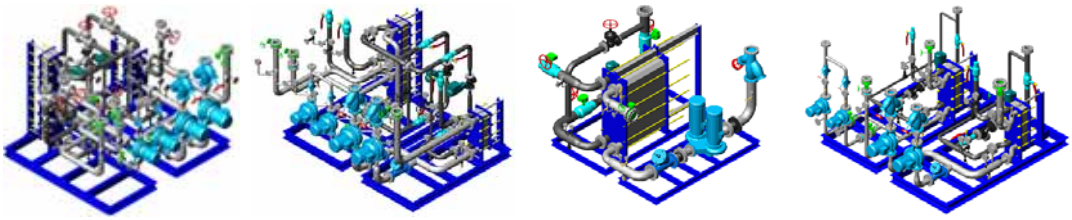
JANGHAN Engineers, Inc.

CBX

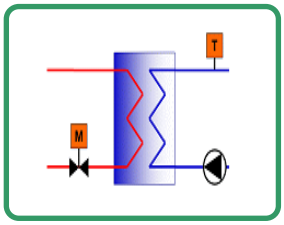
District Heating Unit



JANGHAN
ENGINEERS, INCORPORATED.

District heating unit

JANGHAN's CBX



CBX, Compact Brazed heat eXchanger unit, comprise highly integrated prefabricated modules, where the modules themselves may be boilers, pumping stations, substations, metering device, automation equipment, information and management systems, etc. The modules and their components are tested at the factories prior to delivery. CBX, which is a very flexible system, can be used for building an entirely new district heating system or for renovating and extending an existing system, and is thus able to a wide range of consumer requirements.

Sensor & Gauges

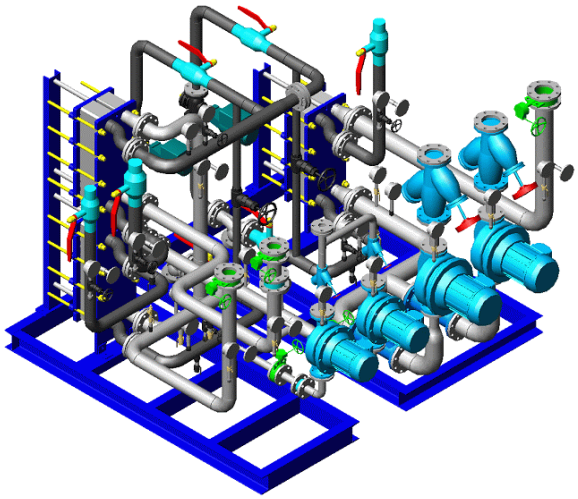
The various instruments, i.e. temperature transmitters, switches and indicators, pressure transmitters and switches indicators match the required automatic function and indicating function

Control Valve

Electrically operated control valve is furnished with equal percentage control and spring return to fail safe position. as secondary supply temperature.

Pump

The circulation pump for heating or hot tap water is in-line electric pump with cast iron pump body.
Max. operating pressure: 16 bar, Max. operating temperature: 120 ºC .



Controller

The controller is possible to operate heating system or hot tap water system efficiently and economically based on control algorithm to be able to optimize sensing temperature and operating control valves to suit various conditions.

Strainer & Valves

The CBX is furnished with high-grade strainers for protection of pump or heat exchanger. The stop valves are installed in suitable location so that several essential components of CBX can be checked or repaired easily

Heat Exchanger

High quality JANGHAN's compact plate heat exchangers (gasketed or brazed) are designed with easy access for regular servicing and for a long, low maintenance lifetime with low life-cycle cost. Our compact plate heat exchangers offer may advantages.

Pipe & Insulation

Prefabricated module makes piping design compact so that installation space can be minimized and maintenance space can be secured effectively.
- The heat exchanger installation is furnished with additional piping used for CIP(Cleaning In Place)
- Piping on secondary side is furnished with safety valve.
- Insulation is suitable for environment condition and is possible to minimize heat energy loss.

District heating unit

CBX's Excellency

Conventional engineering method

The conventional engineering method on district heating have no regard for components matching, only considering design capacity.

- Owing to piping and welding in field, expensive cost and long term of construction
- Large Installation space, low energy efficiency and expensive maintenance.

JANGHAN's CBX engineering method

➢**Pre-Engineered, Optimum Design**
CBX engineering method consider that optimum design have system efficiency and specific control.

➢**Factory-Assembled**
We supply suitability production as assembling and test, inspection at factory.

➢**Pre-Fabricated**
Owing to decreased piping and welding work in field, low cost and short tem.

➢**Compact Design**
Utilized compact brazed heat exchanger and indirect configuration as 20% space down.

➢**Minimized Cost/Performance**
By higher productivity as manufacturing and inspection standardization .

➢**High Energy Efficiency**
Improving total energy efficiency by optimized control engineering.

➢**Single Source Responsibility**
JANGHAN's CBX have warranty on the whole production during life cycle and supply maintenance.

Key component

Hot water temperature control has lately attracted considerable attentions. Temperature fluctuations are uncomfortable for the customers, and there is a risk of scaling if the temperature is too high. the control system consist of a controller, an actuator, a valve and some temperature sensors.

➢ **Controller**

- The controller is the central unit of the control system. It receives signal as ambient temperature form the sensors, compares the weighted measured value with pre-defined valve for the process, automatically adjusts the set point. Also the responsiveness of sensors is able to adjust.
-Control of hot tap water have right of way at peak, with hot water temporary limited supply to exchanger
-Automatic operation of the circulation pump of hot water**,** On/Off control of the circulation pump of hot tap water by returned temperature of hot tap water

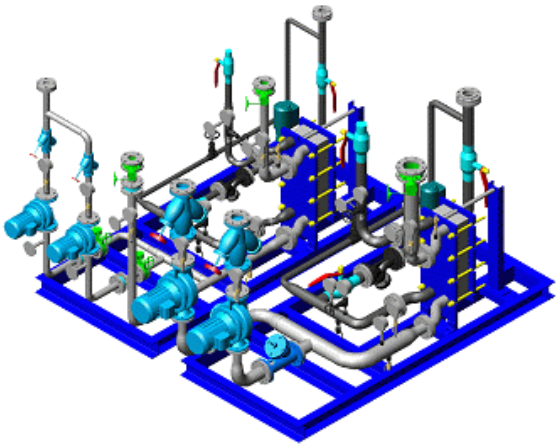
>Actuator and Control valve

-The function of the actuator is to adjust the position of the valve plug relative to the seat, so that it matches the signal received by the actuator from the controller. The actuator is maximum operation pressure up to 16 bar and temperature up to 150 ºC
-The plug valve is the most widely used control valve in district heating station installations.
-The valve have self cleaning and equal percentage, control range is the above 50:1

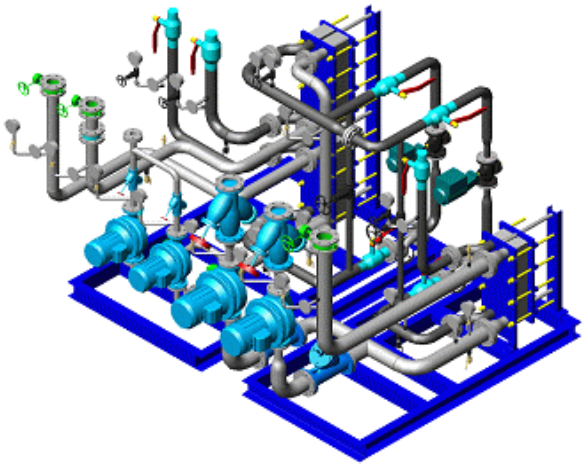
District Heating Unit

CBX's Dimension

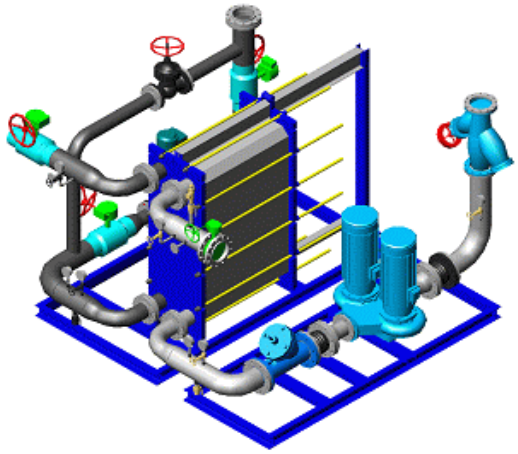
Hot water + Hot tap water (single stage)



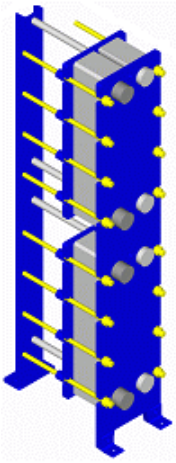
Hot water + Hot tap water (two stage)



Cooling system



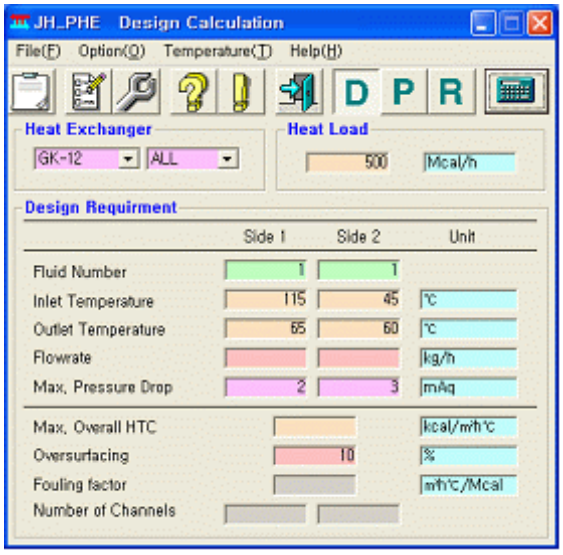
Multiple heat exchanger

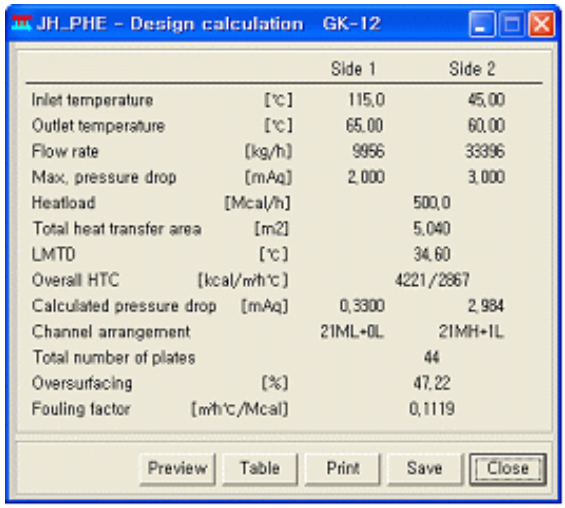


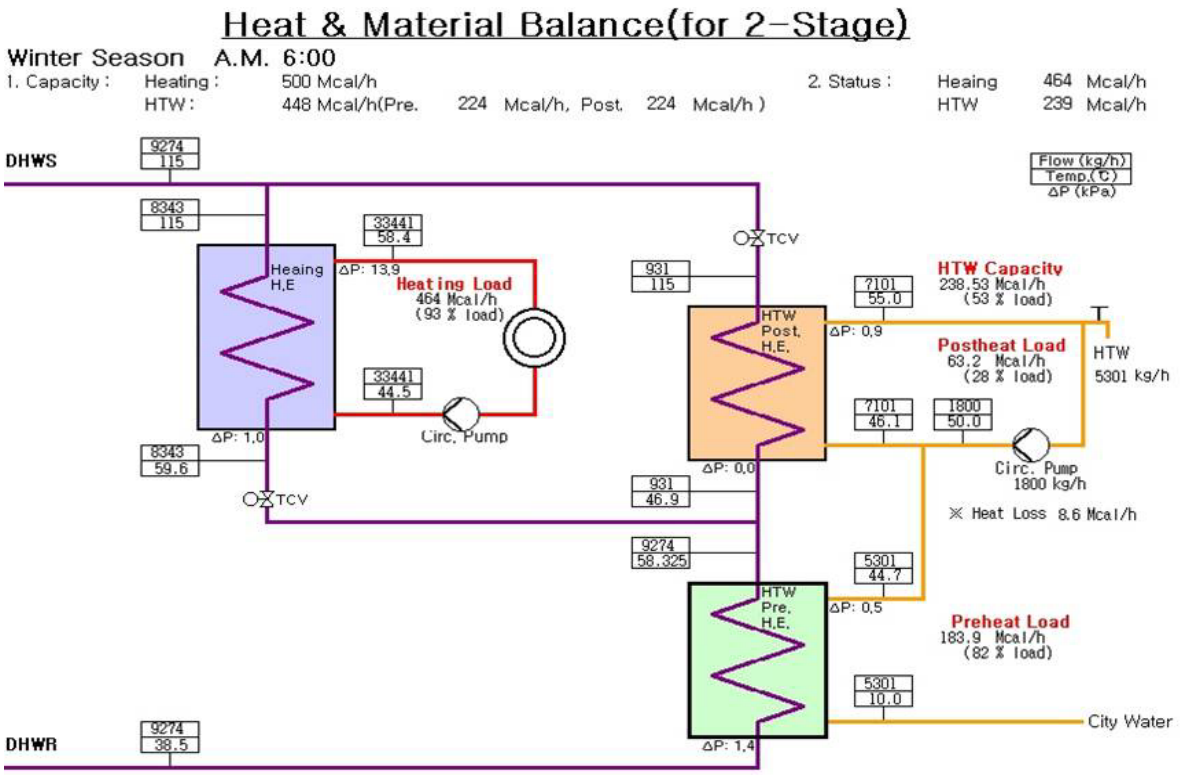
Hot water (Mcal/h)	Pipe size		Pump		TCV	Hot tap Water (Mcal/h)	Pipe size			Pump		TCV	DIMENSION (W x L x H) mm
	1st	2nd	No. (100%)	Power (kW)	Size		1st	2nd Inlet	2nd Outlet	Num. (100%)	Power (kW)	Size	
~300	50A	100A	2	2.2	32A	~300	65A	65A	40A	2	0.2	32A	
~400	65A	100A	2	2.2	32A	~400	65A	65A	40A	2	0.2	40A	2700x3050x2050
~500	65A	125A	2	3	40A	~500	65A	80A	40A	2	0.3	40A	
~600	65A	125A	2	3	40A	~600	80A	80A	40A	2	0.3	50A	
~700	65A	125A	2	3	50A	~700	80A	80A	40A	2	0.3	50A	2800x3100x2100
~800	80A	125A	2	3	50A	~800	80A	100A	40A	2	0.3	50A	

District heating unit

Engineering Program







JANGHAN Engineers, Inc.

District Heat Unit (CBX)

Engineered by JANGHAN

JANGHAN provides all customers with top quality products and services, intelligent solutions and the most dependable

JANGHAN
From the start of our business in 1987,
We devoted ourselves to develop the innovative system & products for hydronics, pumping system, heat exchangers, thermal energy storage, water filtration and environmental protection equipment
,with the challenging spirit of creating new industry standards.
,with the quality products from state-of-the-art production technology.
,with the experienced knowledge to provide solutions and O&M supports.
We are endeavoring to satisfy the customer's requirements and always opening the ears to hear of all your criticism for continuing improvement of our services.

JANGHAN ENGINEERS, INCORPORATED.

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