is smooth, to reduce corrosive impurities and possibility of fouling.
- Reliable quality: The plate adopts advanced welding equipment and technology, combined use of resistance welding and manual welding between plates ensures that the weld joint is not easy to burst.

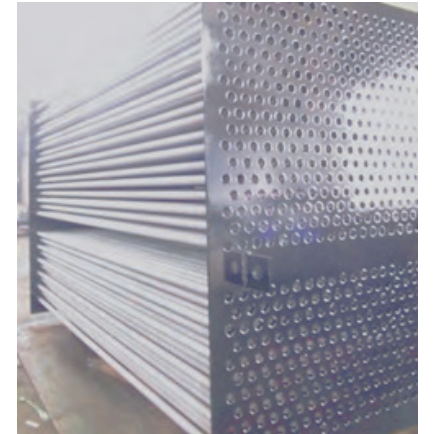
Smooth Tube Air Heat Exchanger

Product Introduction

Smooth Tube Air Heat Exchanger, also known as tube air preheater, is a widely used air preheater in the market. It is composed of many parallel staggered steel tubes, and the ends of the tube are welded with the tube plate to form a cubic tube box with a certain heating surface.

Features

- High heat transfer efficiency, simple structure, mature processing technology, good tightness, less tube wear are the main features of Smooth Tube Air Heat Exchanger.
- Therefore, it is widely used in waste heat recovery projects in petroleum, chemical, metallurgy, electric power, environmental protection and other industries.



Twisted tube air heat exchanger

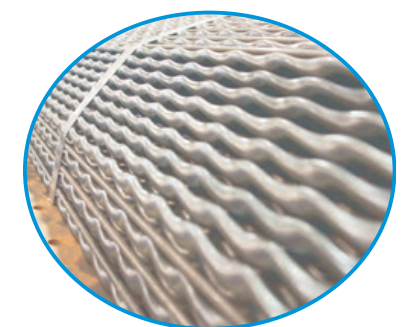
Product Introduction

Twisted Tube Air Heat Exchanger is also called three-dimensional variable diameter tube heat exchanger, of which heat exchange tube is twisted, to strengthen the turbulence of the surface air, so that the air and the tube wall contact for many times and for long time. In addition to enhancing heat transfer, the twisted tube heat exchanger also has the advantages of reducing scaling, self-supporting between tube bundles, no baffle plate elements and so on.



Features

- Main heat exchange component is three-dimensional tube (twisted tube).
- Suitable for air heat transfer with high dust coefficient



Finned Tube Heat Exchanger

Structure and working principle

It is the main heat exchange to cool or heat the air . It can heat the air with high temperature water, steam or high temperature heat conduction oil, and cool the air with salt water or low temperature water.

Finned tube is a kind of ribbed wall, many spiral heat exchange surface or threaded tube can also be regarded as finned tube.It plays a significant role in expanding the heat transfer area and promoting turbulence, both for single-phase and phase transition convection heat transfer.Finned tube heat exchanger structure is basically the same with general shell and tube heat exchanger , but with finned tube instead of flat tube as the heat transfer surface, because of heat transfer enhancement and compact structure, it can be made into a compact heat exchanger.

1. Spiral wound type air heat exchanger

Features

- Features: Compact structure; Aesthetic appearance; Easy installation; Convenient management; Long service life.
- Material: Carbon steel, Stainless steel, Copper ;



2.Extruded type air heat exchanger

Features

- Features: Compact combination; Small thermal resistance; Strong heat transfer performance;Not easy to deform under long-term hot/cold working conditions; Long service life.
- Material: Carbon steel with aluminum fin, Stainless steel tube with aluminium fin, Copper tube with aluminum fin.



Finned Tube Heat Exchanger

3.String type air heat

Product Introduction

It adopts advanced mechanical expansion tube and circular corrugated double flanging aluminum fin structure.Mechanical tube expansion makes copper tube and aluminum fin contact closely and arc ripple can promote turbulence, to destroy the air boundary layer and improve the heat transfer coefficient.Based on advanced structure, coupled with reasonable tube number and reasonable pitch distance design, the heat exchanger has the characteristics of good heat transfer, small air resistance, compact structure, light weight and so on.



Applicable Occasions

It is widely used in air conditioning, cooling, dehumidification, heating and other projects, as the most ideal supporting products for fresh air unit and air processor , which can also be connected with the air pipe as a cooler or heater used alone.

4.High frequency welding air heat exchanger

Product Introduction

The structure is to wrap steel sheet around the base tube, and fix the fin firmly on the tube by high frequency welding, which ensures the joint strength of the tube and the fin.Its specific features include good heat transfer performance, high strength, resistance to heat shock and mechanical vibration, thermal expansion performance, large heat radiating area, long service life, wide use of temperature range, and high pressure.

Applicable Occasions

It is widely used in petrochemical, power plant and power plant transformation, boiler, fin type economizer and air preheater and other fields.

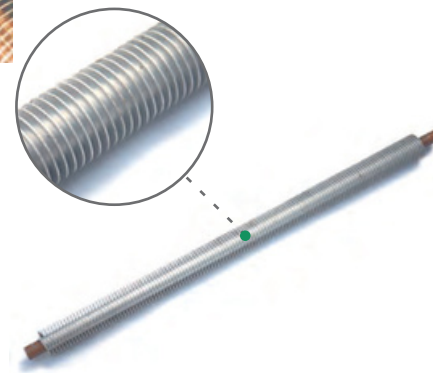
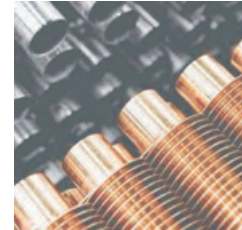


Extruded finned tube

Features

The extruded finned tube is also called the rolling type. Its characteristics includes

- ☑ High heat transfer performance, small contact thermal resistance;
- ☑ Tight combination, high strength, stable performance;
- ☑ Resistance to thermal vibration and mechanical vibration, good thermal expansion performance.



Product material

Type	Base tube material	Fin material
Steel-aluminum composite finned tube	Carbon steel, stainless steel	Aluminum
Copper-aluminum composite finned tube	Red copper	Aluminum
Pure aluminum composite finned tube	Aluminum	Aluminum
Pure copper composite finned tube	Red copper	Red copper

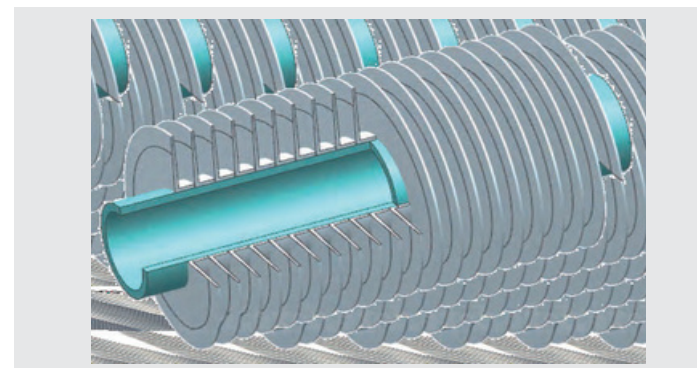
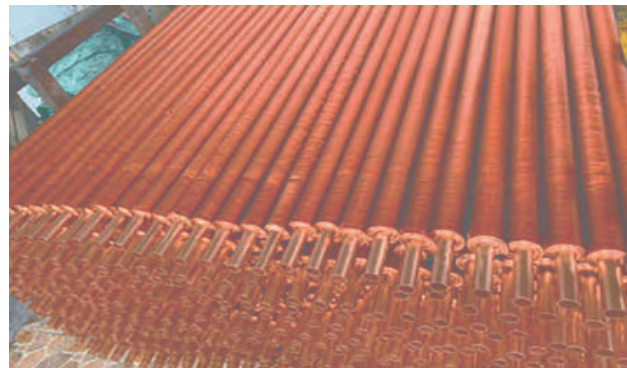
Spiral wound finned tube

Features

Spiral wound finned tube are segmented to L-Shape, LL-Shape, KL-Shape, according to different connecting way between the tube and fin base. It has features of high production efficiency, uniform pitch distance, good heat transfer, high finned ratio, base tube can be protected from air erosion.

Product material

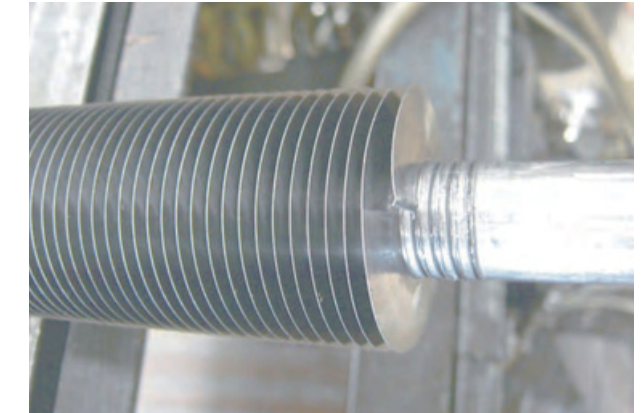
The material of base tube and fin is steel or copper, such as steel tube with steel fin, steel tube with copper fin, and copper tube around copper fin.



Embedded finned tube

Features

The fins are tightly inserted into the outer surface of the base tube with mechanically grooves;  
 Base tube material: carbon steel, alloy steel, stainless steel, dual phase steel, copper;  
 Fin material: aluminum 1060, aluminum 1100, T2 red copper;



Application

- Petroleum, chemical, petrochemical;
- Natural gas processing;
- Blast furnace and converter system in iron and steel industry;
- Power generation: steam turbine exhaust gas condensation, condensed water contact cycle cooling condensation, fossil and nuclear power plants;
- Air conditioning (Freon, ammonia, propane);
- Waste incineration equipment;
- Compressor cooler, etc



Welded finned tube



Spiral high frequency welding finned tube

It is widely used in waste heat recovery of electric power, metallurgy, cement industry and petrochemical industry.



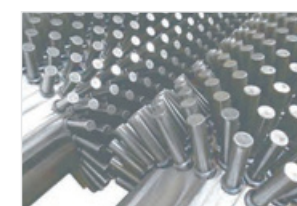
Serrated finned tube

It is mainly used in air conditioner, boiler economizer, etc.



H/Double H finned tube

It is mainly used for economizer, easy to remove ash and reduce wear.



Studded tube

It is mainly used in the convection chamber of tubular heating furnace in petrochemical industry.

Product Introduction

Spiral plate heat exchanger is made of steel plate as a whole, forming two uniform spiral channels. Two heat transfer medium can carry out complete counter-current flow, to greatly enhance the heat exchange effect.

It is suitable for steam - steam, steam - liquid, liquid - liquid heat transfer, which is applied in chemical, petroleum, solvent, medicine, food, light industry, textile, metallurgy, coking and other industries. The structure is divided into non-detachable spiral plate heat exchanger and detachable spiral plate heat exchanger.

Selection and principle

Optional material:

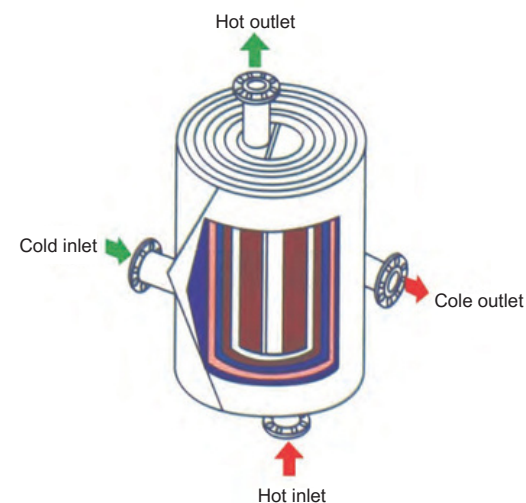
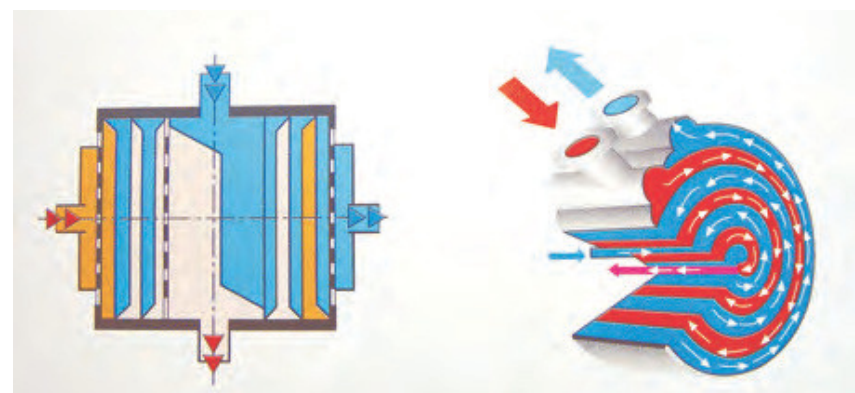
- 1、 SUS304
- 2、 SUS316
- 3、 SUS316L
- 4、 Q235B
- 5、 SUS321

Structure classification:

- Detachable spiral plate heat exchanger
- Non-detachable spiral plate heat exchanger

Pressure rating:

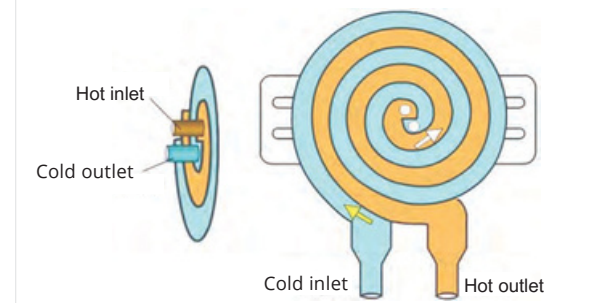
1.0MPa~2.5MPa



Features

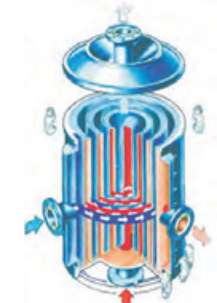
Effective recovery of low temperature heat energy

Two kinds of working medium in the equipment can carry out complete counter-current heat exchange, which is suitable for heat transfer in small temperature difference, for waste heat recovery, to make full use of low temperature heat energy.



High heat transfer efficiency

Heat transfer efficiency is 1 to 3 times of shell&tube heat exchanger and its heat transfer coefficient could be up to 3300W/ (m<sup>2</sup> K).



Strong operation reliability

Two non-detachable channels are welded and sealed to ensure that the two working media are not mixed.



Small resistance

It could deal with large volume steam or gas with low pressure loss; It has self-cleaning ability, because the medium is spiral flow, dirt is not easy to deposit.



Application Show



Product Introduction

Volumetric heat exchanger adopts efficient heat exchange components - floating coil, for heating water in the tank layer by layer and the outlet can reach the set temperature, for the output of domestic hot water. The volumetric heat exchanger with floating coil is a new type of hot water equipment.

Application

It's widely used in the sanitary hot water system of schools, hospitals and hotels.



Design data & Material selection

Design pressure:

Coil : 1.0/1.6MPa

Tank: 0.6/1.0/1.6MPa

Component material:

Coil : Stainless steel 304, Copper

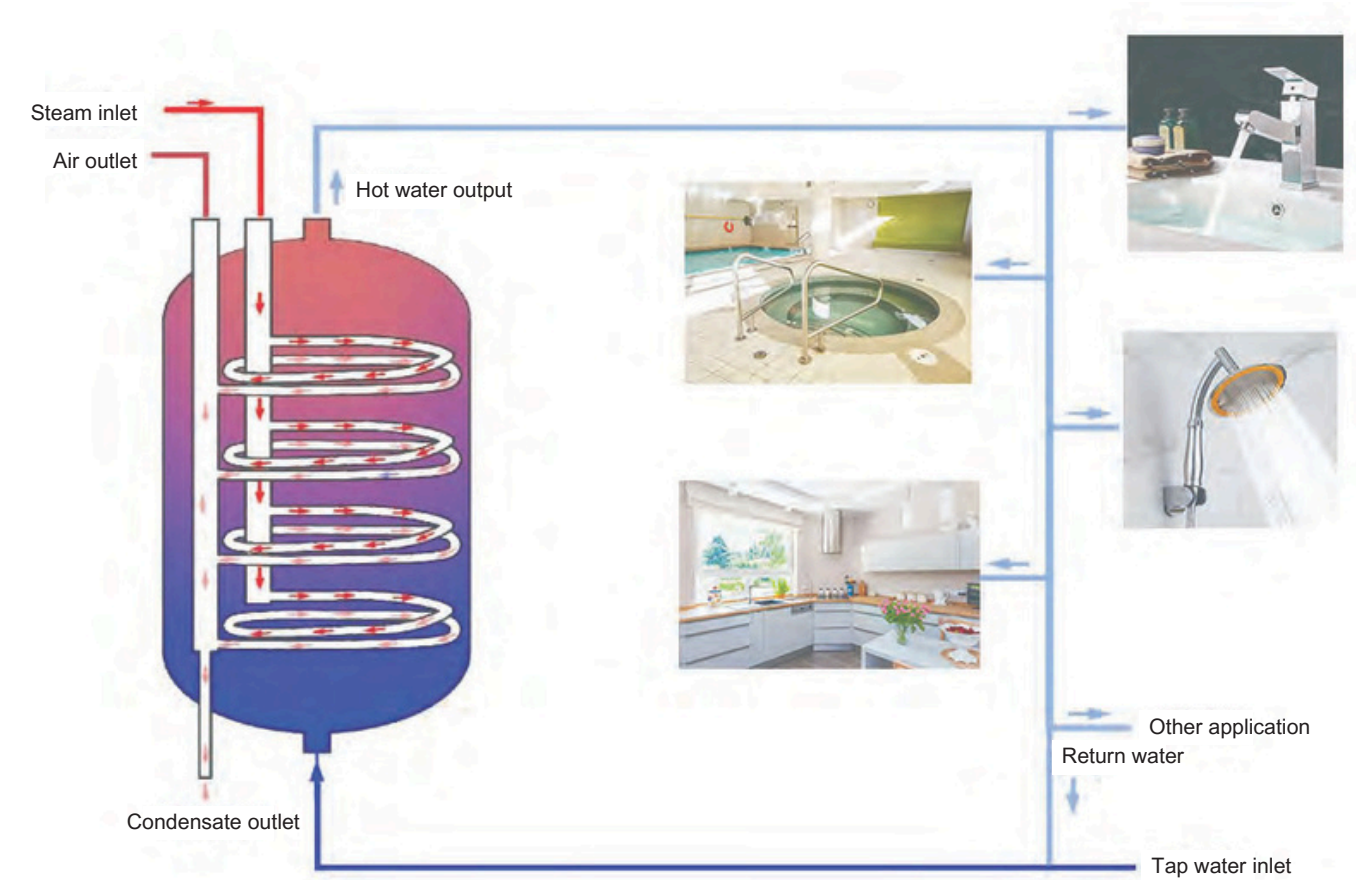
Tank: Stainless steel 304, Copper



Features

Quick start-up	The hot water quickly reaches its outlet at the top of the tank, and the hot water can be supplied without heating most of the cold water.
High heat transfer coefficient	The use of high thermal conductivity components, coupled with constantly tiny shaking of the floating coil during the heat transfer process, can achieve dynamic heat transfer, which has greatly improved the heat transfer performance.
Not easy to scale	The fluid easy to form turbulence has a strong scouring effect on the wall surface of the heat exchange tube, so it is not easy to scale.
No cold water zone; High volume utilization rate	It is always heating the cold water at the bottom of the tank. When the water consumption is below the rated water supply capacity, it will gradually heat all the cold water in the tank. There is no cold water zone at this time to maintain the maximum storage of hot water.
Good water quality	With high heating speed, uniform temperature rise, constant outlet temperature, and no dead water area, there will not be sick bacteria in hot water in the heat exchanger, so as to ensure the good water quality.

Application



**Product Introduction**

Pressure vessel is widely used in different fields. It plays an important role in various sectors of the national economy such as petroleum, chemical industry, energy industry, scientific research and military industry. Due to sealing structure, high pressure and complex media, pressure vessel is prone to explosion, combustion and fire, which endanger the safety of personnel, equipment and property and pollute the environment. At present, pressure vessel is listed as an important inspection product in China and abroad, designated by the state specialized agencies, which should be in accordance with the national regulations and standards to implement supervision, inspection and technical inspection.

**Pressure vessel grades provided by Tranp include:**

- D1 (Pressure Vessel of Class I)
- D2 (Low and Medium pressure Vessel of Class II)
- ASME certified product series

**Main pressure vessel products:**

- Heat exchange pressure vessel: volumetric heat exchanger, shell and tube heat exchanger, etc.
- Reaction pressure vessel: reaction kettle, decomposition tower, synthesis tower, etc.
- Separation pressure vessel: separator, absorption tower, drying tower, sub-cylinder, etc.



35T Marine low pressure CO2 tank



Dry powder pressure vessel tank



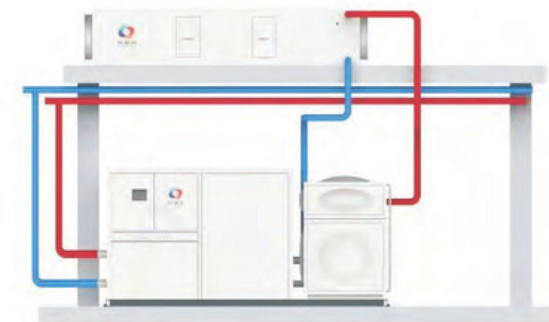
Air tank



Nitrogen cylinder and nitrogen buffer tank



Gas tank



Tunnel air conditioning



Air energy heat pump unit



Water cooled screw chiller



Air cooled screw chiller



Circular counter current cooling tower



Square cross-flow type cooling tower

