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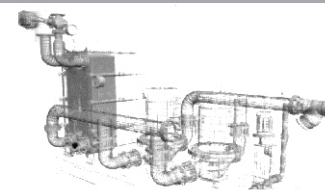


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若设计与规格变更,恕不另行通知。



MPU 系列热交换机组 
Plate Heat Exchanger Unit

诚信立足，创新致远

船舶业、汽车行业，明日助您启航!

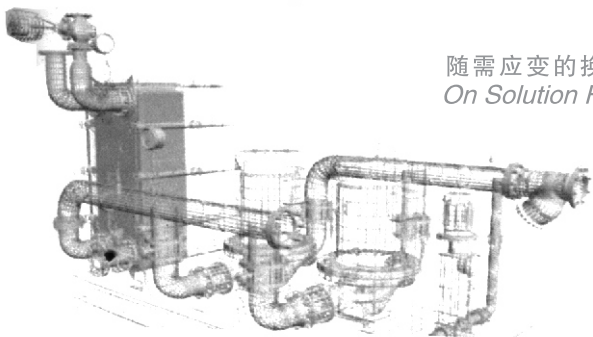
明日依靠先进的热交换技术，在制冷行业、集中供热行业中帮助用户大幅度提升了效率，降低故障率。并为客户提供更安全便捷的高品质服务。

在中国，明日以全方位、立体化的技术和产品。为您全力以赴。



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按需应变的换热解决方案!
On Solution For Heat Exchanger

公司简介 About Us

江阴市明日机械有限公司位于历史韵味悠久、人文荟萃、文化底蕴深厚的江南水乡—江阴市霞客镇，公司已通过 ISO9001质量体系认证，ISO14001环境质量体系认证，为AAA资信企业。

江阴市明日机械有限公司专注于研发和生产板式换热机组，拥有多年研发和设计制造的热工工程技术人员。公司产品为各行各业所应用，并提供换热机组的维修服务及技术咨询，做到专注、高效、优质、节能、环保。

江阴市明日机械有限公司联合了国内著名的科研机构，从市场的角度来规划我们的研究，生产，销售和服务。公司引进国外先进的制造技术，产品广泛应用于酒店、商场、医药行业、冶金行业、石油化工、制冷空调和暖通行业、汽车行业、电子行业、电力行业、船舶行业、光伏行业等领域。

公司自创办以来一直秉承“卓越质量、专业资质、打造品牌的经营理念;我们坚信：只有不断提高，才能不断前行！

愿我们携手并肩，共创辉煌！

Jiangyin Mingri Machinery Co.,Ltd is located in Xiake town Jiangyin City. Our company is founded in 2006, established as a professional and world-class manufacturer of plate heat exchanger units with high quality and cost-effective price. We have furnished with advanced equipment and technology from customers in Germany, Japan, South Korea, and Taiwan area.

Jiangyin Mingri Machinery Co.,Ltd focus on the research and development of producing plate heat exchanger units. With years of research and production experience, The Jiangyin Mingri Machinery Co.,Ltd has got the ISO9001 quality system Certification, ISO14001 environmental quality system certification, AAA credit enterprise. Our products are used in various of market. Also we provide heat exchange unit maintenance service and technical advice, Our target is being dedicated, efficient, high quality, energy saving, environmental protection.

The Jiangyin Mingri Machinery Co.,Ltd combined with the domestic famous scientific research institutions. We do our research, production and sales based on the market reseaching. The products of Jiangyin Mingri Machinery Co., Ltd are widely used in hotels, shopping malls, medicine industry, metallurgical industry, petrochemical industry, air conditioning and refrigeration industry, automotive industry, electronic industry, electric power industry, shipping industry, photovoltaic industry, and other fields.

Our principle remains unchanged since we founding Mingri Machinery “Excellent quality, professional qualifications, building brand We firmly believe that “Only by constantly improving, The Mingri Machinery can keep moving forward!” Let's Sincere cooperate, and create a brilliant future.

明日板式换热机组 MINGRI Plate Heat Exchanger Unit

购置一台明日板式热交换机组只是一个开始，并不代表完结。我们的客户关系是长久的，从选型、安装到后台支持，再到提供顾问服务及技术推进可见一斑。我们对产品品质的坚持犹如对客户的服务承诺及支持般重要。除了优良的产品品质，用户服务也是明日胜人一筹的表现。

我们以“用户满意”为标准，拥有辐射全国的营销网络，充分利用产品质量优势、成本优势和用户技术服务优势，以用户为中心，致力与用户结成可持续发展的伙伴关系。在全国各大中型城市建立销售服务机构，战略用户实现24小时内到现场服务，完善为用户提供个性化的”一对一”的营销服务。

欢迎进入高端的换热机组世界。

明日为用户提供快捷及完备的服务支援。当中包含：

1. 接到通知提供原装零部件

在全国范围内所建立的有实践经验和工作迅速有效的备件队伍，能为您24小时、一周提供所需备件，同时会有更多的办事处储存我们的备用零件。

2. 二年保修期

我们的产品提供二年保修期。

3. 现场安装调试服务

我们会在送货上门的同时为您提供全面、周到的现场服务。

4. 预防性维护保养，消除意外故障停机

我们还提供定期的预防性维护保养，最大程度地消除意外故障停机给您带来的损失。

5. 技术咨询和热线支持

我们还提供售后技术咨询和热线支持。

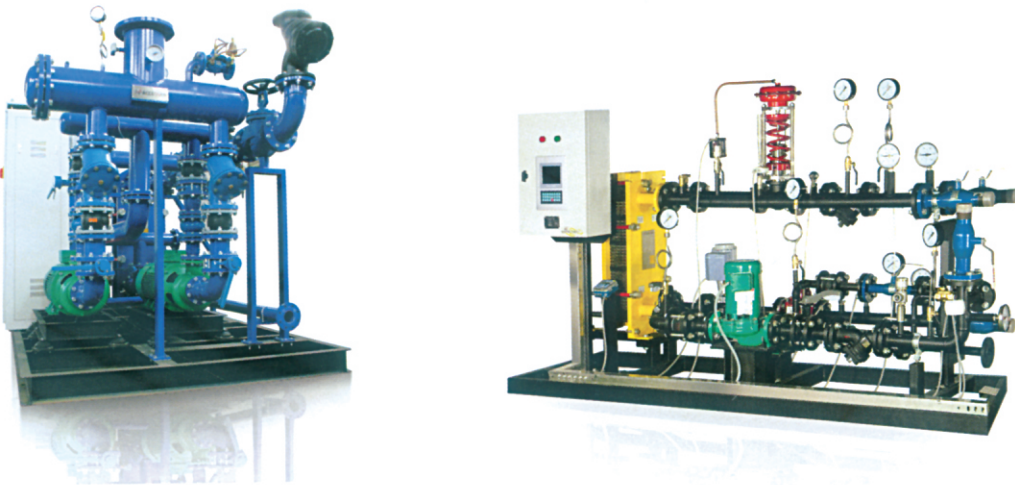
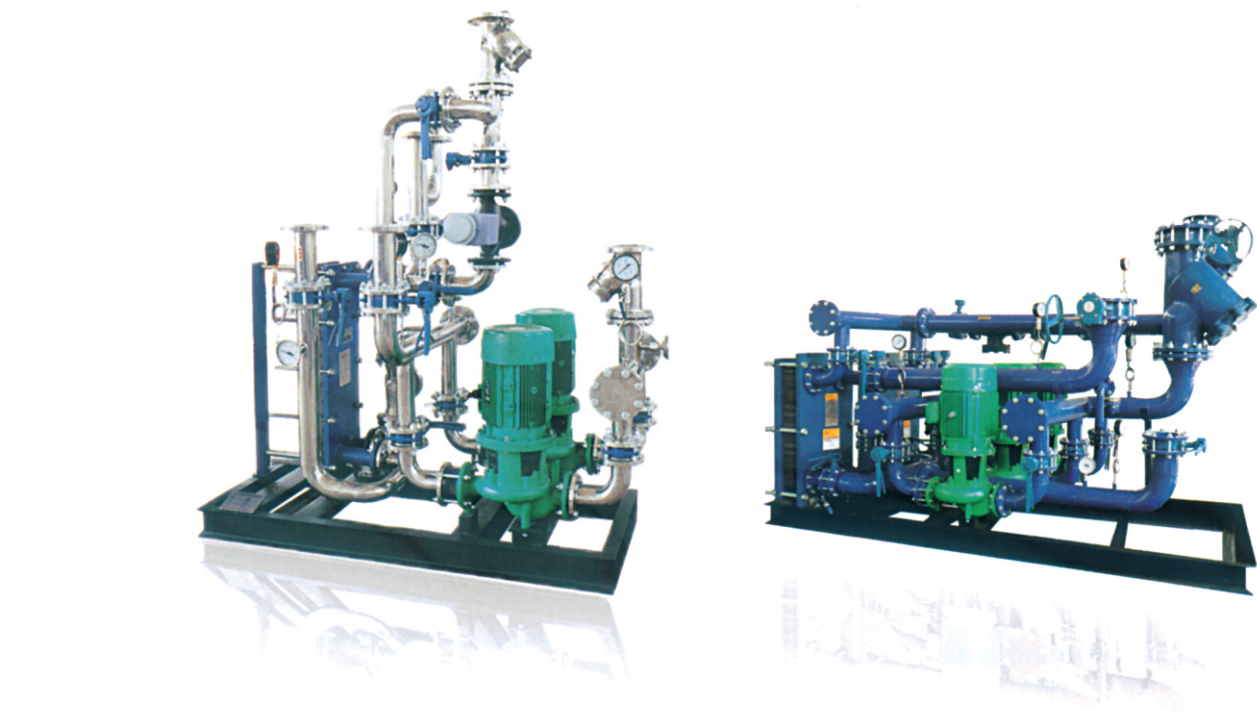
It is only a start for purchasing an Mingri plate-heating exchanger unit.The relationship between end user and the company is long-term one. which includes the service of model selection, assembly, back-up. consultancy and technology promotion. We treat the quality of product as important as the commitment and support to the service to end use. The end user service is another advantage of Mingri besides the excellent quality. On the basis of the standard of atisfaction to end user with the nationwide marketing network, utilizing the advantages of quality of product, cost and technology service to end use, focusing on end user, the company is dedicating in forming a continuous developing partnership with end user. In each large & middle-size city of China, the company established sales service office to provide 24-hour on site service for strategy end user and one-to-one sales service for end user. Welcome to the world of high-class heat exchanger unit.

Mingri provides rapid and perfect service support for end user, of which includes:

1、provide original spare parts upon receiving notice
establish spare parts team with practical experience and high efficiency in nationwide range to provide you required spare parts in 24 hours a day & seven days a week. Meantime more offices store our spare parts.
2、warrantee period of 2 years
we provide a 2-year warrantee for our product
3、assembly and commissioning service on site
we will provide complete and good service on site for you while delivering the product.
4、preventive maintenance eliminates shutdown due to accidental failure
We also provide periodically preventive maintenance to extremely eliminates the damage from shutdown due to accidental failure.
5、technical consultancy and hotline support
we also provide after-sale technical consultancy and hotline support.

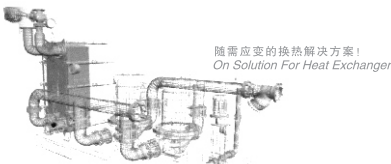


MPU系列机组概述及特点：Introduction and features of MPU series unit



- MPU系列换热机组是集成了板式换热器、循环泵、补水泵、温度计、压力表、各种传感器、管路和阀门及工控于一体的成套区域供热控制设备，并加装了补水系统、定压系统、水处理系统、变频流量控制系统、热量计及网络通讯控制系统，以期实现不同档次的控制功能配置需求。
- 同时，结合明日公司领先的技术以及丰富的经验，标准化模块化的设计，和明日公司站在行业的前沿的高度选配机组的配件，如水泵，阀门及工控等工作，统筹兼顾，为用户量身定做更适合用户工况的性能优良的成套换热机组。
- MPU系列换热机组，包括工控在内，机组整机出厂，出厂前做冷态运行，用户只需现场安装四到五根管线和一根电源线到机组的电控箱，大大减少了用户现场的工作量和用户的工程费用，并极大地缩短了用户的工期。
- MPU系列机组紧凑的结构设计，极大地节省了用户的宝贵的占地面积及基建费用。
- MPU系列换热机组的高度自动化设计，真正做到无人值守全自动安全运行、远程监控，最少地占用用户的日常操作人员，节省人力资源。
- MPU系列换热机组的可靠的元器件的选配，具有优异的性能价格比及高度的运行可靠性，真正做到免维护，终身保修。
- MPU系列换热机组的调试，模块化设计的结构模式，机组的调试运行，方便、快速、直接，无需任何特殊工具。
- MPU系列换热机组的程序化设计的运行模式，简捷直观，人性化设计的人机界面，对操作人员极少的专业技能的要求即可熟练掌握。

- MPU series heat-exchanger unit integrates plate type heat exchanger, circulation pump, water supply pump, thermometer, pressure meter, various sensors, pipeline and valves as well as complete set of regional heating control equipment integrated engineering control, with water supply system, set pressure system, water treatment system, frequency conversion flow control system, calorimeter and network communication control system in addition, to meet the requirements of different grades.
- In the meantime, in combination with Mingri advanced technology and rich experience, standardized modularized design, as well as the spare parts of the unit that selected by Mingri such as water pump, valves and engineering control, the company, making overall plans and take all factors into consideration, produces particular complete set of heat-exchanger unit with excellent performance for end user.
- MPU series heat-exchanger unit including engineering control is run at cool condition in whole set before it leaves factory while end user only needs to assemble four to five pipeline and one power supply wire to the electricity control case of unit, which largely reduces the work of end user at job site and engineering cost, as well as shortens project period for the end user
- The compact structure design of MPU series heat-exchanger unit extremely saves land area and construction cost.
- The high-level automation design of MPU series heat-exchanger unit bring it to true that without anyone to supervise. it runs automatically and safely with remote monitoring and minimum operators of end user.
- With the reliable selection of elements of MPU series heat-exchanger unit. the product has excellent performance and high operation reliability to achieve real repair-free and guarantee for life.
- With a modularized design, the commissioning of MPU series heat-exchanger unit is convenient, rapid, direct and without any special tool.
- The operation mode of the routinization of MPU series heat-exchanger unit, with humanistic design of the surface between human and machine, is easy to be mastered even by those people who have only few skills.



MPU系列机组配置：The assembly of MPU series unit



MPU系列换热机组的配套器件，
均具有一定的行业代表性的产品：

- 明日公司板式换热器，密封胶条免粘搭扣式和嵌入式垫片结构；
- 芬兰NAVAL的焊接式球阀，零泄漏终身免维护；
- 丹麦GRUNDFOS、德国WILO或EAST管道循环泵，金属密封，噪音小，寿命长，终身免维护；
- 丹麦Danfoss蝶阀及止回阀及蒸气底阀及过滤器；
- 英国SPIRAXSACARCO疏水器及减压阀及安全阀；
- 丹麦KAMSTRUP或DAFOSS热计量系统；
- 瑞士ABB公司变频器；德国SIEMENS变频器；
- 德国SIEMENS或丹麦DAFOSS或瑞士ABB或美国HONEYWELL各种温度传感器、压力变送器、控制器、电动调节阀及自力式温度控制阀；
- MPU系列换热机组从所选择的配套器件中得到了它的高度可靠性及超长寿命；
- 控制部分主要采用德国SIEMENS元器件。

All of the parts of MPU series heat exchanger unit are representative products in the industry:

- The plate type heat exchanger has patent design of adhibition-free clip-type pad structure;
- The welted ball valve of NAVAL of Finland has zero leakage and free maintenance for life;
- The pipeline circulation pump of GRUNDFOS of Denmark, WILO of Germany or EAST of China has metal seal, low noise, long life and free maintenance for life;
- The Butterfly Valve, check valve, steam bottom valve and filter of EGO of Denmark;
- The condensation trap, relief pressure valve and relief valve of SPIRAX of Britain;
- The heat measure system of KAMSTRUP or DAFOSS of Denmark;
- The transducer of ABB Company of Denmark;
- Various sensors, pressure transmitter, controller, electrical control valve and automatic temperature control valve of SIEMENS of Germany or DAFOSS of Denmark or ABB of Denmark or HONEYWELL of America;
- MPU series heat exchanger unit achieves its high reliability and long life by selecting above parts.
- The control section mainly adopts elements of SIEMENS of Germany.

>>> MPU系列换热机组的配套器件



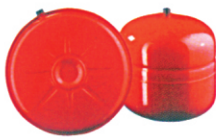
WILO



EAST



GRUNDFOS



elbi



MINGRI



SIEMENS



SIEMENS



ABB



Danfoss
Instrumentation



Danfoss
Instrumentation



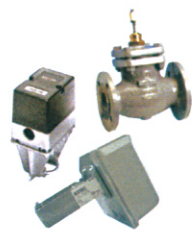
Danfoss
Instrumentation



spirax
sarco



NAVAL



Honeywell



MPU系列机组型号 : The models of MPU series unit

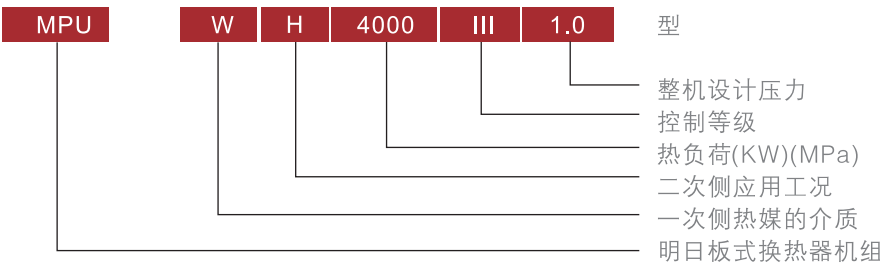
- 1、明日公司MPU系列换热机组用 “明日板式换热器 Mingri Plate Heat Exchanger Unit” 的缩写 “MPU” 表示。
- 2、MPU系列换热机组产品型号组成及含义：

型号中第1、2、3位表示板式换热机组；
第4位表示一次侧热媒的介质：热水—“W”；蒸汽—“S”；
第5位表示二次侧工况：生活热水系统—“T”；空调系统及地板辐射采暖系统—“A”；一般采暖系统—“H”；制冷系统—“G”；
第6位表示产品序列号；
第7位表示热负荷；
第8位表示控制等级，按表1分为5级；
第9位表示整机设计压力；

表一：MPU系列换热机组的控制等级

级别	控制功能
O	自动补水
I	0+温度控制
II	0+I+补水泵变频自动定压补水控制
III	0+I+II+循环泵变频系统+温度补偿
IV	0+I+II+ III +热计量系统+通讯系统

示例：



3、型号编制示例：

- (1)MPU—SA070/4200III/1.6型
表示：热负荷4200KW，适用于空调系统，一次侧热媒介质为蒸汽，产品序列号为070。 整机设计压力1.6MPa，控制等级为III型即具有温度控制、温度补偿控制、循环泵变频系统、补水泵变频自动定压补水控制系统的APJ系列换热机组。
- (2)MPU/2—WfT050/3000I/1.0+1WT1500I/1.0
表示采暖与生活热水二合一机组，热负荷3000KW为热水采暖系统，热负荷1500KW为生活热水系统。产品序号050，控制等级为I级，采暖与生活热水均具有自动补水、温度控制的二合一机组，整机设计压力1.0Mpa。



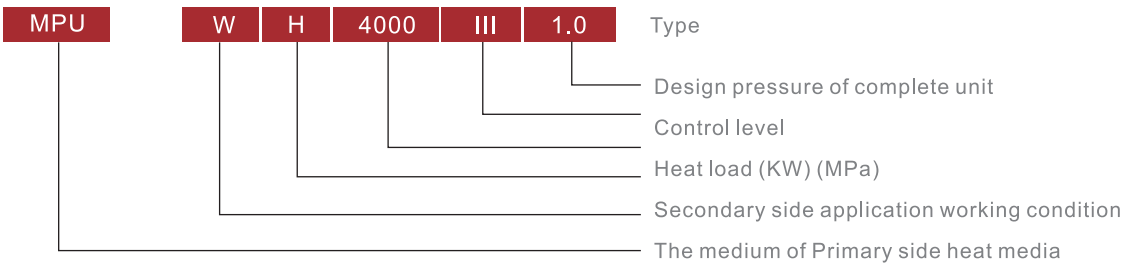
1. The capital letters of Chinese phoneticize ,"Ban & Ji" of the first two words of "Ban Shi Huan Re Qi" and "JiZu" express the MPU series heat exchanger unit of Mingri Company.
2. Definition of product models of the MPU series heat exchanger unit:

The first, second and third numbers in the model mean plate type heat exchanger unit;
The fourth number means the primary heat agent: hot water--"W"; steam--"S";
The fifth number means secondary side working condition: domestic hot water system--"T"; air-conditioner--"A"; general heating system--"H"; floor heating system--"F"; refrigeration system--"G";
The sixth number means the series number of product;
The seventh number means heat load;
The eighth number means control level, which classified to five levels according to table 1 :
The ninth number means design pressure of complete unit;

Table 1 :the control levels for MPU series heat exchanger unit

level	control function
O	automatic water supply
I	0 + temperature control
II	0 + I + frequency conversion automatic set pressure water supply control of the water supply pump
III	0 + I + II + circulation pump frequency conversion system + temperature compensation
IV	0 + I + II + III + heat measure system + communication system

Demonstration:



3. Demonstration of model

- (1) MPU-SA070/4200III/type 1.6
expression: heat load 4200KW, applicable for air-conditioner; the primary heat medium is steam; the series number of the product is 070; the design pressure of complete unit is 1.6Mpa; control level is level III viz MPU series heat exchanger unit with systems of temperature control, temperature compensation control, circulation pump frequency conversion and water supply control of water supply pump frequency conversion automatic set pressure.
- (2) MPU/2-WH050/3000I/1.0+ 1WT1500I/1.0
expression: the combining unit of heating and domestic hot water; hot water heating system with heat load 3000KW, domestic hot water system with heat load 1500KW; the series number of the product is 050; control level is level I, the systems of heating and domestic hot water have both the functions of automatic water supply and temperature control with the design pressure of complete unit 1.0Mpa.

MPU系列换热机组设计理念：MPU series heat exchanger unit design principle

MPU系列换热机组的设计是在满足采暖用户最舒适度的热负荷的情况下，以最大限度地节省能源为最高设计理念；在区域供热管网系统中，有质调节和量调节两种节能控制方式，A系列换热机组设计为一次网量调节控制，二次网设计为质调和量调两种控制方式，依此分为五个等级来实现最大化节能设计：

O型：机组具有自动补水功能+手动调节供水温度+手动调节二次侧流量。

I型：温度控制功能及温度补偿功能：

具体配置：现场就地控制器、室外温度传感器

一次侧： 电动调节阀(可带弹簧返回断电保护功能)

二次侧： 供水温度传感器

显示模式：现场就地控制器显示的参数：二次侧供水温度及室外温度

控制模式：现场控制器根据二次侧供水温度传感器及室外温度传感器共同控制一次侧电动调节阀， 自动调节一次网流量，实现一次网量调节，从而控制二次网的供水温度按设定的模式运行，实现二次网的质调节；

功能模式：具有温度补偿功能，最大限度节省能源；具有直接手动设定二级网的供水温度功能；具有直接手动设定值班采暖的运行模式；具自动切换备用泵的功能；具有自动泄压功能；

The design of MPU series heat exchanger unit meets the heat load that provides most comfortable condition for heating user and extremely saves energy; there are two methods of energy conservation control-quality adjustment and quantity adjustment in the system of regional heating pipeline network. The design of MPU series heat exchanger unit is the quantity adjustment control in primary network and quality adjustment control and quantity adjustment control in secondary network, upon which is divided into five levels to achieve a most energy conservation:

Type O: the unit has the function of automatic water supply, manual adjustment for water supply temperature, and manual adjustment for secondary network side flow.

Type I: temperature control function and temperature compensation function:

Facility: on spot controller at site, outdoor temperature sensor

primary Side: electrical regulation valve (the protection function of return electricity trip with spring)

secondary Side: water temperature sensor

display Mode: parameter indicated on spot controller secondary side supply water temperature and outdoor temperature.

control Mode: the on spot controller at site controls the electrical regulation valve on primary side via secondary side supply water temperature sensor and outdoor temperature sensor, to adjust flow of primary network automatically to achieve a quantity adjustment of primary network, so as to control the supply water temperature of secondary network operating as the set mode and achieve a quality adjustment of secondary network;

function Mode: the temperature compensation function to achieve utmost energy saving; the function of setting supply water temperature of secondary network by manual operation; the function of setting operation mode of on duty heating by manual operation; the function of automatic switch of stand-by pump; the function of automatic pressure release;

II型：温度控制功能+温度补偿功能+补水泵变频自动定压补水控制；

具体配置：现场就地控制器、室外温度传感器、补水泵变频器、(软化水补水箱水位控制)

一次侧： 电动调节阀(可带弹簧返回断电保护功能)

二次侧： 供水温度传感器，回水压力变送器

显示模式：现场就地控制器显示的参数：二次侧供水温度及室外温度、二次侧回水压力、补水泵变频器频率

控制模式：温度控制

现场控制器根据二次侧供水温度传感器及室外温度传感器共同控制一次侧电动调节阀，自动调节一次网流量，实现一次网量调节，从而控制二次网的供水温度按设定的模式运行，实现二次网的质调节；

压力控制

根据二次侧回水压力，自动控制补水泵变频运行， 恒定二次网系统压力；(自动控制补水水箱水位);当系统超压时自动排水泄压；

功能模式：具有温度补偿功能，最大限度节省能源；具有直接手动设定二级网的供水温度功能；具有直接手动设定值班采暖的运行模式；具有自动恒定二次网系统压力功能；具有自动泄压功能，具自动切换备用泵的功能；具有自动控制水箱水位功能；

Type II: temperature control function + temperature compensation function + frequency conversion

Facility: on spot controller,outdoor temperature sensor, water supply pump transducer, (level control of soft water tank)

Primary Side: electrical regulation valve (the protection function of return electricity trip with spring)

Secondary Side: supply water temperature sensor, return water pressure transducer.

Display Mode: parameter indicated by on spot controller at site: secondary side supply water temperature and outdoor temperature, secondary side return water pressure, frequency of water supply pump transducer

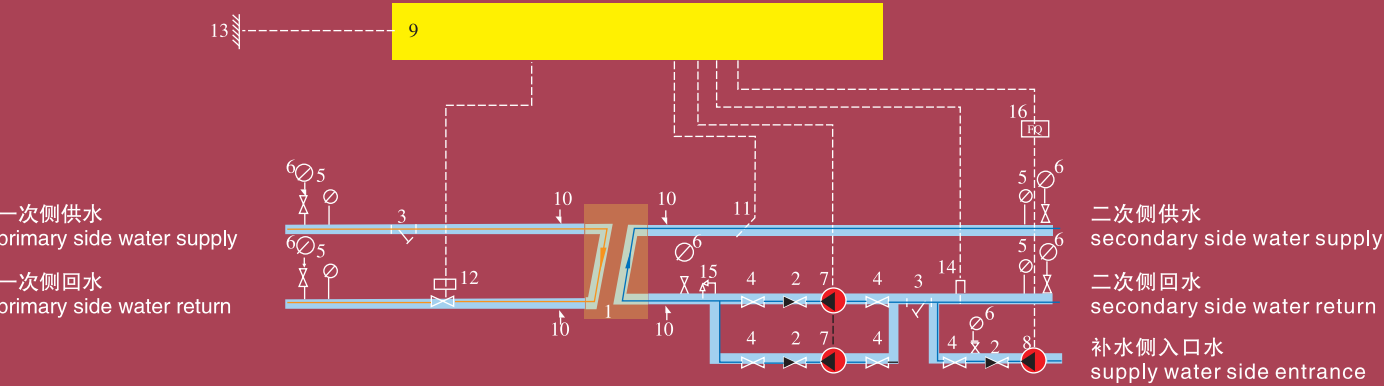
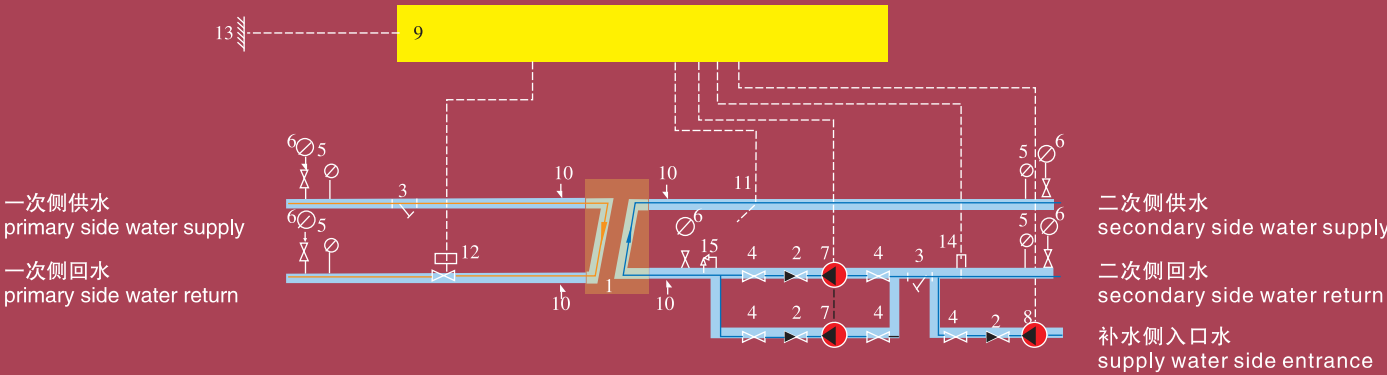
Control Mode:

temperature control the on spot controller at site controls the electrical regulation valve on primary side via secondary side supply water temperature sensor and outdoor temperature sensor, to adjust flow of primary network automatically to achieve a quantity adjustment of primary network, so as to control the supply water temperature of secondary network operating as the set mode and achieve a quality adjustment of secondary network;

Pressure Control

upon return water pressure of secondary side, automatic control water supply pump transducer operates to stabilize the pressure of secondary network system; (automatically controls water supply case level); and automatically starts to drain water for pressure release while system has over-pressure;

Function Mode: the temperature compensation function to utmost save energy; the function of setting supply water temperature of secondary network by manual operation;the function of setting operation mode of on duty heating by manual operation;the function of automatic stabilizing pressure of secondary network system; the function of automatic pressure release; the function of automatic switch of stand-by pump; the function of automatic control of water case level;



明日控制等级Ⅰ级 Mingri Control Level Type I

- 1、板式换热器plate heat exchanger
- 2、止回阀check vdlve
- 3、过滤器filter
- 4、蝶阀butterfly valve
- 5、温度计thermometer

- 6、压力表pressure meter
- 7、循环水泵circulation water pump
- 8、补水水泵make up water pump
- 9、控制柜control cabinet
- 10、排放阀blow-down valve

- 11、温度传感器temperature sensor
- 12、电动调节阀electrical regulation valve
- 13、室外温度传感器outdoor temperature sensor
- 14、压力传感器pressure sensor
- 15、安全阀safety valve
- 16、变频器transducer

明日控制等级Ⅱ级 Mingri Control Level Type II

- 1、板式换热器plate heat exchanger
- 2、止回阀check valve
- 3、过滤器filter
- 4、蝶阀butterfly valve
- 5、温度计thermometer

- 6、压力表pressure meter
- 7、循环水泵circulation water pump
- 8、补水水泵make up water pump
- 9、控制柜control cabinet
- 10、排放阀blow-down valve

- 11、温度传感器temperature sensor
- 12、电动调节阀electrical regulation valve
- 13、室外温度传感器outdoor temperature sensor
- 14、压力传感器pressure sensor
- 15、安全阀safety valve
- 16、变频器transducer



随需应变的换热解决方案！
On Solution For Heat Exchanger

MPU系列换热机组设计理念：MPU series heat exchanger unit design principle

Ⅲ型：温度控制功能+温度补偿功能+补水泵变频自动定压补水控制+循环泵变频系统：

具体配置：现场就地控制器、室外温度传感器、循环泵变频器、补水泵变频器、软化水补水箱水位控制

一次侧：电动调节阀(可带弹簧返回断电保护功能)、供回水温度传感器、供回水压力变送器

二次侧：供水温度传感器、供回水压力变送器

显示模式：现场就地控制器显示的参数：二次侧供水温度及室外温度，二次侧供、回水压力，一次水箱水位，补水泵变频频率，循环泵变频频率。

控制模式：温度控制

现场控制器根据二次侧供水温度传感器及室外温度传感器共同控制一次侧电动调节阀，自动调节一次网流量，实现一次网量调节，从而控制二次网的供水温度按设定的模式运行，实现二次网的质调节；
压力控制
根据二次侧回水压力，自动控制补水泵变频运行，恒定二次网系统压力；自动控制补水水箱水位；
根据二次侧供回水压差，自动控制循环泵变频器自动运行，恒定二次网压差；
阀门控制
能够手动调节电调阀、水泵及变频器的状态

功能模式：具有温度补偿功能，最大限度节省能源；具有直接手动设定二级网的供水温度功能；具有直接手动设定值班采暖的运行模式；具有自动恒定二次网系统压力功能；具自动切换备用泵的功能；具有自动泄压功能；具有自动控制水箱水位功能；具有循环泵变流量控制，节省电能；具有直接设定二级网循环水泵的运行频率功能；

Type III: temperature control function + temperature compensation function + frequency conversion automatic set pressure water supply control of water supply pump + circulation pump frequency conversion system:

Facility: on spot controller, outdoor temperature sensor, circulation pump transducer, water supply pump transducer, level control of soft water tank

Primary Side: electrical regulation valve (the protection function of return electricity trip with spring), supply & return water emperature sensor, supply & return water pressure transducer.

Secondary Side: supply water temperature sensor, supply & return water pressure transducer.

Display Mode: parameter indicated on spot controller at site: secondary side supply water temperature and outdoor temperature, secondary side supply & return water pressure, water tank level of primary, transducer frequency of supply water pump and transducer frequency of circulation pump.

Control Mode: Temperature Control
the on spot controller controls the electrical regulation valve on primary side via secondary side supply water temperature sensor and outdoor temperature sensor, to adjust flow of primary network automatically to achieve a quantity adjustment of primary network, so as to control the supply water temperature of secondary network operating as the set mode and achieve a quality adjustment of secondary network;

Pressure Control
upon water pressure of secondary side, automatic control water supply pump transducer operates to stabilize the pressure of secondary network system; automatically controls water tank level; as per the pressure difference of supply & return water on secondary side, the automatic control circulation pump transducer operates automatically to stabilize the pressure difference of secondary network.
Valve control
Adjust the states of electrical regulation valve, water pump and transducer by manual operation.

Function Mode: the temperature compensation function to achieve utmost energy save; the function of setting supply water temperature of secondary network by manual operation; the function of setting operation mode of on duty heating by manual operation; the function of automatic stabilizing pressure of secondary network system; the function of automatic switch of stand-by pump; the function of automatic pressure release; the function of automatic control of water level; the function of flow control of circulation pump to save energy; the function of setting operation frequency of circulation water pump of secondary network.

明日控制等级Ⅲ级 Mingri Control Level Type III

- 1、板式换热器plate heat exchanger

2、止回阀check valve

3、过滤器filter

4、蝶阀butterfly valve

5、温度计thermometer
- 6、压力表pressure meter

7、循环水泵circulation water pump

8、补水水泵make up water pump

9、控制柜control cabinet

10、排放阀blow-down valve
- 11、温度传感器temperature sensor

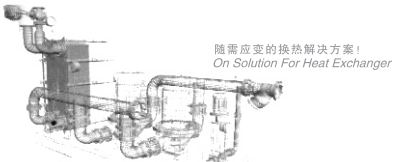
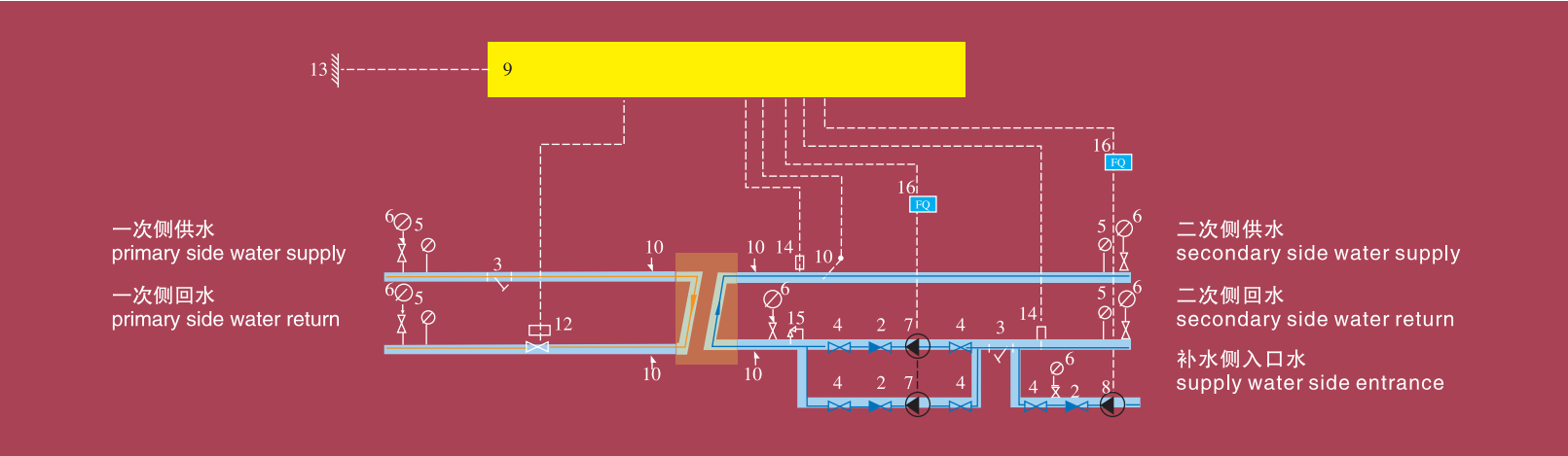
12、电动调节阀electrical regulation valve

13、室外温度传感器outdoor temperature sensor

14、压力传感器pressure sensor

15、安全阀safety valve

16、变频器transducer



MPU系列换热机组设计理念：MPU series heat exchanger unit design principle

IV型：IV型设计配置是在Ⅲ型的基础上再加上热计量和远程通讯系统控制功能，所有的配置在Ⅲ型配置的基础上增加流量计远程控制系统以及安全泄压电磁阀，(详见控制系统图)机组控制部分可在主动和被动方式下与监控中心通过通讯线路进行数据通信，通讯协议应为标准的、公开的。

MPU系列换热机组IV型设计真正实现了供热站内无人值守的功能。

IV型：温度控制功能+温度补偿功能+补水泵变频自动定压补水控制+循环泵变频系统+热计量系统+远程通讯控制系统；

具体配置：现场就地控制器、室外温度传感器、循环泵变频器、补水泵变频器、软化水补水箱水位控制、远程通讯控制

一次侧：电动调节阀(可带弹簧返回断电保护功能)、供回水温度传感器、供回水压力变送器、供水流量计

二次侧：供回水温度传感器、供回水压力变送器、回水流量计

补水管： 补水流量计、泄压电磁阀

显示模式：现场就地控制器显示的参数：一次侧供、回水温度，二次侧供、回水温度及室外温度，一次侧供、回水压力，二次侧供、回水压力，一次侧热量，二次侧热量，补水水量，水箱水位，电调阀状态，电磁阀状态，水泵状态，补水泵变频频率，循环泵变频频率。

控制模式：

温度控制

现场控制器根据二次侧供水温度传感器及室外温度传感器共同控制一次侧电动调节阀，自动调节一次网流量，实现一次网量调节，从而控制二次网的供水温度按设定的模式运行，实现二次网的质调节；

压力控制

根据二次侧回水压力，自动控制补水泵变频运行，恒定二次网系统压力；自动控制补水箱水位；当系统超压时电磁润开启自动排水泄压；

根据二次侧供回水压差，自动控制循环泵变频器自动运行，恒定二次网压差，

阀门控制

能够手动调节电调阀、电磁阀、水泵及变频器的状态

Type IV： the design of type IV is to put heat measure and long-distance communication control function on the basis of type III All assemblies are same as type except the adding flowmeter long—distance control system and safety pressure release electromagnetic valve, (for detail see control system chart). The unit control system is possible to make data communication with monitoting center via communication circuitry in both methods of initiative and passivity. The communication agreement should be standard and open.

The design of A series heat exchanger unit type IV achieves the function that no one needs to be on duty in heating station.

Type IV： temperature control function+temperature compensation function+frequency conversion automatic set pressu re water supply control of water supply pump+circulation pump frequency conversion system+heat measure system+long—distance communication control system；

Facility： on spot controller, outdoor temperature sensor, circulation pump transducer, water supply pump transducer, level control of soft water tank, long—distance communication control

Primary Side： electrical regulation valve(the protection function of return electricity trip with spring). supply& return water temperature sensor, supply& return water pressure transducer and supply water flowmeter.

Secondary Side： supply and return water temperature sensor, supply& return water pressure transducer. return water flowmeter. water supply pipe: water supply flowmeter, pressu re releave electromagnetic valve

Display Mode： parameter indicated on spot controller: primary side supply& return water temperature. secondary side supply& return water temperature and outdoor temperature, primary side supply& return water pressure. secondary side supply& return water pressure, primary side heat, secondary side heat. supply wate r flow. case level。electrical regulation valve state. electromagnetic valve state, water pump state, water supply pump transducer frequency and circulation pump transducer frequency.

Control Mode：

Temperature Control

the on spot controller controls the electrical regulation valve on primary side via secondary side supply water temperature sensor and outdoor temperature sensor, to adjust flow of primary network automatically to achieve a quantity adjustment of primary network, so as to control the supply water temperature of secondary network operating as the set mode and achieve a quality adjustment of secondary network；

Pressure Control

upon water pressure of secondary side. automatic control water supply pump transducer operates to stabilize the pressure of secondary network system；automatically controls water tank level；and the electromagnetic valve automatically starts to drain water for pressure relief while system has over-pressure；

as per the pressure difference of supply& return water on secondary side, the automatic control circulation pump transducer operates automatically to stabilize the pressure difference of secondary network.

Valve Control

Adjust the state of electrical regulation valve, electromagnetic valve, water pump and transducer by manual operation.

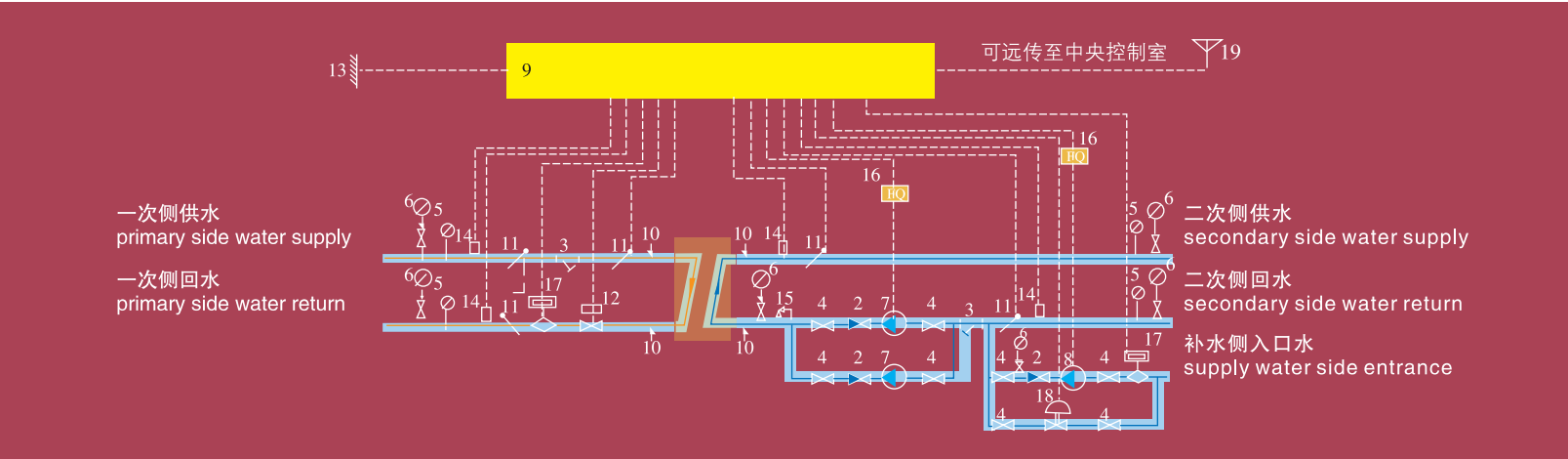


功能模式：

具有温度补偿功能，最大限度节省能源；具有直接手动设定二级网的供水温度功能；具有直接手动设定值班采暖的运行模式；具有一次网的回水温度最高限制功能；具有自动恒定二次网系统压力功能；具有自动泄压功能；具自动切换备用泵的功能；具有自动控制水箱水位功能具有累计补水水量功能；具有累计一次网热量、二次网热葦功能；具有循环泵变流量控制，节省电能；具有直接设定二级网循环水泵的运行频率功能；具有停电保护来电自启功能。

Function Mode:

the temperature compensation function to achieve utmost energy save; the function of setting supply water temperature of secondary network by manual operation; the function of setting operation mode of on duty heating by manual operation; the function of limit on maximum temperature of return water of primary network: the function of automatic stabilizing pressure of secondary network system; the function Of automatic pressure release; the function of automatic switch of stand—by pump; the function of automatic control of water level; the function of adding up the volume of water supply; the function of adding up heat of primary network and secondary network; the function Of flow control of circulation pump to save energy; the function ot setting operation trequency of circulation water pump Of secondary network.



明日控制等级IV级 Mingri Control Level Type IV

- 1: 板式换热器 plate heat exchanger
- 2: 止回阀 check valve
- 3: 过滤器 filter
- 4: 蝶阀 butterfly valve
- 5: 温度计 thermometer
- 6: 压力表 pressure meter
- 7: 循环水泵 circulation water pump
- 8: 补水泵 make-up water pump
- 9: 控制柜 control cabinet
- 10: 排放阀 blow-down valve

- 11: 温度传感器 temperature sensor
- 12: 电动调节阀 electrical regulation valve
- 13: 室外温度传感器 outdoor temperature sensor
- 14: 压力传感器 pressure sensor
- 15: 安全阀 safety valve
- 16: 变频器 transducer
- 17: 流量计 flowmeter
- 18: 电磁阀 electromagnetic valve
- 19: 无线调制解调器及天线 wireless modem and antenna



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On Solution For Heat Exchanger

MPU系列换热机组选型参数表:
Parameter table for model selection of MPU series heat exchanger unit

MPU—S汽—水换热机组(一次侧热源为≤0.4Mpa或143℃饱和蒸汽)
MPU—S steam—water heat exchanger unit(primary side heat source is≤0.4 Mpa or 143℃ saturated steam)
用于汽—水交换的采暖SH型换热机组(二次侧95 / 70℃或85 / 60℃)
Heating type SH heat exchange unit used for steam—water exchange(secondary side 95/70℃ or 85/60℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—SH005	300	26	11	1500*900*1400	1000
MPU—SH010	600	52	21	1500*1000*1400	1200
MPU—SH015	900	78	31	1700*1200*1400	1200
MPU—SH020	1200	104	42	700*1200*1400	1400
MPU—SH025	1500	129	52	700*1200*1400	1400
MPU—SH030	1800	155	62	1900*1400*1600	1800
MPU—SH035	2100	181	73	1900*1400*1600	1800
MPU—SH040	2400	207	83	1900*1400*1600	1800
MPU—SH045	2700	333	93	1900*1400*1600	1800
MPU—SH050	3000	259	104	2200*1400*1600	2200
MPU—SH055	3300	285	114	2200*1400*1600	2200
MPU—SH060	3600	310	124	2400*1600*1600	2400
MPU—SH065	3900	336	135	2400*1600*1600	2400
MPU—SH070	4200	362	145	2400*1600*1600	2400
MPU—SH075	4500	388	155	2600*1800*1900	2600
MPU—SH080	4800	414	166	2600*1800*1900	2600
MPU—SH085	5100	440	176	2800*2000*1900	2800
MPU—SH090	5400	466	186	2800*2000*1900	2800
MPU—SH095	5700	492	197	2800*2000*1900	2800
MPU—SH100	6000	517	207	3100*2200*1900	3200
MPU—SH110	6600	569	228	3100*2200*1900	3200
MPU—SH120	7200	621	248	3100*2200*1900	3200
MPU—SH130	7800	672	269	3400*2400*1900	3600
MPU—SH140	8400	724	290	3400*2400*1900	3600
MPU—SH150	9000	776	310	3400*2400*1900	3600
MPU—SH200	12000	1035	414	4100*2600*2200	4200
MPU—SH250	15000	1294	517	4300*2600*2400	5000

MPU—S汽—水换热机组(一次侧热源为≤0.4Mpa或143℃饱和蒸汽)
MPU—S steam—water heat exchanger unit(primary side heat source is≤0.4 Mpa or 143℃ saturated steam)
用于汽—水交换的空调（地板采暖）SA型换热机组(二次侧60 / 50℃或50 / 40℃)
The type SA(floor heating) air—conditioner heat exchange unit used for steam—water exchange
(secondary side 60/50℃ or 50/40℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—SA005	300	26	26	1500*1000*1400	1200
MPU—SA010	600	52	52	1700*1200*1400	1400
MPU—SA015	900	78	78	1900*1400*1600	1800
MPU—SA020	1200	104	104	2200*1400*1600	2200
MPU—SA025	1500	129	129	2400*1600*1600	2200
MPU—SA030	1800	155	155	2400*1600*1600	2200
MPU—SA035	2100	181	181	2800*2000*1900	2600
MPU—SA040	2400	207	207	2800*2200*1900	2800
MPU—SA045	2700	333	333	3100*2400*1900	3200
MPU—SA050	3000	259	259	3100*2400*1900	3400
MPU—SA055	3300	285	285	3400*2400*1900	3500
MPU—SA060	3600	310	310	3400*2400*2000	3600
MPU—SA065	3900	336	336	3400*2400*2000	3600
MPU—SA070	4200	362	362	3400*2500*2000	3600
MPU—SA075	4500	388	388	3400*2500*2000	3600
MPU—SA080	4800	414	414	3900*2600*2200	4200
MPU—SA085	5100	440	440	3900*2600*2200	4200
MPU—SA090	5400	466	466	3900*2600*2200	4200
MPU—SA095	5700	492	492	3900*2600*2200	4200
MPU—SA100	6000	517	517	3900*2600*2200	4200
MPU—SA110	6600	569	569	4300*2600*2400	5000
MPU—SA120	7200	621	621	4300*2600*2400	5000
MPU—SA130	7800	672	672	4300*2600*2400	5000
MPU—SA140	8400	724	724	4300*2600*2400	5000
MPU—SA150	9000	776	776	4300*2600*2400	5400
MPU—SA200	12000	1035	1035	4300*2800*2400	5400
MPU—SA250	15000	1294	1294	4800*2800*2400	7500



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MPU系列换热机组选型参数表:
Parameter table for model selection of MPU series heat exchanger unit

MPU—S汽—水换热机组(一次侧热源为≤0.4Mpa或143℃饱和蒸汽)
MPU—S steam—water heat exchanger unit(primary side heat source is≤0.4 Mpa or 143℃ saturated steam)
用于汽—水交换的(生活热水)ST型换热机组(二次侧5 / 55℃或≤60℃)
ST Plate Heat Exchange Unit for Steam—Water heat exchange(secondary side 5/55℃ or ≤60℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—ST005	300	26	5.2	1000*800*1200	700
MPU—ST010	600	52	10	1000*800*1200	1300
MPU—ST015	900	76	16	1000*1000*1400	1300
MPU—ST020	1200	104	21	1000*1000*1400	1400
MPU—ST025	1500	130	26	1000*1000*1400	1500
MPU—ST030	1800	155	31	1400*1000*1400	1500
MPU—ST035	2100	181	36	1400*1200*1400	1700
MPU—ST040	2400	207	42	1400*1200*1600	1700
MPU—ST045	2700	333	47	1400*1200*1600	1800
MPU—ST050	3000	259	52	1400*1200*1600	1800
MPU—ST055	3300	285	57	1800*1600*1600	2200
MPU—ST060	3600	310	62	1800*1600*1600	2200
MPU—ST065	3900	336	67	1800*1600*1600	2200
MPU—ST070	4200	362	73	1800*1600*1600	2200
MPU—ST075	4500	388	78	1800*1600*1600	2600
MPU—ST080	4800	414	83	1800*1600*1600	2600
MPU—ST085	5100	440	88	1800*1800*1600	2600
MPU—ST090	5400	466	93	1800*1800*1600	2600
MPU—ST095	5700	492	98	1800*1800*1800	2600
MPU—ST100	6000	517	104	1800*1800*1800	2600
MPU—ST110	6600	569	114	1800*1800*1800	2800
MPU—ST120	7200	621	124	1800*1800*1800	2800
MPU—ST130	7800	673	135	2200*2000*1800	2800
MPU—ST140	8400	724	145	2200*2000*1800	3000
MPU—ST150	9000	776	155	2600*2000*1800	3000
MPU—ST200	12000	1035	207	2600*2000*1800	3300
MPU—ST250	15000	1293	259	4300*2300*2200	3500

MPU—W水—水换热机组(一次侧热源110 / 80℃或95 / 70℃高温水)
MPU—W water—water heat exchanger unit(primary side heat source is temperature water of 110/80℃ or 95/70℃)
用于水—水交换的采暖WH型换热机组(二次侧95 / 70℃或85 / 60℃)
The heating type WH heat exchange unit for water—water exchange(secondary side 95/70℃ or 85/60℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—WH005	300	26	10	1500*900*1400	1000
MPU—WH010	600	52	21	1500*1000*1400	1200
MPU—WH015	900	78	31	1700*1200*1400	1200
MPU—WH020	1200	104	41	1700*1200*1400	1400
MPU—WH025	1500	129	52	1700*1200*1400	1400
MPU—WH030	1800	155	62	1700*1200*1400	1800
MPU—WH035	2100	181	73	1900*1400*1600	1800
MPU—WH040	2400	207	83	1900*1400*1600	1800
MPU—WH045	2700	333	93	1900*1400*1600	1800
MPU—WH050	3000	259	104	2200*1400*1600	2200
MPU—WH055	3300	285	114	2200*1400*1600	2200
MPU—WH060	3600	310	124	2400*1600*1600	2200
MPU—WH065	3900	336	135	2400*1600*1600	2200
MPU—WH070	4200	362	145	2400*1600*1600	2200
MPU—WH075	4500	388	155	2600*1800*1900	2600
MPU—WH080	4800	414	166	2600*1800*1900	2600
MPU—WH085	5100	440	176	2800*2000*1900	2600
MPU—WH090	5400	466	186	2800*2000*1900	2800
MPU—WH095	5700	491	197	2800*2000*1900	2800
MPU—WH100	6000	517	207	3100*2200*1900	3200
MPU—WH110	6600	569	228	3100*2400*1900	3200
MPU—WH120	7200	621	248	3100*2400*1900	3400
MPU—WH130	7800	672	269	3400*2400*1900	3500
MPU—WH140	8400	724	290	3400*2400*1900	3600
MPU—WH150	9000	776	310	3400*2400*2000	3600



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MPU系列换热机组选型参数表:
Parameter table for model selection of MPU series heat exchanger unit

MPU—W水—水换热机组(一次侧热源为110 / 80℃或95 / 70℃高温水)
MPU—W water—water heat exchanger unit(primary side heat source is high temperature water of 110/80℃ or 95/70℃)
用于水—水交换的空调(地板采暖)WA型换热机组(二次侧60 / 50℃或50 / 40℃热水)
The type WA(floor heating)air—conditoner heat exchange unit used for water—water heat exchange
(secondary side 60/50℃ or 50/40℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—WA005	300	26	26	1500*1000*1400	1200
MPU—WA010	600	52	52	1700*1200*1600	1400
MPU—WA015	900	78	78	1900*1400*1600	1800
MPU—WA020	1200	104	104	2200*1400*1600	2200
MPU—WA025	1500	129	129	2400*1600*1600	2200
MPU—WA030	1800	155	155	2400*1600*1600	2200
MPU—WA035	2100	181	181	2800*2000*1900	2600
MPU—WA040	2400	207	207	2800*2200*1900	2800
MPU—WA045	2700	333	333	3100*2400*1900	3200
MPU—WA050	3000	259	259	3100*2400*1900	3400
MPU—WA055	3300	285	285	3400*2400*1900	3500
MPU—WA060	3600	310	310	3400*2400*2000	3600
MPU—WA065	3900	336	336	3400*2400*2000	3600
MPU—WA070	4200	362	362	3400*2500*2000	3600
MPU—WA075	4500	388	388	3400*2500*2000	3600
MPU—WA080	4800	414	414	3900*2600*2200	4200
MPU—WA085	5100	440	440	3900*2600*2200	4200
MPU—WA090	5400	466	466	3900*2600*2200	4200
MPU—WA095	5700	492	492	3900*2600*2200	4200
MPU—WA100	6000	517	517	3900*2600*2200	4200
MPU—WA110	6600	569	569	4300*2600*2400	5000
MPU—WA120	7200	621	621	4300*2600*2400	5000
MPU—WA130	7800	672	672	4300*2600*2400	5000
MPU—WA140	8400	724	724	4300*2600*2400	5000
MPU—WA150	9000	776	776	4300*2600*2400	5400
MPU—WA200	12000	1035	1035	4300*2800*2400	5400
MPU—WA250	15000	1294	1294	4800*2800*2400	7500

MPU—W水—水换热机组(一次侧热源为110 / 80℃或95 / 70℃高温水)
MPU—W water—water heat exchanger unit(primary side heat source is high temperature water of 110/80℃ or 95/70℃)
用于水—水交换的生活热水WT型换热机组(二次侧5 / 55℃≤60℃)
The domestic hot water type WT heat exchange unit used for water—water heat exchange
(secondary side 5/55℃ or ≤60℃)

机组型号 Unit model	换热量KW Heat exchange volume KW	最大产热量 Maximum heating volume × 10 ⁴ Kcal/h	二次侧最大流量 Maximum flow of secondary side m³/h	机组外形尺寸 Unit dimension mm L × W × H	机组重量 Unit weight Kg
MPU—WT005	300	26	5.2	1000*800*1200	700
MPU—WT010	600	52	10	1000*800*1200	1300
MPU—WT015	900	76	16	1000*1000*1400	1300
MPU—WT020	1200	104	21	1000*1000*1400	1400
MPU—WT025	1500	130	26	1000*1000*1400	1500
MPU—WT030	1800	155	31	1400*1000*1400	1500
MPU—WT035	2100	181	36	1400*1200*1400	1700
MPU—WT040	2400	207	42	1400*1200*1600	1700
MPU—WT045	2700	333	47	1400*1200*1600	1800
MPU—WT050	3000	259	52	1400*1200*1600	1800
MPU—WT055	3300	285	57	1800*1600*1600	2200
MPU—WT060	3600	310	62	1800*1600*1600	2200
MPU—WT065	3900	336	67	1800*1600*1600	2200
MPU—WT070	4200	362	73	1800*1600*1600	2200
MPU—WT075	4500	388	78	1800*1600*1600	2600
MPU—WT080	4800	414	83	1800*1600*1600	2600
MPU—WT085	5100	440	88	1800*1800*1600	2600
MPU—WT090	5400	466	93	1800*1800*1600	2600
MPU—WT095	5700	492	98	1800*1800*1800	2600
MPU—WT100	6000	517	104	1800*1800*1800	2600
MPU—WT110	6600	569	114	1800*1800*1800	2800
MPU—WT120	7200	621	124	1800*1800*1800	2800
MPU—WT130	7800	673	135	2200*2000*1800	2800
MPU—WT140	8400	724	145	2200*2000*1800	3000
MPU—WT150	9000	776	155	2600*2000*1800	3000
MPU—WT200	12000	1035	207	2600*2000*1800	3300
MPU—WT250	15000	1293	259	4300*2300*2200	3500

备注：以上机组尺寸设计为换热器一台，循环水泵二台，补水泵一台，外型尺寸及重量仅供参考，以实际为准，公司可以根据用户要求及使用配套另行设计。



MPU系列卫生热水机组：MPU series sanitary hot water unit

MPU系列生活热水机组是运用换热组的成熟的温度控制技术，结合生活热水系统特性而设计的，分为即热式生活热水机组、半即热式生活热水机组和混合式生活热水机组即采暖与生活热水一体化机组。

用途：

- 1、针对于户式开发的壁挂式小型智能型全自动机组集采暖及生活热水于一身，封闭式周期时钟程序控制达到最佳节能效果。
 - 2、针对公共洗浴及楼宇集中生活热水等工况设计的各种规格型号的生活热水机组。
- 即热式生活热水机组：
- 采用板式换热器，可供15—450套房间使用
- 具有结构紧凑，占地小，易安装；
- 具有高精度温度控制，供水温度±1℃；
- 半即热式生活热水机组：
- 采用板式换热器，配置储水罐，储水罐分为开式与闭式；
- 适用于锅炉功率较小工况；
- 适用于热水需用量峰值大的工况；
- 混合式生活热水机组即采暖与生活热水一体化式机组一体化设计，具有优异的性能价格比；
- 采暖与生活热水单独控制；
- 适用于高档写字楼、别墅等；

MPU series domestic hot water unit is designed by utilizing the matured technology of temperature control of heat exchanger unit in combination with the specialty of domestic hot water system, which is classified into rap-heating domestic hot water unit. semi-heating domestic hot water unit and mixed domestic hot water unit viz the integrated unit of heating and domestic hot water.

Purpose:

- 1. As per different house types, the hanging minitype intelligent automatic unit, in combination of heating and domestic hot water, has a close periodical programmable control by clock to achieve best energy save
 - 2. The various types of domestic hot water units are designed for public bath and centralized domestic hot water of buildings.
- rapid-heating domestic hot water unit:
- utilizing plate type heat exchanger, available for 15-450 suites, with the features of compact structure, less occupied area and easy assembling, having high accuracy digital control with ±1℃water supply temperature tolerance.
- semi-heating domestic hot water unit:
- utilizing plate type heat exchanger, assembling water storage tank which has two types—open type and close type;
- available for the working conditions of a lower power of boile; available for high peak value of hot water demand;
- mixed domestic hot water unit viz the integrated unit of heating and domestic hot water
- the integrated design has excellent comparison of performance and price;
- with function of separate control of heating and domestic hot water;
- available for high-ranking office building and villa;

MPU系列生活热水机组参数表：

功 率 Power Kw	生活用水量 Domestic water consumption l/s	套房数 Number of suites	房间数 Number of rooms	喷头数 Number of sprinkle heads	医院床位数 Number of beds in hospital	备 注 Remark
179	57	18	9	5	25	
220	70	27	14	6	38	
267	85	41	22	13	56	
308	98	54	29	18	74	
349	111	69	38	23	94	
377	120	80	45	28	109	
408	130	93	52	32	127	
436	139	106	59	37	143	
465	148	118	67	42	161	
493	157	132	75	47	179	
553	176	164	93	60	220	



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上海万达商业广场
沈阳五里河体育发展有限公司
名门地产(河南)有限公司
沈阳皇朝万鑫房屋开发有限公司
烟台阳光100银行都置业有限公司
宁波万基房地产开发有限公司
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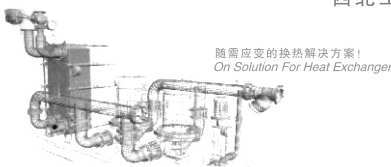


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MPU系列换热机组选型指南：

The instruction for model selection of MPU series heat exchanger units

对于直接的用户，用户需提供供热负荷或供暖面积，一、二次管网供回水温度和一次网的最大压力降和实用压差，压力设计等级，供暖半径，及供暖区域内的最高楼层高度，用户在选型表中选择补水泵控制方式和机组控制模式，其它的工作由明日公司相关技术人员来完成。

对于设计院设计选型，只需按选型表格添选即可。

As for the direct end users，they require to provide the heat load or the heating area. the primary and secondary piping network supply& return water temperatures，the primary network maximum pressure drop and the practical pressure difference . the designed leve}of pressure，the radius of supplied heat，and the height of the highest floor of building in the supplied heat region. the selection of control method for the supply water pump and the mode of control for the unit. Mingri Company and their related technical personnel will complete the rest of the works. As for the model selection of designing institute，it is only required to select the type of design accord to the selection table.

MPU系列换热机组选型指南表（举例说明）

The instruction table for model selection of MPU series heat exchanger units:(Illustration)

基本工况 Basic working conditions						
一次网供回水温度或蒸汽压力	一次网最大允许压力降	设计压力等级	二次网供回水温度	设计压力等级	热负荷或采暖面积	供暖半径
Primary network supply & return water temperature or steam pressure	Primary network maximum permissible pressure drop	The designed level of pressure	secondary network supply & return water temperature	The designed level of pressure	Heat load or heating area	Radius of supplied heat
水/水 water/water 130/80℃	1.5 bar	1.6 Mpa	95/70℃	1.0 Mpa	4.0 MW	1.5 Km

机组控制模式 Unit Control mode				
O型 TYPE O	I型 TYPE I	II型 TYPE II	III型 TYPE III	IV型 TYPE IV

循环泵系统 Circulation pump ststem					
循环泵系统 Circulation pump		循环泵控制方式 Circulation pump control method		数量 Qty	备注 Remarks
流量 Flow	扬程 Delivery lift	定流量控制 Fixed flow control	变频控制 Frequency conversion control		
150m3/h	27m			2	一用一备 one in operation one stand by

补水泵系统 Water supply pump ststem						
补水泵系统 Water supply pump		补水泵控制方式 Water supply pump control method			数量 Qty	备注 Remarks
流量 Flow	扬程或楼高度 Delivery lift or height of building	自动补水 Manual water supply	变频控制 Frequency conversion control	一次补二次 Automatic water supply		
5.5m3/h	45m				1	无备用泵 No stand-by pump

MPU系列换热机组的出厂检验及测试：

The leavincl factory inspection and test of MPU series heat exchanger unit

所有MPU系列换热机组在出厂前做如下检测

1、外观检查：

换热机组表面的漆膜均匀、平整，无气泡、龟裂和剥落等缺陷，柜内干燥、清洁、无杂物；管路汽、水流向，接管标记及机组标牌完整、正确。

2、压力试验

MPU系列换热机组的压力试验介质采用水，其水中的Cl离子含量小于25ppm。强度试验按热、冷侧单独进行，补水管线随冷侧进行水压试验。试验压力应为设计压力的1.3倍。

试验的环境温度及水的温度不应低于5℃。

换热器及管道充分排空后，关闭放气阀。

充满水后先检查系统有无渗漏，无渗漏时对系统缓慢升压，当压力升到试验压力的50%时，保持10分钟，再次检查系统有无渗漏，无渗漏时将系统压力升至试验压力，并保持10分钟，然后降至设计压力，并保持30分钟后带压进行检查，系统应无损坏或渗漏。

强度试验不合格时进行返修，返修后应重新做强度试验。

强度试验合格后，排尽换热机组内的积水。

每次强度试验的记录匀与设备随机，并拷贝存档。

3、系统运转试验

系统运转试验采用常温水。

将板式换热器放置在测试台上，并接通水、电按设计最大流量运行30min。

检查水泵的电源线连接正确，运转时无杂音和其它异常现象，水泵运转时轴承的温升情况。

控制系统试验，所有控制系统匀进行空载逻辑试运行。

All MPU series heat exchanger units are required to conduct the following inspection and tests prior to leaving factory:

1. Physical inspection:

The painting of the heat exchanger unit must be even and leveled, free of air bubbles, cracks, peelings and other defects; the internal part of the cabinet must be dry, clean and free of other substances; The flow direction of the steam an water in pipeline circuits the markings for the pipeline connections and the nameplates of the unit must be complete and correct.

2. Pressure test

The medium of pressure test for MPU series heat exchanger unit is water, of which the content of Cl ions must be less than 25 ppm The intensity test should be separately conducted for the hot and cold sides, and the water pressure test of the water supply pipeline should be conducted in the cold side.

The test pressure should be 1.3 times of the designed pressure.

The ambient and water temperatures of the test should not be less than 5℃.

Discharge the heat exchanger unit and the pipelines completely, then close the air release valve.

After filling up the system with water, inspect whether there is any leakage. When the system is confirmed to be free from leakage, then gradually increase the pressure.

After the pressure has reached 50%of the test pressure maintain the pressu re for 10 minutes. Inspects the system again to ensure whether there is no any leakage. If control, then increase the system pressure to the test pressure level, and maintain for 10 minutes, after that drop the pressure to the designed level, and maintain for another 30 minutes before conducting the inspection under this pressure. The system should have no damage or leakage If the intensity test fails, send the equipment back for repair, and redo the intensity test after the necessary repair.

After the intensity test has been passed, discharge the accumulated water in the heat exchanger completely.

Every record of intensity test should be attached with the equipment, and copies should be kept in file.

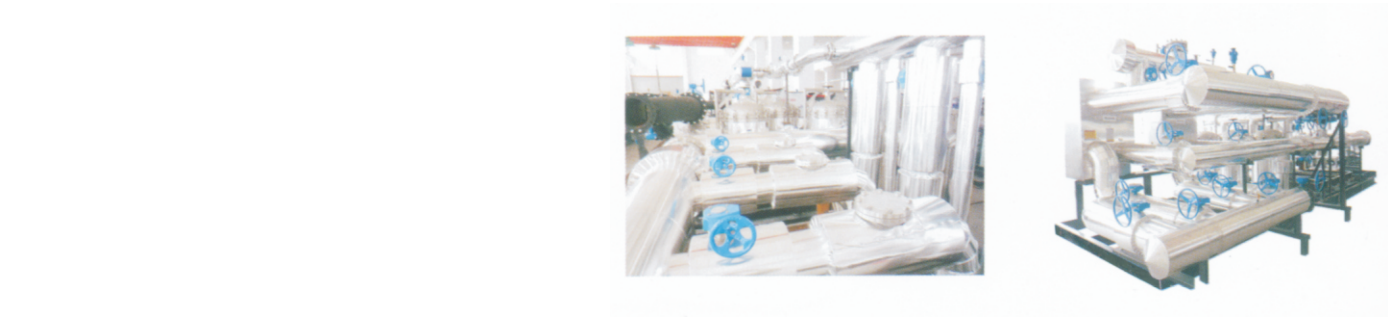
3. Test run of system

Normal temperature water should be used during systemtest test run.

Place the plate type heat exchanger on the testing desk, connect the water and electrical power, and operate for 30 minutes according to the maximum designed flow capacity.

Check if the electrical wireless of the water pump is connected correctly, there is no noise and other unusual phenomenon during operation, there is no temperature rise on the bearings during the operation of the water pump.

Test of the control system: All the control system must conduct logical test run without load.



MPU系列换热机组的产品出厂包装发运储藏：

The leaving factory packing, shipping and storage of MPU series heat exchanger unit

1、包装

MPU系列换热机组和附件、备件、技术文件（包括使用说明书、合格证、装箱单、产品总装图、产品系统图、电气原理图及接线图、产品质量证明书等）一起牢固包装，紧固于箱内。

整体发货包装：机组的底座固定牢固，各管端口均加设支撑。

2、包装箱外面麦头：

- 1、收货单位地址及名称；
- 2、产品名称及型号；
- 3、外形尺寸(m)；
- 4、总质量(kg)；
- 5、制造厂名及地址；
- 6、包装日期；
- 7、注意事项及标记：如“向上”，“防潮”等。
- 8、产品及其部件应贮存在通风干燥、无易燃烧、无腐蚀性物质的仓库内，临时存放应用防雨布盖严。
- 9、产品及其部件在运输过程中，应防止剧烈震动，防止日晒、雨淋及化学物品的侵蚀。

MPU系列换热机组安装、调试：

- MPU系列换热机组的安装：
- 用户的供热管网打压测试
- 用户的供热管网扫线
- 关断所有换热机组阀门；
- 安装一、二次网供回管路及补水管路；
- 安装机组控制仪表柜的电源线；
- 安装机组专用室外温度传感器(该传感器随机供货)，该传感器应安装在建筑物外侧的北面阴凉侧；

1. Packing

MPU series heat exchanger unit and accessories, spare parts. technical document (including user is instruction manual, certificate of conformity, packing list, general assembly d rawing, system drawing, electrical schematic diagrams and connection diagrams, and quality control certificate of the product.etc.)should be firmly packed together, and secured inside the case.

Dispatch packing of complete unit: The unit foundation base should be strong enough, and every piping outlet should be added support

2. External shipping marks of packing case

1. Address and name of Consignee;
2. Name and model number of product;
3. Outer dimensions(m);
4. Total weight(kg);
5. Name and address of manufacturer;
6. Date of packing;
7. items to be noted and marking: Such as This side up Protection against moisture, etc;
8. The product and related parts should be stored in a dry and ventilated area, free of any inflammable and corrosive materials. In case of temporary storage, rainproof canvas should be used to cover the packed product.

Installation of MPU series heat exchanger unit:

- Pressure test of heating supply pipeline network of end user;
- Scavenger pipeline of heating supply pipeline network of end user;
- Shut off all the valves of heat exchanger unit;
- Installation of primary and secondary supply& return pipelines and water supply pipeline;
- Installation of electrical wireless for instruments control cabinet of the unit;
- Installation of special outdoor temperature sensor for the unit this particula rsensor is supplied together with the unit): the sensor should be installed in a cooled spot at the northern side of the external side of the building.
- In the duration of transportation the product and related parts, precaution should be taken to prevent severe vibration, direct sunshine, raining and corrosion by chemical substances.

MPU系列换热机组的运行维护与保养：

The operation maintenance service and maintenance of the MPU series heat exchanger unit

MPU系列换热机组的试运行：

人员 MPU系列换热机组试运行期间，用户应配齐相关工作人员进行现场运行监护：

水电气用户的换热站内的水电气准备就绪

开机

- 1、在启动MPU系列换热机组前，把控制仪表柜上的循环泵及补水泵及电动调节阀等所有的选择开关均置于手动位置；
- 2、系统注水，同时做好排空工作，确保系统已充满水并达到设计静压值；
- 3、循环泵的试运行，检查机组有无由于运输或安装造成的渗漏，以及各压力表，温度计等仪表是否有异常；
- 4、二次管网系统的缓慢升温：手动打开一次管路上电动调节阀，手动缓慢地打开一次网上的关断阀，使二次网的升温平稳缓慢地进行，直到二次网的供水温度达到设定温度后，使机组处于满负荷运行，进行烤机运行，烤机运行结束后把一次网上的电动调节阀的控制开关置于自动位置，投入自动运行；
- 关机

停机开机的顺序：

如机组处在自动控制下，停机会按程序自动进行；

如机组处于手动运行，停机开机的顺序：先关断一次网的电动调节阀，延时后停循环泵；开机时先运行循环泵，延时打开一次网的电动调节阀。

MPU系列换热机组的日常运行

MPU系列换热机组的运行，一般处于自动运行，较少需要人为的干预，只需按相关的操作规定做好历史数据的记录工作；数据记录：操作人员要认真做好运行参数的记录工作：一、二次网的运行温度、压力、流量等，水泵的电机的电流电压等现场运行有无异常，水泵噪音等是否正常，温升是否正常紧急情况的应急处理

MPU系列换热机组的日常维护

MPU系列换热机组的日常维护，非常简便，基本上是免维护，所有配置的元器件均为免维护型产品：控制好室内温度在许可的条件下；相关设备的正常润滑处理；

MPU系列换热机组的保养

当机组设备处于非运行状态时；

应关断设备上所有的关断阀；

打开排泄阀，排空机组中的介质；

断开控制仪表柜电源；

水泵与板式换热器的维护保养参照随机样本。

Test run of MPU series heat exchanger unit:

Presonnel
During the test run of MPU series heat exchanger unit, the end user should provide sufficient related working personnel to carry out the site monitoring and supervision for the operation;
Water and electricity.
The water and electricity in the end user heat exchanger station should be available:
Start-up of the unit

- 1、Bofore start up the MPU series heat exchanger unit, ensure that all the selection switches on the instrument control cabinet for circulation pump, water supply pump and electrically regulation valve are selected at their manual positions;
- 2、Feed water Into the system. and in the mean time ensure that the pipelines are completely discharged. Ensure that the system has been fully filled up with water and reached the designed static pressure value;
- 3、Conduct test-run on the circulation pump. inspect the unit to see if there is any leakage due to transportation or installation. Also inspect the various pressure gauges, thermometer and other mstruments to see If there is any abnormalities;
- 4、The gradual temperature rise of the secondary pipeline network system: Manually open the electrical regulation valve, manually and slowly open the shut-off valve of the primary network, so that the temperature rise of the secondary network is progressing slowly and steadily After the supply water temperature of the secondary network reaches the set temperature. conduct the unit In a full load operation. so as to make a heating machine operation, After the completion of the heating machine operation, set the control switch of the electrical regulation valve on primary network to automatic position to run an automatic operation.

Shut off the unit

The sequence for start-up and shut-down of unit:
If the unit is under automatic control mode, then the shut down procedure should be done In accordance with the programme;
If the unit Is under manual control mode, then the start—up and shut-down should be done as follows: First shut off the electrical regualtion valve of primary network, and subsequently shut off the circulation pump after a time extension:Operate the circulation pump first while start up, and open the electrically regualtion valve after a time extension.

The daily operation of the MPU series heat exchanger unit

The operation of the MPU series heat exchanger unit is usually selected under automatic mode, and requires verv little human involment. It is only necessary to keep a good record of the historical data according to the related operation regulations:

Record of data:

The operator must ensure to keep a good record of the operation data; the operation temperature, pressure, flow and other data of the primary and secondary network, as well as the current and voltage of the water pump motor, etc;
To see whether there is any abnormalities in the operation at site, whether the noise and temperature rise of the water pump are normal;

The urgent handling of the emergency situation

The daily maintenance of the MPU series heat exchanger unit

The daily maintenance of the MPU heat exchanger unit is very simple and convenient. Basically it doesn need any maintenance and all the elements and parts provided are of the maintenance-free products;
Ensure that the room temperature is properly controlled under permissible conditions;

The related equipments should be routinely lubricated.

The maintenance of the MPU series heat exchanger unit

When the equipment is under non—operation condition;
Ensure that all the shut—off valves on the equipment are shut off;
Open the discharge valves, and empty the entire medium in the unit;
Cut off the power of the instrument control cabinet;
Refer to the instruction attached with the unit for the maintenance of water pump and plate type heat exchange.



随需应变的换热解决方案！
 On Solution For Heat Exchanger