

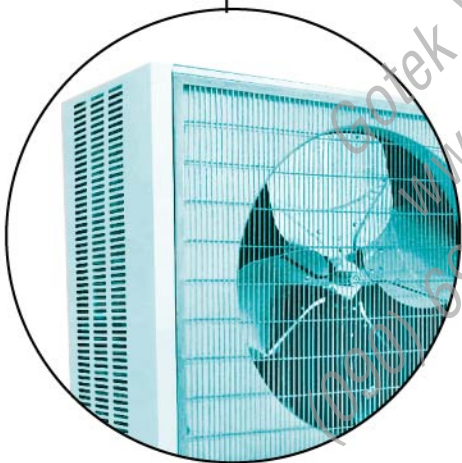


Mammoth
The Leader In Custom HVAC & Energy Saving



Air-to-Water Heat Pumps (C Series)

10kW - 38kW (50Hz)



Mammoth (Shanghai) Air Conditioning Ltd.

Mammoth

Since 1935, Mammoth has been producing and installing air conditioning units with the most innovative technologies. Our solutions are found in some of the world's most important buildings for its unparalleled flexibility and efficiency. When performance and energy efficiency are important factors to a project, our products are often chosen as the final solution.



Established in Minneapolis, USA - 1935



Since 1988, Mammoth has been providing energy saving products to projects in China. In 2002, Mammoth invested US\$10 million to establish its manufacturing facility in Anji, China's #1 Ecological County, and its national sales headquarter in Shanghai to provide custom engineered air conditioning systems for projects in China and abroad.

Energy Saving & Innovation



Mammoth produces air conditioning equipment that leverages energy saving and innovative technologies. Our products include, but not limited to, geothermal & water source heat pumps, air & water cooled commercial air conditioning units, fan coils, AHU, VAV box, screw chillers, and energy recovery units.

Customization & Energy Saving is Our Standard



Mammoth has been recognized as a leader in providing custom designed Total Energy Solution HVAC Systems. Our solutions can fit any design applications from WSHP systems to geothermal systems, from hybrid systems to various energy saving systems. Based on the needs of our customers, our recommendations help our customers assess the economic benefits of Mammoth solutions over alternative systems.

Outstanding Achievement



Mammoth has also brought its innovative design concepts to the industry. We have printed numerous technical design manuals and books to facilitate engineers in the design of Renewable Energy HVAC Systems. Together with industry associations and the commercial section of the US Embassy and Consulate General Offices, we have frequently conducted technical seminars in major cities in China and abroad. We have supplied our solutions to projects that amount to almost 10 million sq. m., and have been continuously recognized as the leader in Renewable Energy products in China.

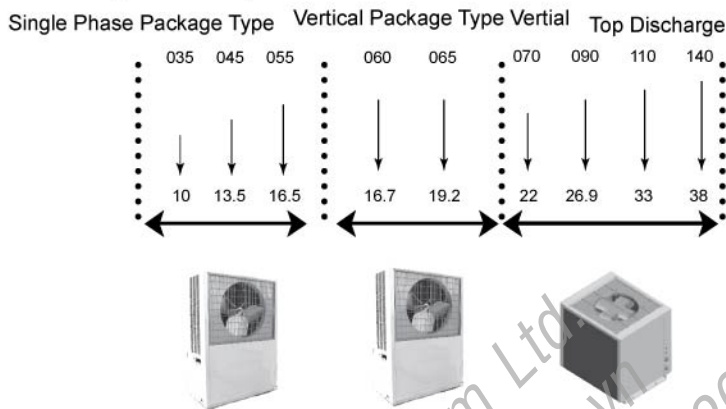


Take the central air conditioning system of large building into home, connect with fan coil units and other air handling units, completely independent temperature control system can meet the temperature requirement of each room. Unit has been widely used in villa, high class apartment, office building and hotel etc. with its advantages of high efficiency, low noise, compact structure, easy operation, safety running and convenient assembly and maintenance etc.



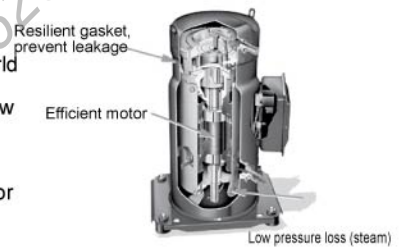
Multiple Structures, Easy Combination With Architectural Style

Cooling capacity ranges from 7.5kW to 38kW, while heating capacity ranges from 8kW to 40kW; There are split type, rear air discharge & top air discharge type and duct type(external duct connecting, suitable for limited space). Wide-range capacities and can be customized according to user's requirement.



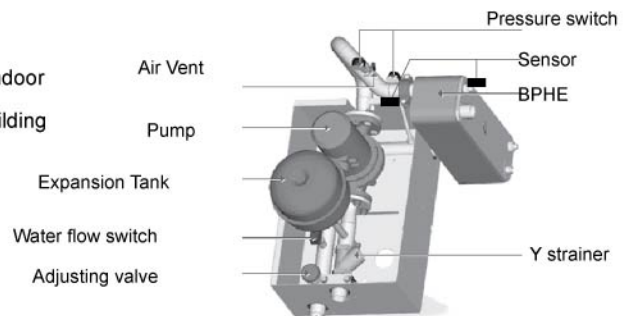
Excellent Performance

Unit utilize fully automatic micro-computer controlling technology and assembled with world famous top brand accessories. Strictly test ensures their reasonable match. Efficient screw compressor is not only with excellent performance but also low noise; High efficient heat exchanger ensures the full play of unit abilities; The reasonable matched blower, fan motor and water pump etc. guarantee the steady running and low vibration and noise.



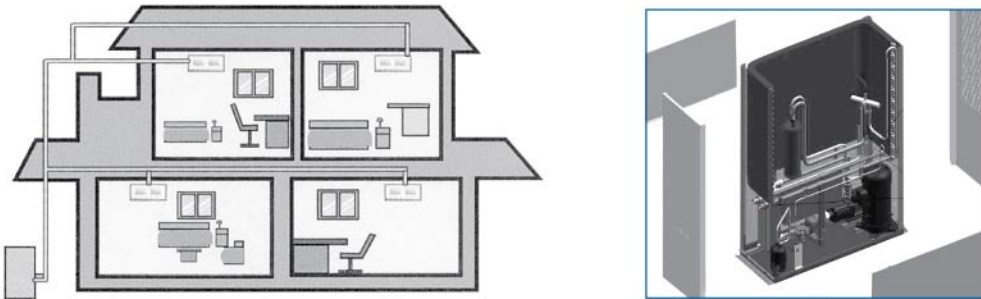
Standardized Water System Accessory

Use water as the chilling carrier and there is no possibility of indoor refrigerant leakage. Assemble the water pipes according to building actual situation to ensure the uniformity of cooling capacity.



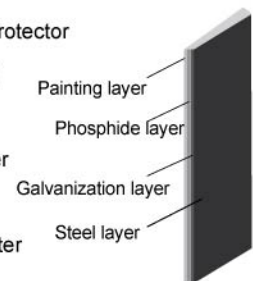
Convenient Installation and Operation

Reasonable and compact structure design, no special installation room required, the installation space can be around house or balcony or roof. The refrigerant charging, tubing connection and water flow setting have been completed at factory. Only pipe fittings reserved for terminal equipments. After connected the inlet and outlet pipes, user can start unit by pressing one key. Both left side and right side of unit are available for inlet and outlet pipe connection, both front side and back side of unit are available for power supply connection and maintaining electrical components, water system piping is connected with standard taper thread fittings, convenient for installation and dismounting.



Thoughtful Safety Protection

The refrigerant system has the protection devices of high, low pressure protector, discharge temperature protector and over load protector etc. which ensure the steady running. Due to the small flow section of plate brazed heat exchanger, the program measuring the leaving water temperature and refrigerant evaporating temperature the same time to prevent brazed plate heat exchanger from freezing. Microprocessor controller automatically control unit ON/OFF by water temperature; When the temperature is too low, unit will automatically stop to avoid damage. Unit cabinet utilize galvanized steel, phosphatized and coated polyester resin on its surface, which can be used under bad environment.

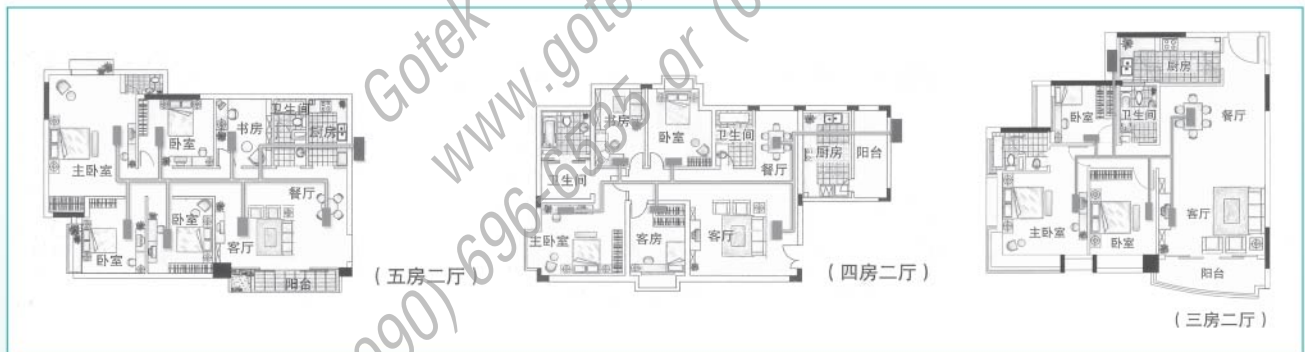


Microprocessor Control

Microprocessor automatically supervise the operation status of each component and feedback to controller (including error), which makes it easier for user to judge and maintain.

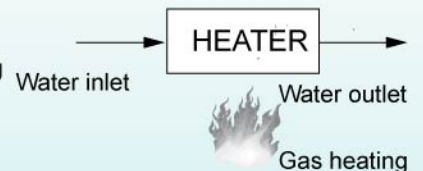
Free Arrangement of Indoor Fan Coil Unit

Fan coil unit is selectable according to room structure, there are four side outlet cassette type, low static pressure concealed type, ultra-thin type and air handling units etc. for optional.



Auxiliary Facility

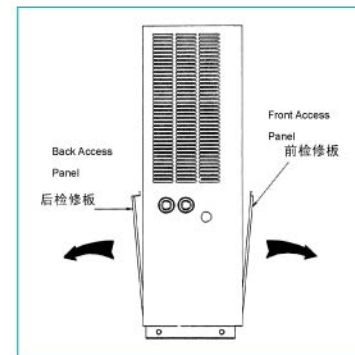
Auxiliary electric heater or gas heater can be added to supplement required heating energy. Connect the auxiliary heater control circuit to unit, microcomputer will automatically control it.



Convenient Maintenance

All components can be easily maintained after removed the access panel.

If unit abnormal stopped and error occurs, microcomputer controller will display the error code which is very helpful for finding out solutions.



Nomenclature

MAC	055H C
1	2 3 4

- 1: MAC stands for Mammoth air to water heat pump
- 2: Unit model
- 3: C: Cooling only, H: Heat pump
- 4: Product design code

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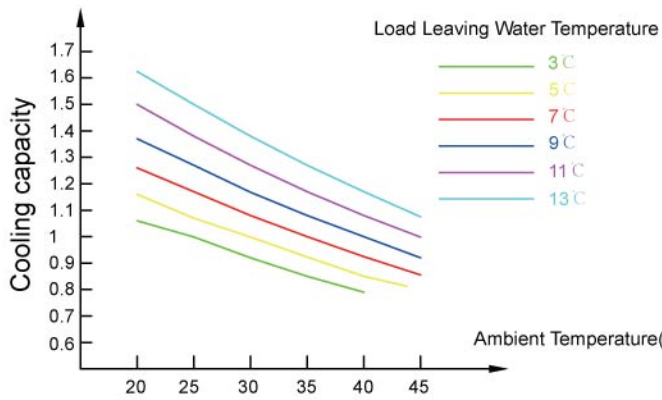
Model	Heat Pump	MAC035HC	MAC045HC	MAC055HC	MAC060HC	MAC065HC
	Cooling only	MAC035CC	MAC045CC	MAC055CC	MAC060CC	MAC065CC
Cooling Capacity	kW	10	13.5	16.5	16.7	19.2
Heating Capacity	kW	10.5	14.3	17	19.2	20.8
Configuration	Vertical Rear Discharge Package Type					
Power Source	220V~/50Hz			380V/3N~/50Hz		
Comp. Cooling Power Input	W	3678	4948	5928	5500	6600
Compressor Current	A	16.7	22.5	26.9	11.4	12.4
Comp. Heating Power Input	W	3978	5287	6418	6270	6900
Compressor Current	A	18	24	29.2	11.5	12.6
Fan Power Input	W	120	380	380	250	250
Motor Current	A	0.55	1.73	1.73	1.3	1.3
Pump Power Input	W	550	550	750	920	920
Pump Current	A	2.5	2.5	3.4	1.3	1.3
Rated Water Flow	m ³ /h	1.72	2.32	2.84	3	3.6
Pump Head	m	24	24	24	24	23
Water Pressure Drop	kPa	50	58	67	92	110
Pipe Fittings	Rc1"					
Condenser Type	Fin Copper Coil Type					
Evaporator Type	Braze Plate Heat Exchanger					
Refrigerant	R22					
Noise Level	dB(A)	56	56	60	64	64
Refrigerant Charge	Heat Pump kg	1.8×2	2.1×2	2.15×2	2.25×2	A2.2+B2.0
	Cooling Only kg	1.8×2	2.1×2	2.15×2	2.25×2	A2.2+B2.0
Length×Width×Height	mm	830×620×1550			1006×486×1510	
Unit Weight	kg	105	130	180	200	210

Model	Heat Pump	MAC070HC	MAC090HC	MAC110HC	MAC140HC
	Cooling only	MAC070CC	MAC090CC	MAC110CC	MAC140CC
Cooling Capacity	kW	22	26.9	33	38
Heating Capacity	kW	24.1	28.4	35	40
Configuration	Vertical Rear Discharge Package Type				
Power Source	380V/3N~/50Hz				
Comp. Cooling Power Input	W	7500	9290	10495	12740
Compressor Current	A	14.8	16.9	20.2	23.5
Comp. Heating Power Input	W	7650	9500	10704	13130
Compressor Current	A	15.3	17.3	20.8	24.3
Fan Power Input	W	580	580	580	1330
Motor Current	A	1.3	1.3	1.3	2.46
Pump Power Input	W	750	750	1200	1500
Pump Current	A	1.4	1.4	2.3	2.78
Rated Water Flow	m ³ /h	3.9	4.7	6	6.54
Pump Head	m	24.5	23	28	26.5
Water Pressure Drop	kPa	95	95	96	112
Pipe Fittings	Rc1-1/2"				
Condenser Type	Fin Copper Coil Type				
Evaporator Type	Braze Plate Heat Exchanger				
Refrigerant	R22				
Noise Level	dB(A)	62	64	64	64
Refrigerant Charge	Heat Pump kg	3.1×2	3.8×2	4.6×2	A5.6+B5.4
	Cooling Only kg	3.1×2	3.8×2	4.6×2	A5.6+B5.4
Length×Width×Height	mm	1320×1095×1164			1320×1095×1086
Unit Weight	kg	350	360	410	430

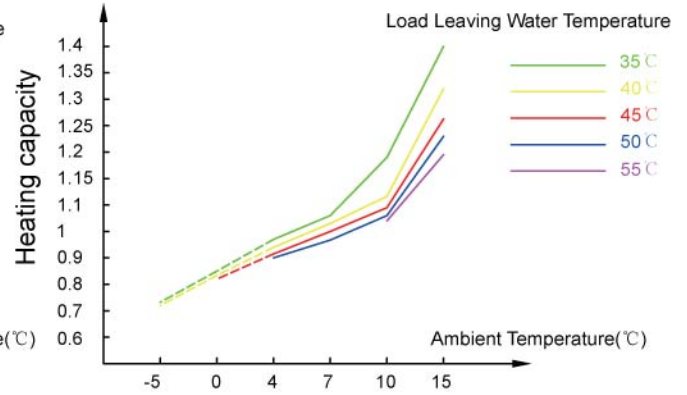
Note:

- Nominal cooling is based on 7°C load side leaving water temperature, outdoor dry bulb temperature is 35°C
- Nominal heating is based on 45°C load side leaving water temperature, outdoor dry bulb temperature is 7°C, wet bulb temperature is 6°C
- Parameters listed in above table is subject to change without notice
- Standard water side design pressure is 1.0MPa

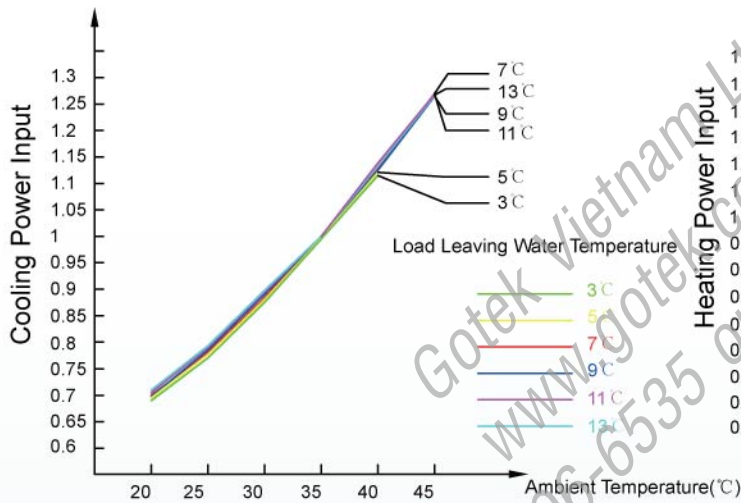
Cooling Capacity Correction Table



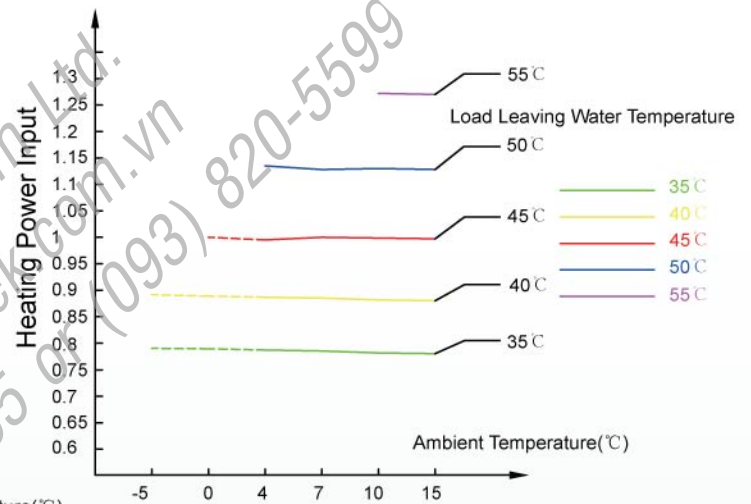
Heating Capacity Correction Table



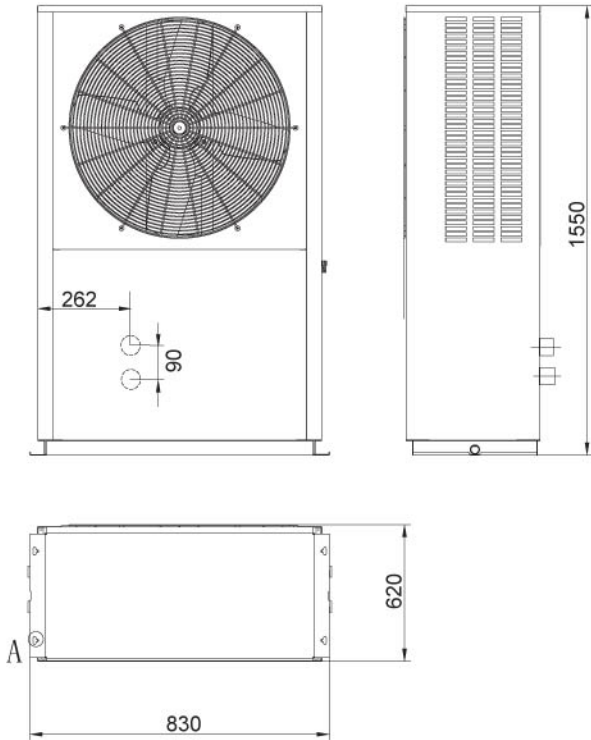
Cooling Power Input Correction Table



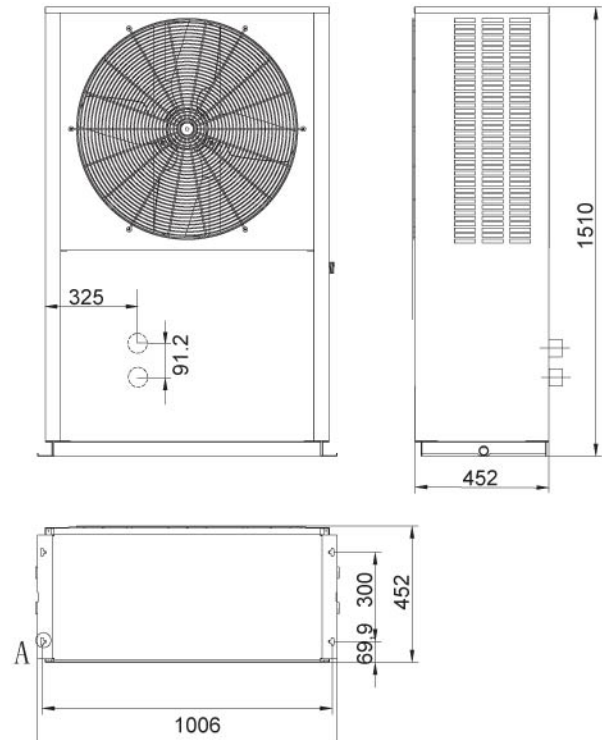
Heating Power Input Correction Table



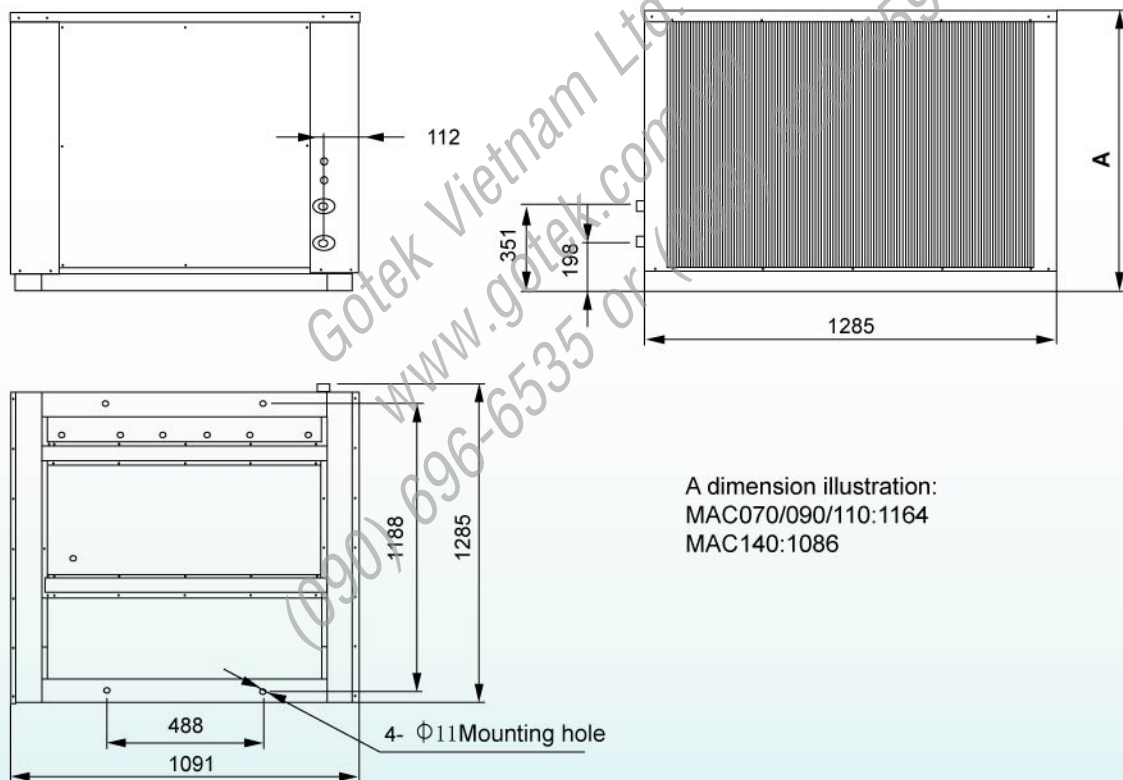
Model: MAC035/045 H(C)C



Model: MAC055/MAC060/MAC065H(C)C



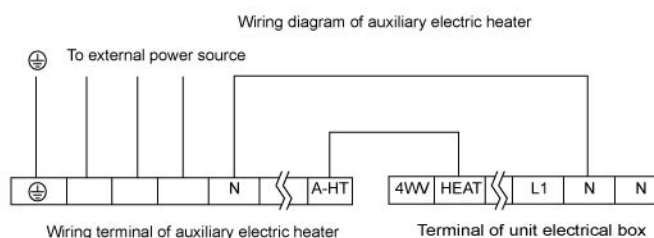
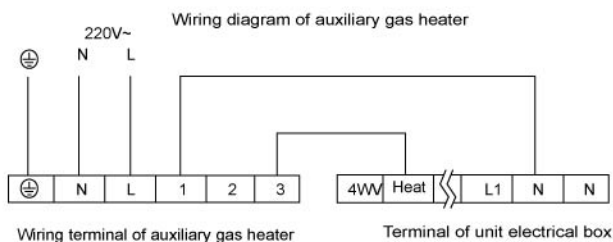
Model: MAC/070/090/110/140H(C)C (Top air discharge unit)



A dimension illustration:
MAC070/090/110:1164
MAC140:1086

Electrical Connection of Auxiliary Electric Heater and Auxiliary Gas Heater

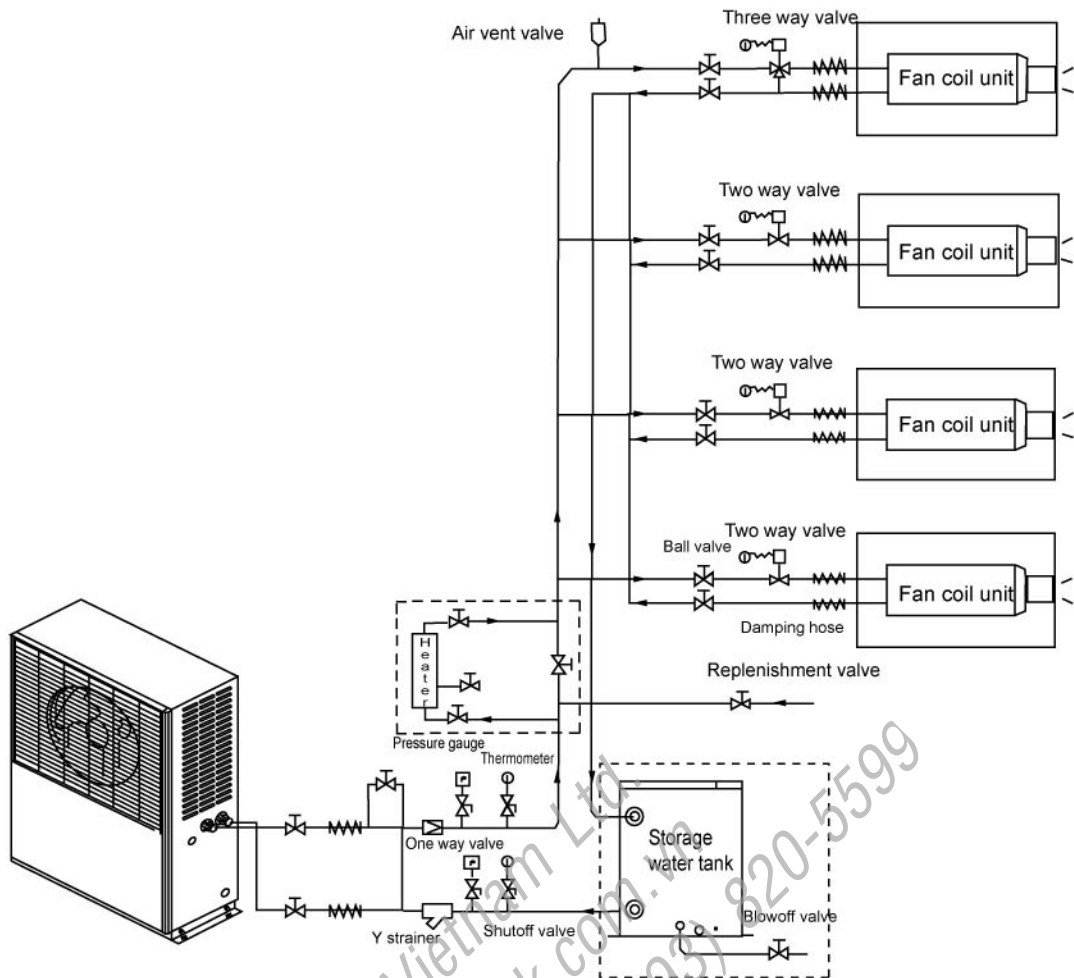
If any auxiliary electric heater or gas heater required, please read the IOM of auxiliary heater carefully before installation, take below diagram for reference when connect the wires between auxiliary heater and unit. Unit controller will automatically control the ON/OFF of auxiliary heater.



Model	Heat pump	MAC035HC	MAC045HC	MAC055HC	MAC060HC	MAC065HC	MAC070HC	MAC090HC	MAC110HC	MAC140HC
	Cooling only	MAC035CC	MAC045CC	MAC055CC	MAC060CC	MAC065CC	MAC070CC	MAC090CC	MAC110CC	MAC140CC
Power supply	220V ~ /50Hz				380V/3N~/50Hz					
Total power input(W)	4648	6217	7548	6870	7270	8980	10830	12484	15960	
Running current(A)	21.05	28.23	34.33	15.1	15.2	18	20	24.4	29.54	
Model	Wire diameter(mm ²)	6	6	10	4	4	6	6	6	10
	Quantity	3	3	3	5	5	5	5	5	5

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Mammoth recommend closed loop system, make reference to below diagram when installing.



For sake of energy saving and safety running, Mammoth can afford water system accessories, which include insulated stainless steel water storage tank, safety valve, blowoff valve, automatic air vent valve, Y type strainer and self-replenishment valve.

Auxiliary heater is optional, can be either electric heater or gas heater. If needed, please contact distributor or Mammoth; see the diagram for installation; if not necessary, the components shown in dashed box can be removed.

Remark: Please see <<Air Conditioning Design Handbook>> for water pipe system design, please see GB50243-1997 for construction and acceptance.

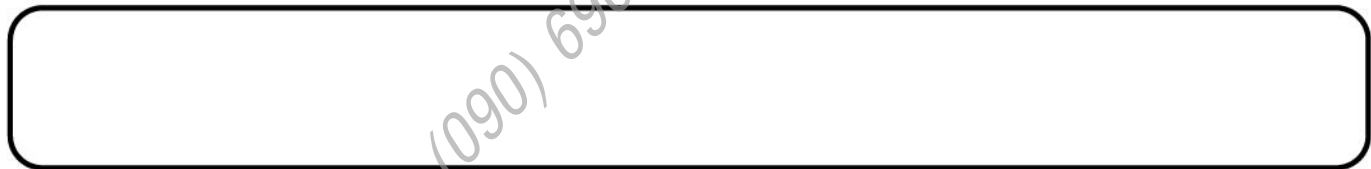


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ISO9001 ISO14001 OHSAS18001



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www.mammothchina.com

Mammoth dedicates to continuous improvement of products and unit parameters are subject to change without notice.

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