



HISAKA 誠心

...WITH OUR SINCERITY
"MAGOKORO"

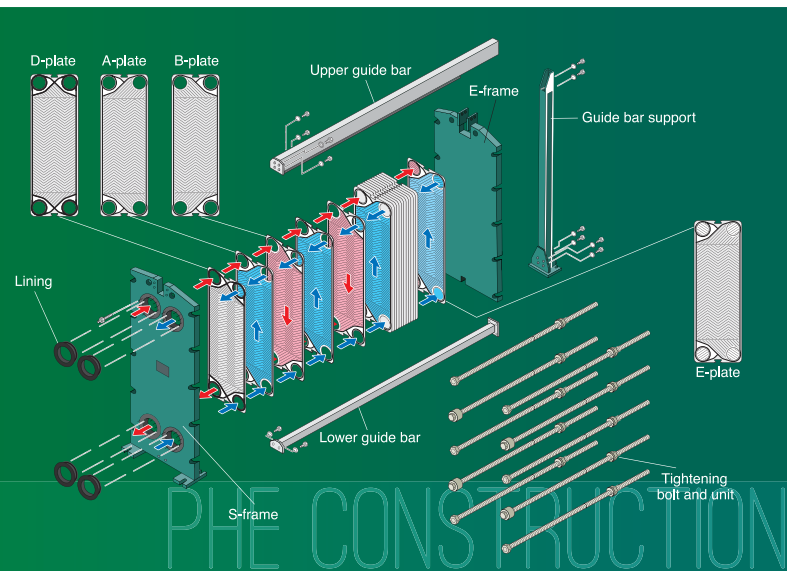


INDUSTRIAL CATALOGUE

HVAC&R

Special Plates Design for Individual Applications,
To Support HVAC&R Technology

HISAKA
PLATE HEAT
EXCHANGER
FOR HVAC APPLICATION



The Plate Heat Exchanger has the highest heat transfer efficiency among various types of heat exchangers and has been applied in various industries, i.e., chemical, food, marine, and many other general industries. Hisaka plate heat exchangers have various types of models and the AS-series is particularly designed for the HVAC industry.

GENERAL SPECIFICATION:

- Pressure Rating : Full Vacuum to 30kg/cm²G
- Temperature Rating : - 30°C - 180°C
- Flow Rate / Unit : 0.1m³/hr to 5000m³/hr
- Plate Material : 304SS, 316SS, Titanium and many others
- Gasket Material : NBR, EPDM and many others

**AS-Series
PLATE HEAT EXCHANGER (PHE)**

Hisaka Works has developed various characteristic plates in order to accommodate the wide variety of process conditions. Among these, the AS-Series has been developed as the most suitable plate heat exchanger (PHE) for high NTU operating conditions. The term NTU, or also known as 'Number of heat transfer units', indicates high heat transfer effectiveness (large temperature change between the inlet and outlet against very small temperature difference between two flowing mediums as shown in Figure 1 and Figure 2 at Page 4). The adoption done to a high-NTU plate is to utilize a pattern with a shallower plate depth and a smaller pitch. This ensures an excellent heat transfer performance. This is the specialty of the AS-Series plate heat exchanger which has been developed for the purpose of achieving the extremely high NTU with the unique plate pattern.



AS-SERIES DIMENSIONAL OVERVIEW

| Main Specification | | | Standard Frame Type | |
|---------------------------------|-------------------------|------------------------|---------------------|----------|
| | | | Height/Width | NP Model |
| AS 10 | Max. flow rate per unit | 83m ³ /h | | |
| | Connection diameter | 50mm | | |
| AS 20 | Max. flow rate per unit | 220m ³ /h | | |
| | Connection diameter | 100mm | | |
| AS 30 AS 30S | Max. flow rate per unit | 445m ³ /h | | |
| | Connection diameter | 150mm | | |
| AS 40 | Max. flow rate per unit | 940m ³ /h | | |
| | Connection diameter | 200mm | | |
| AS 70 | Max. flow rate per unit | 1,340m ³ /h | | |
| | Connection diameter | 250mm | | |
| AS 80 | Max. flow rate per unit | 2,300m ³ /h | | |
| | Connection diameter | 350mm | | |

A DEDICATED HIGH PERFORMANCE PHE FOR DISTRICT COOLING (DCS)

The AS-Series has been developed as the most suitable HISAKA Plate Heat Exchanger corresponding to larger temperature change of up to 10°C while the conventional heat exchanger can only provide a 5°C to 7°C. HISAKA Plate Heat Exchangers are able to do so because we have produced a unique and excellent plate pattern that is a class above the ordinary plates.

The AS-Series utilize a closed loop circulation system, a system providing for operations with large temperature change (High NTU) between flowing medium at the inlet and outlet temperatures, as shown in figure 2. It also demonstrates that there is a very small temperature difference between the two flowing mediums. With this unique feature, the cost of the HVAC system can be lowered because of the low flow rate along with high NTU characteristics. In explanation, the build-up cost and operational costs which includes the running cost of the building are also lowered. The most economical and optimum designs are made available by our host computer from Japan to produce the best plate heat exchanger through our unique variety of heat transfer plates. HISAKA plate heat exchangers, producing quality and certified by our reputation.



AS SERIES

As shown in the table, there is a reduced flow rate which allows smaller piping size. The reduced piping size will result in decreased piping costs, lesser amount of piping insulation material, and lower piping pumping energy.

With the reduced flow rate, one can expect for reduce in the user-side fan energy and also the smaller duct size too. This again, is reducing costs. The AS-series, on the whole, creates such possible benefits due to its optimal NTU designs, with NTU 5 to NTU 10, producing an excellent heat recovery performance yet only optimizing a compact space.

In conclusion, the significant cost saving benefits the AS-series can accommodate in many applications such as DCP, ice storage system, and free cooling.

And it contributes to energy saving and reduce running costs in many applications such as DC, ice storage system and free cooling.

Figure 1:

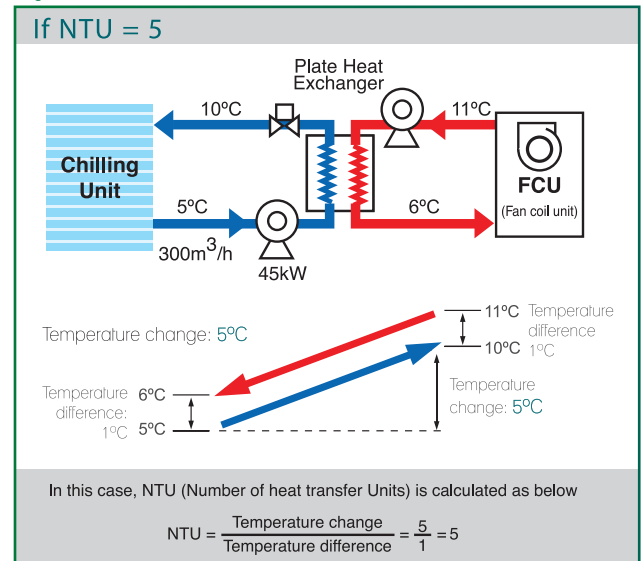
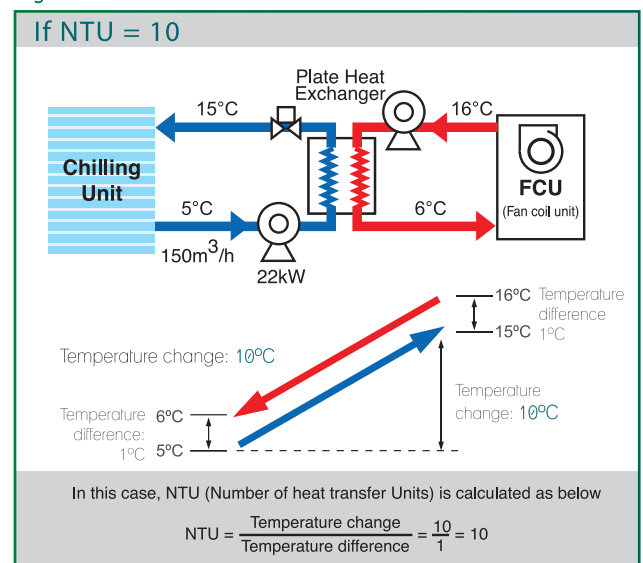


Figure 2:



An example of cost down for installation and operating costs by changing flow rate:

| Cost Down Item | NTU=5 | NTU=10 | Advantage |
|----------------------------|---------|---------|---|
| Circulating Flow Rate | 300m³/h | 150m³/h | Lower Flow Rate (50% Deduction) |
| Piping Size | 250A* | 150A* | Smaller Piping Size and less insulation (40% cost down) |
| Piping Energy (head : 20m) | 30kW* | 15kW* | Less Pumping Energy Consumption (50% cost down) |
| Piping Energy (head : 30m) | 45kW* | 22kW* | Less Pumping Energy Consumption (50% cost down) |

PRESSURE BREAKER BY HISAKA

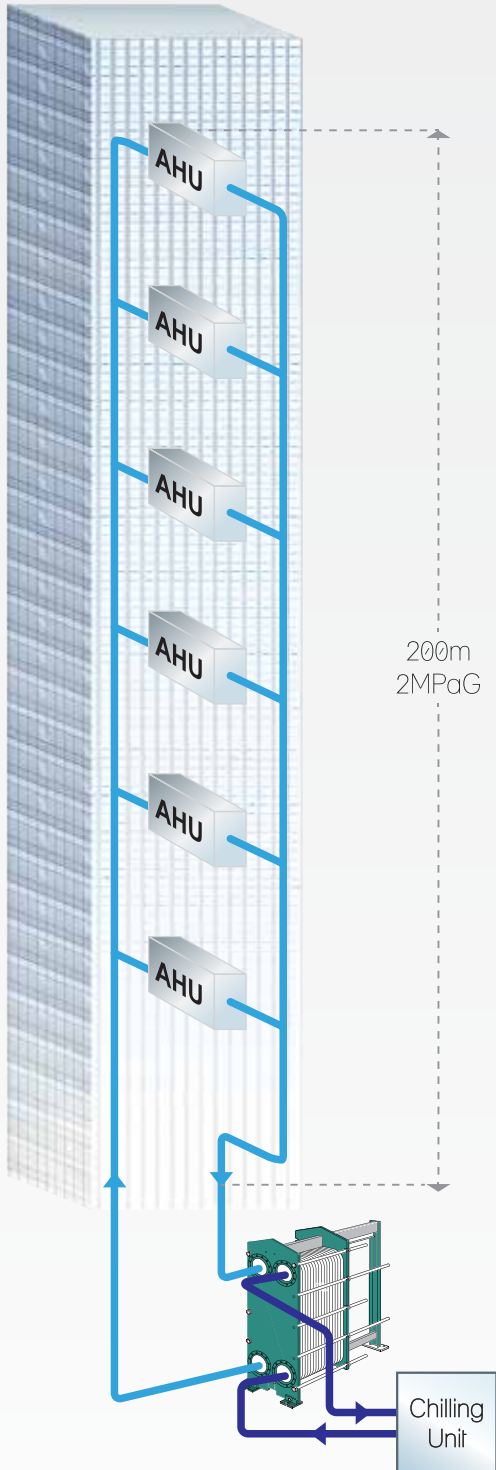
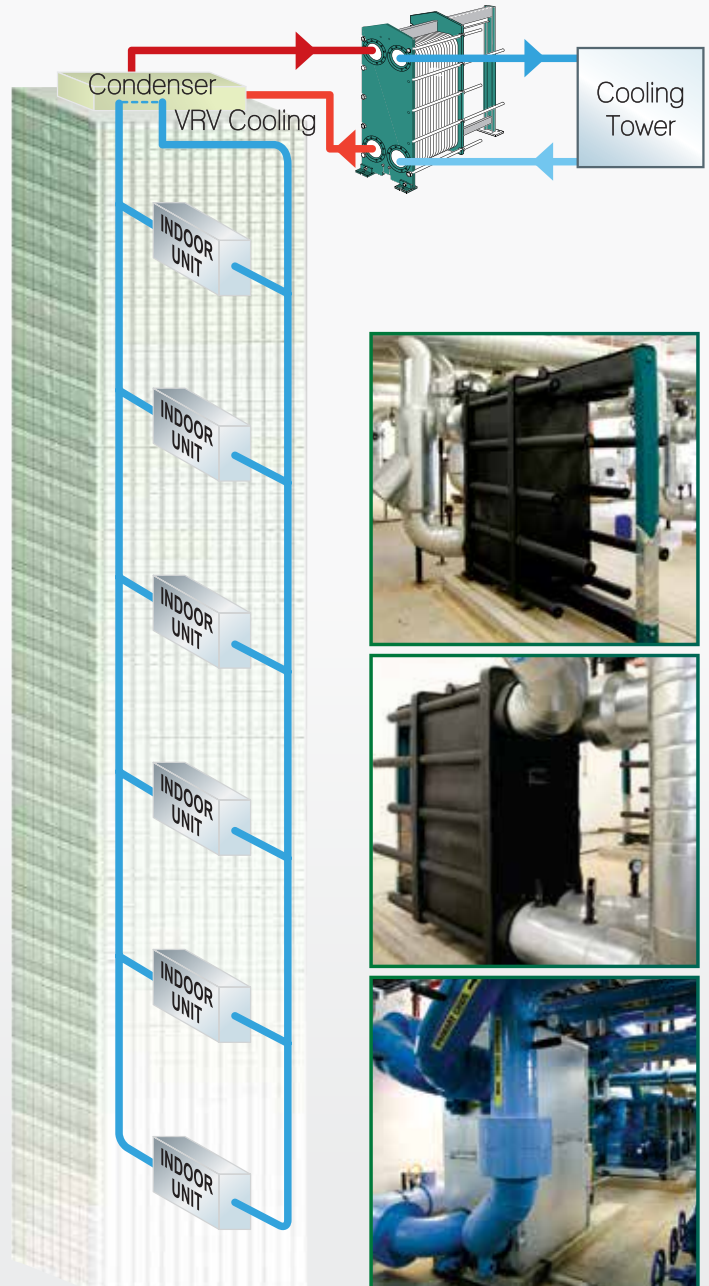


Plate heat exchangers must be extremely durable and able to withstand high pressure. One major feature of the "AS Series" is that it has strong pressure resistance together with super high NTU characteristics. For example, with successively tallest buildings, the pressure of the circulation water required for air conditioning increases, resulting in a great load on the heat source. In such a case, a plate heat exchanger reduce the pressure on the heat source, lower the risk of breakdown.

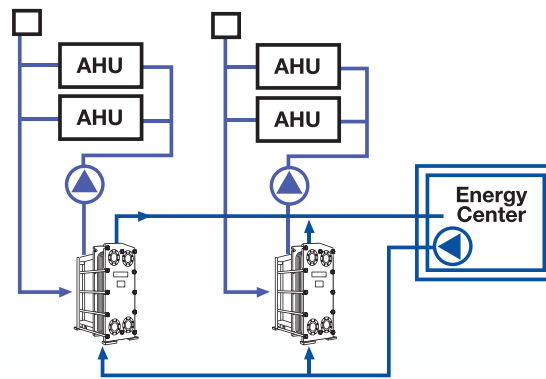
GREEN BUILDING CONCEPT



The conventional way of air conditioning emits hot air. The modern way prevents such emission with the use of the plate heat exchanger through water cool air conditioning system.

- Suitable for office tower block
- Variable heat load usage
- The centralized air con system is cooled by the plate heat exchanger

DISTRICT COOLING PLANT

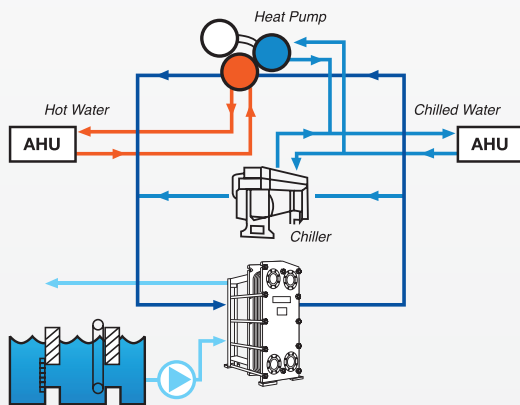


TOKYO METROPOLITAN GOVERNMENT



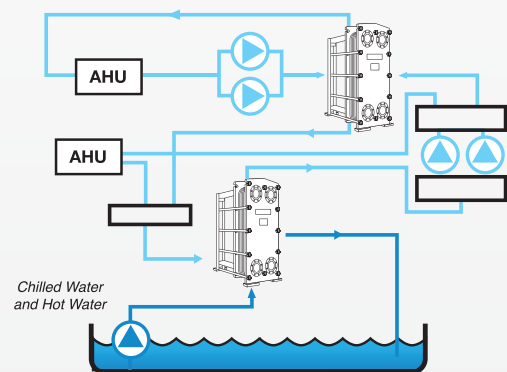
PUTRAJAYA GREEN BUILDING

PLATE HEAT EXCHANGER FOR UTILIZATION OF NATURAL ENERGY



HONG KONG CONVENTION AND EXHIBITION CENTRE

PLATE HEAT EXCHANGER FOR ACCUMULATING BATH



SHIRATORI MUSEUM PLAZA

HISAKA CREATING A COMFORTABLE URBAN ENVIRONMENT

Global warming is constantly a serious problem in our modern world. The results of the pace of industrialization require a need of more green ideas. At Hisaka, plate heat exchangers are regarded as a key technology that powerfully supports the society to generate optimum productivity of results such as DCP, cogeneration systems, and heat pump systems. Hisaka offers higher efficiency and higher energy conservation while diligently constantly developing better plate technologies. HISAKA continues to labour for a higher improvement not only to our products but through the entire organization, we ensure continuous innovation and originality for Plate Heat Exchangers



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PLATINUM
PARK
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HISAKA HVAC&R



**WE are
HERE**
HISAKA, YOUR TRUSTED ASIAN BRAND

www.hisaka-asia.com

PRODUCT CATALOGUE

HVAC & R



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