

# All-welded Plate Heat Exchanger "XP Series"



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Our plate type heat exchanger (PHE) named as Xenesis Plate (XP) Series have unique heat transfer plate pattern and flow channel. It is all-welded PHE without gasket for the heat transfer plate part.

High heat transfer performance and low pressure loss, enabled by its characteristics, decrease pump's power consumption needed for transferring heat exchange fluid, compared to conventional plate type heat exchanger.

Unlike conventional plate type heat exchanger that uses gasket, our PHE does not use gasket between heat transfer plates. It is all-welded type, which the heat transfer plates are welded to form a panel block, so it is possible to apply to severer temperature, pressure environment and where gaskets are soaked into fluid. It can be said that the heat exchanger has both characteristics of plate type and shell & tube type.

Also, complicated overhaul is unnecessary for the maintenance, and can be cleaned with easily handled chemicals in a short time.

We have several patterns of plate to enable designing and manufacturing various size of heat exchanger that materialize high transfer performance in heat exchange of gas and liquid, between different working fluid, and under the conditions accompanying phase change such as evaporation and condensation.

## Use Condition

- ▶ Temp. Condition : -30 ~ 300°C
- ▶ Max. operating pressure : 4MPa
- ▶ Max. attainment pressure : 30~40MPa

It may differ according to effective application conditions. Other working conditions will be considered. Please contact us for details.

## Applications (examples)

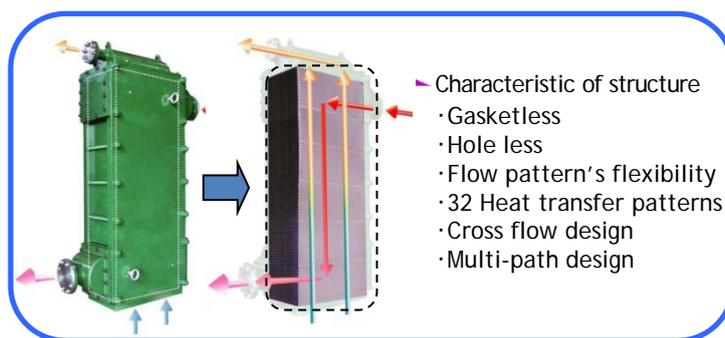
- ▶ Seawater cooler for steel/oil refinery plant
- ▶ Pre-heater for heat recovery system
- ▶ Cooler for turbine oil, etc.
- ▶ Various heat exchangers for chemical plants
- ▶ Evaporator and condenser of power generation system using temperature difference
- ▶ Heat exchanger for exhaust gas heat recovery

## Materials

- ▶ Titanium(Gr.1 & Gr.2) etc
- ▶ SUS316L
- ▶ SUS304L

## Delivery Record

- ▶ Steel plant
  - Desulfurization process seawater cooler
  - Condenser for Crude light oil refinery process
  - Raw oil pre-heater for Crude light oil refinery process
  - Power generation process coolant water seawater cooler
  - Heat recovery for CO2 recovery plant
- ▶ Ocean Thermal Energy Conversion apparatus (Kume Island, Okinawa Pref. Japan)
  - Evaporator and condenser for power generation
- ▶ Various plant facilities
  - Gas cooler (nitrogen mixture gas)
  - Various cooler (petroleum product, antifreeze, effluent etc)
- ▶ Various research institute
  - Evaporator and condenser etc for power generation by temperature difference

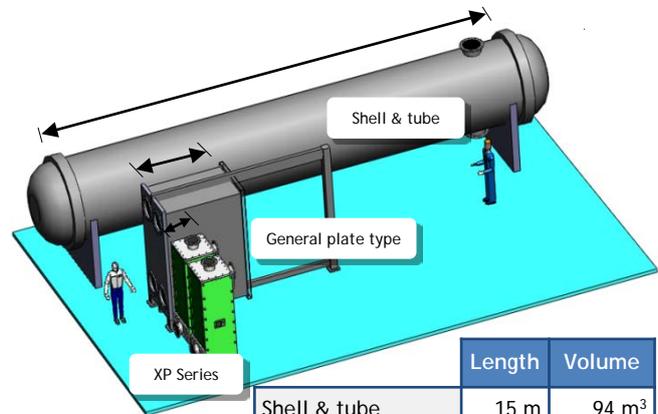


# Merit for consumers

## Space-saving

XP series have high heat transfer performance, and the size is compact, so it is space-saving, compared to shell & tube type and general plate type heat exchanger.

Especially, compared to shell & tube type, performance will advance remarkably, so it is not only space saving but also number of heat exchangers needed will be reduced drastically in some cases. In that case, construction cost and facility maintenance cost will be reduced drastically.



	Length	Volume
Shell & tube	15 m	94 m <sup>3</sup>
General plate type	5 m	30 m <sup>3</sup>
XP Series	2 m	11 m <sup>3</sup>

## High pressure resistance and low maintenance

Leakage of fluid will not occur even if it is under high pressure such as 4MPa, for heat transfer plates are welded and unified. We can suggest safe, high performance and compact heat exchanger for various refrigerant, and process that handle flammable and toxic gases etc.

For maintenance, large scale gasket exchange is unnecessary, but cleaned by chemical feeding. Therefore, workload will be reduced significantly, and cost for component replacement is almost zero.

It can be said that XP series is certainly a heat exchanger that have both characteristics of plate type and shell & tube type.



【Safety review by in-house test】

## Other superiority

We have other various superiority, so we can make proposals to improve profitability.

XP series have various superiority compared to shell & tube and conventional plate type, so depending on specifications and operating conditions, we can make various proposals to improve profitability by installing XP series.

- ▶ Cost for exchanging gaskets and cleaning are overwhelmingly low, and depending on operating conditions, lifetime cost (=initial costs + running costs) may reverse with that of conventional plate type in 5 to 6 years.
- ▶ Pinch temperature is low, compared with tube & shell type, so amount of evaporation and condensation grow under the same operating conditions, and production of chemical increase and improve profitability compared with shell & tube type.
- ▶ Pressure loss is about 2/3 of that of conventional plate type, so it is possible to downsize and reduce the volume of adopting pump.
- ▶ Our products are high in flexibility in designing, so it is customizable to meet customer's request. Also, we can offer technical services such as performance confirmation test simulating special circumstances.

- If you would like to improve profitability by replacing shell & tube type etc with our XP series.
- If you have problem in maintenance cost and leakage, and considering measures.



We will diagnose if XP series are serviceable.  
Please fill in the following form and contact us.

Application (Name of System)					
		Hot Side		Cold Side	
Fluid Name					
Total Heat exchanged	kW				
Total Fluid Flow	m3/hr				
Operating Temperature	°C	In	Out	In	out
Operating Pressure	k PaG	In	Out	In	out
Pressure Drop Allowed	k Pa				
Max / Test Pressure	k PaG				
Gas-to-Liquid Ratio	--				
Size of Joint		In	Out	In	out
Company Name					
Name of Department / Person in charge					
Contact		TEL :		E-mail :	



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