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Midea Building Technologies Division

Midea Group

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Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.



شرکت آرمان بنیان کارا پارس سهامی خاص

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با ۵ سال گارانتی و خدمات پس از فروش نامحدود



# Air Cooled Modular Chiller

mbt.midea.com

MIDEA BUILDING TECHNOLOGIES 2023



# Midea MBT

Midea MBT (Midea Building Technologies) is a key division of the Midea Group, a leading provider of comprehensive solutions of intelligent building, involving energy sources, elevators, control systems, and heating, ventilation & air conditioning. Midea MBT has continued with the tradition of innovation upon which it was founded and emerged as a global leader in the HVAC and building management industry. A strong drive for advancement has resulted in an extensive R&D department that has placed Midea MBT at the forefront of a competitive edge. Through these independent projects and joint-cooperation with other global enterprises, Midea has supplied thousands of innovative solutions to customers worldwide.

**3** businesses constitute the significant components of Midea intelligent building solutions

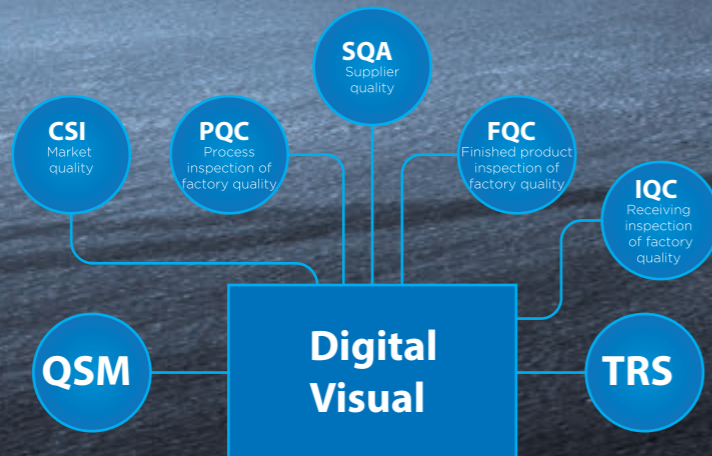
**4** production bases can achieve fast delivery



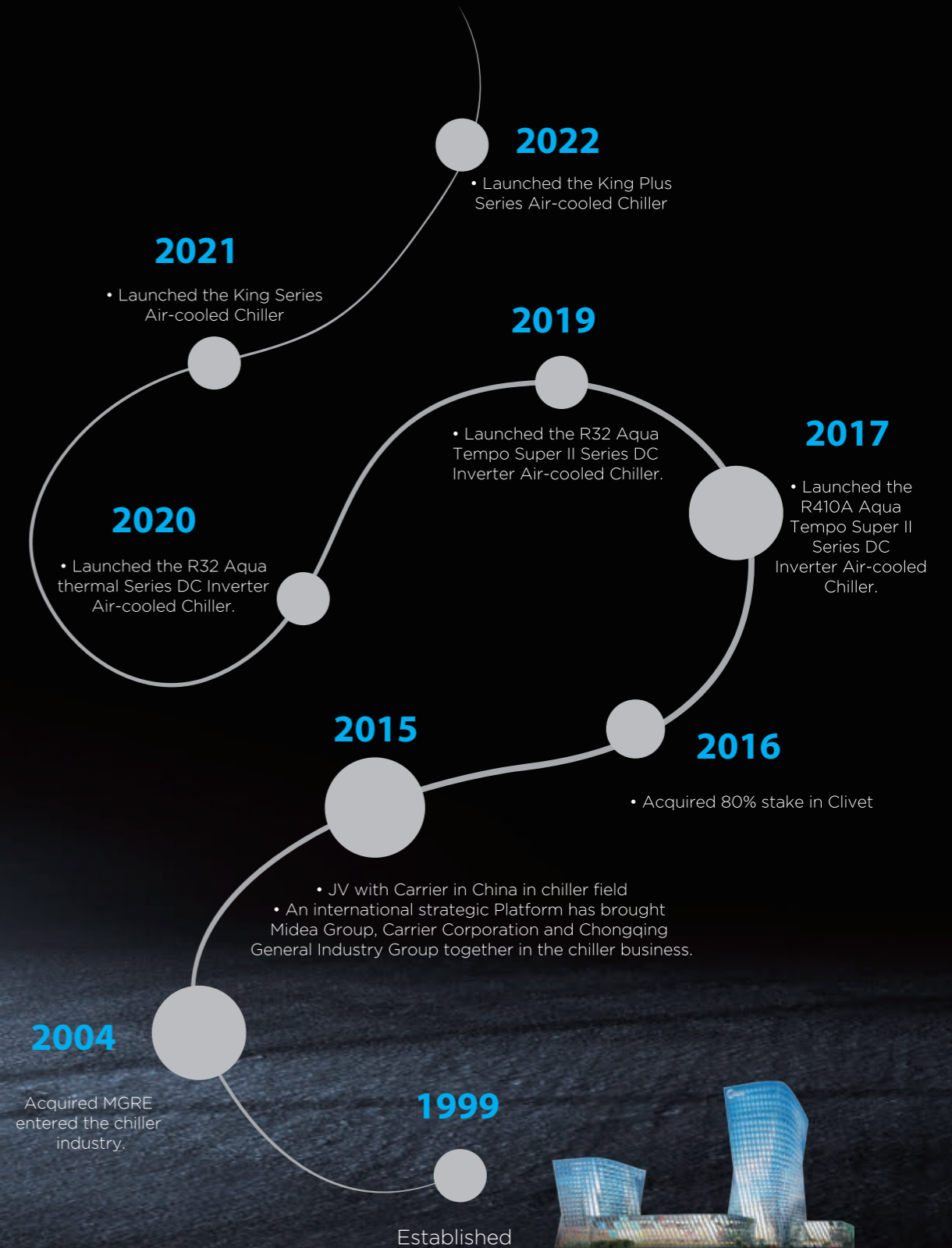
Over **100** testing labs cover all different real application sceneries



**All** products can be visualized and digitalized throughout entire process



## Midea Air-cooled Modular Chiller History

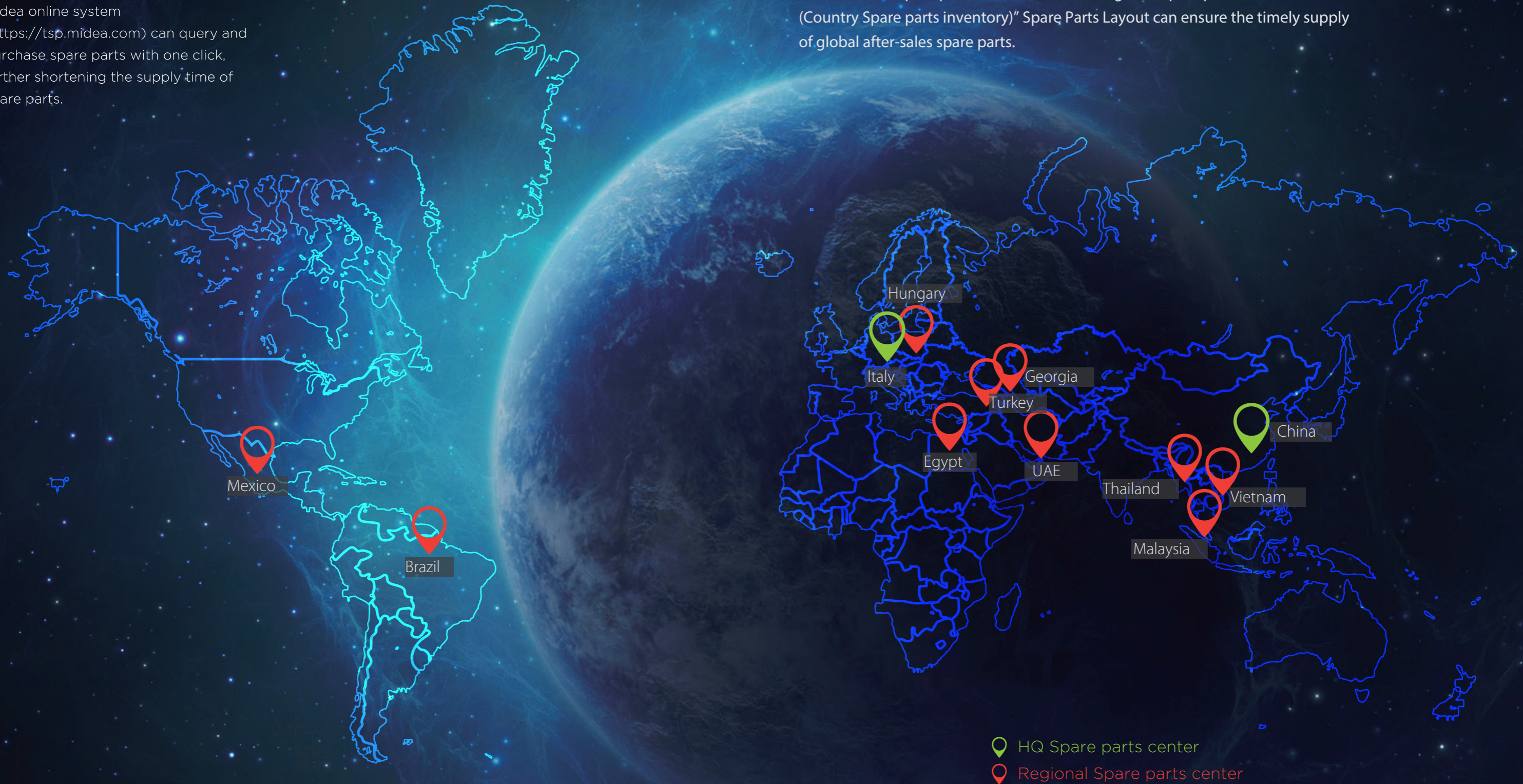




## Midea Global Spare Parts Center

The global spare parts center provides high quality and fast spare parts supply. Midea online system (<https://tsp.midea.com>) can query and purchase spare parts with one click, further shortening the supply time of spare parts.

The “**2** (HQ Spare parts center) + **10** (Regional Spare parts center) + **N** (Country Spare parts inventory)” Spare Parts Layout can ensure the timely supply of global after-sales spare parts.

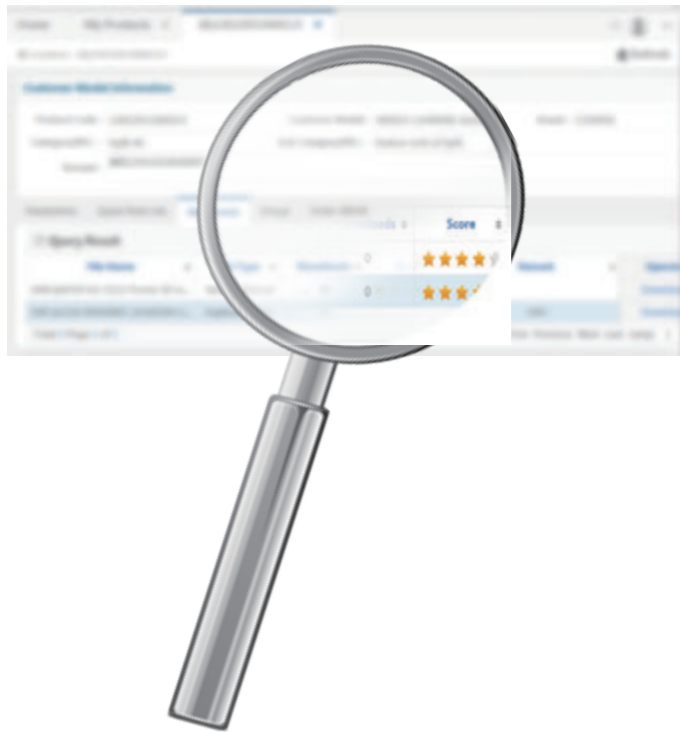




## Technical Support Platform (TSP)

TSP is a platform for customers to provide professional technical support. Through TSP, you can inquire product information, documentation, spare parts and trouble-shooting, initiate technical questions and quality complaint process, and also support self-service spare parts order.

Website address: <https://tsp.midea.com/>



### My order

Inquire spare parts from exploded view and place spare parts order directly in TSP.

### Document inquiry and download

View or download product technical documentation online, such as catalogs, images, training PPTs, etc.

### Technical inquiry & FAQ

Initiate technical questions online, and our technicians answer them online in time. Find a quick solution in the FAQ.

### Troubleshooting

Query the error code and solution by SN, model name, error code or product type.

### Complain

Initiate the product quality complaint process online, and our after-sales engineers handle related complaints in time.

## Mobile Intelligence Service App (MISA)

MISA is the mobile terminal of TSP, with the same functions as TSP. The mobile service makes technical support more timely and convenient.

<https://link.midea.com>



FAQ



Complain

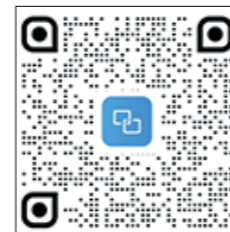


Technical Enquiry

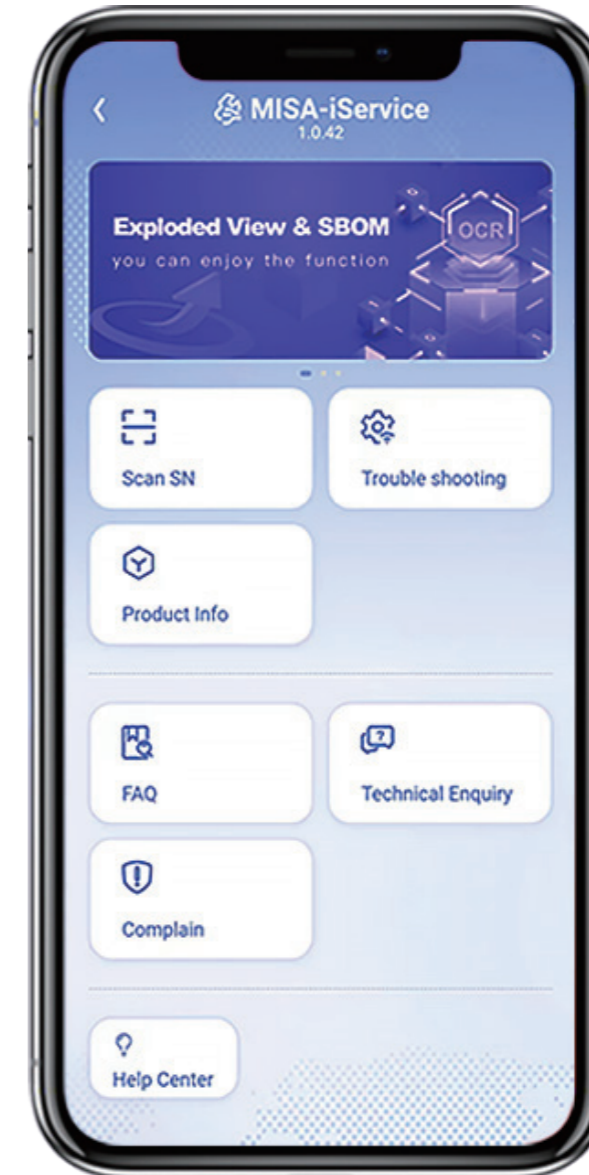


Trouble shooting

Download



Scan above to download the mobile app



Search product manuals



Spare Parts list

Feedback



Thank you very much for your attention and advice



# MBT Learning Academy

## Objective

MBT Learning Academy aims to provide training to the sales personnel as well as technical personnel in order to increase the utilization for your MBT equipment. Once you have purchased equipment from MBT, taking care of the equipment is topmost priority. MBT Learning Academy offers training courses to learn firsthand from the manufacturer what it takes to get the best out of your MBT product. The goal of MBT Learning Academy is to provide product specific training, safe work procedures and expertise in carrying out the installation and maintenance of MBT products as well as teaching the main selling points in order to help the sales people sell the MBT products with ease.

## Training Centers

Our world class training centers provide knowledge and skills necessary to efficiently deploy MBT technologies. The training centers include dedicated laboratories to provide hands-on experiences with various systems, components and controls to refresh and enhance the skills of your sales, design and installation and service teams. Right now we operate our trainings from the below two locations:

### 1. MBT Training Center

Address: MBT Training Center, 2nd Floor, Building 6, Midea Global Innovation Center, Beijiao , Shunde, Foshan, China Pin- 528311

The Midea MBT Training Center is situated 70 kilometers from Baiyun Guangzhou International Airport.

Products: VRF, M thermal

### 2. Chongqing Midea Training Center

Address: No. 15, Qiangwei Road, Nan'an District, Chongqing, China

Chongqing Midea Training Center is 35 kilometers from Chongqing International Airport.

Products: Centrifugal Chiller, Screw/Scroll Chiller and Terminals



VRF training



M thermal training



Chiller training

## Global Technical Trainings

The training courses by MBT Learning Academy are divided into the following two categories with different targeted audiences for each.

**Design and Application Trainings:** The design and application trainings for various products are basically for the sales personnel selling MBT products in order to give them basic understanding about the main features. The trainings are conducted on a global level inviting sales engineers, technical engineers, consultants and project designers from different parts of the world.

**After Sales- Service Trainings:** These trainings are dedicated for the After Sales/ Service personnel in order for them to better carry out the installation, commissioning and maintenance of MBT products. Technical person and engineers from different parts of the world are invited to take part in these trainings.

**Online Trainings:** The trainings to the Global customers can also be done online with the help of Team and Midea Meeting software. This way, the customers do not need to be physically present for the training. Amid the COVID-19 pandemic, MBT Learning Academy has conducted a lot of online trainings. The training videos are available on the TSP system and can be downloaded by using QR codes.

Products: VRF, M thermal, Chillers and Terminals

**Highly Skilled Trainers:** The trainers for various courses by MBT Learning Academy are expert people with vast experiences in their field. Most of them have a deep insight about the global HVAC market and help the attendees to better understand the MBT products.

**Training Certificates:**

The attendees for Global trainings are provided a training certificate highlighting the courses discussed in the training, signed by Mr. Henry Cheng, General Manager of MBT Overseas Sales Company.

**Registration:**

You can contact your respective Midea contact point to provide you with the complete schedule about the global technical trainings as well as how to register for these trainings.

For further enquiries about the Global Trainings conducted by MBT Learning Academy, please send email at the following email address:

peeyush@midea.com





### Office building

#### FINNING CAT Office Building

- 📍 Country: Chile
- 📍 City: Santiago
- 🏢 Outdoor Units: Air-cooled scroll chiller
- 🏠 Indoor Units: FCU
- 🕒 Total Capacity: 740 HP



#### Vimpelcom Office Building

- 📍 Country: Russia
- 📍 City: Yaroslavl
- 🏢 Outdoor Units: Air-cooled scroll chiller
- 🏠 Indoor Units: FCU
- 🕒 Total Capacity: 186 HP



### Transportation



#### Sulaymaniyah Airport

- 📍 Country: Iraq
- 📍 City: Sulaymaniyah
- 🏢 Outdoor Units: Tropical air-cooled scroll chiller
- 🏠 Indoor Units: FCU
- 🕒 Completion Year: 2017

### Hotels & Resorts



#### Great Wall Plaza

- 📍 Country: Vietnam
- 📍 City: Hai Duong
- 🏢 Outdoor Units: Air-cooled modular chiller & ATW Heat Pump
- 🏠 Indoor Units: FCU
- 🕒 Total Capacity: 700HP

### Complex

Grand Comfort is the largest material market in middle Asia, the total area is 55,000 square meters. Midea CAC provided 21 air-cooled power and super modular chillers for the project. The total capacity is up to 5,780kW.



#### Grand Comfort Material Market

- 📍 Country: Kyrgyzstan
- 🏢 Outdoor Units: Air-cooled modular chiller
- 🏠 Indoor Units: FCU & AHU
- 🕒 Total Capacity: 5,780kW
- 🕒 Completion Year: 2015





**City Mall**

- 📍 Country: Tanzania
- 📍 City: Dar es Salaam
- 🏢 Outdoor Units: Air-cooled modular chiller
- 🏢 Indoor Units: FCU & AHU
- 📊 Total Capacity: 1,560kW

Hospitals & Healthcare



**Komar University**

- 📍 Country: Iraq
- 📍 City: Sulaymaniyah
- 🏢 Outdoor Units: Air-cooled screw & scroll chiller
- 🏢 Indoor Units: FCU & AHU
- 📊 Total Capacity: 2,350kW

Industry



**KUKA Robotics in Hungary**

- 📍 Country: Hungary
- 📍 City: Füzesgyarmat
- 🏢 Outdoor Units: Air-cooled scroll chiller
- 🏢 Indoor Units: FCU & AHU
- 📊 Total Capacity: 715kW



**Zetes Power Station**

- 📍 Country: Turkey
- 📍 City: Zonguldak
- 🏢 Outdoor Units: Precision A/C, VRF, Air-cooled modular chiller
- 🏢 Indoor Units: Duct & Cassette, AHU
- 📊 Total Capacity: 500HP

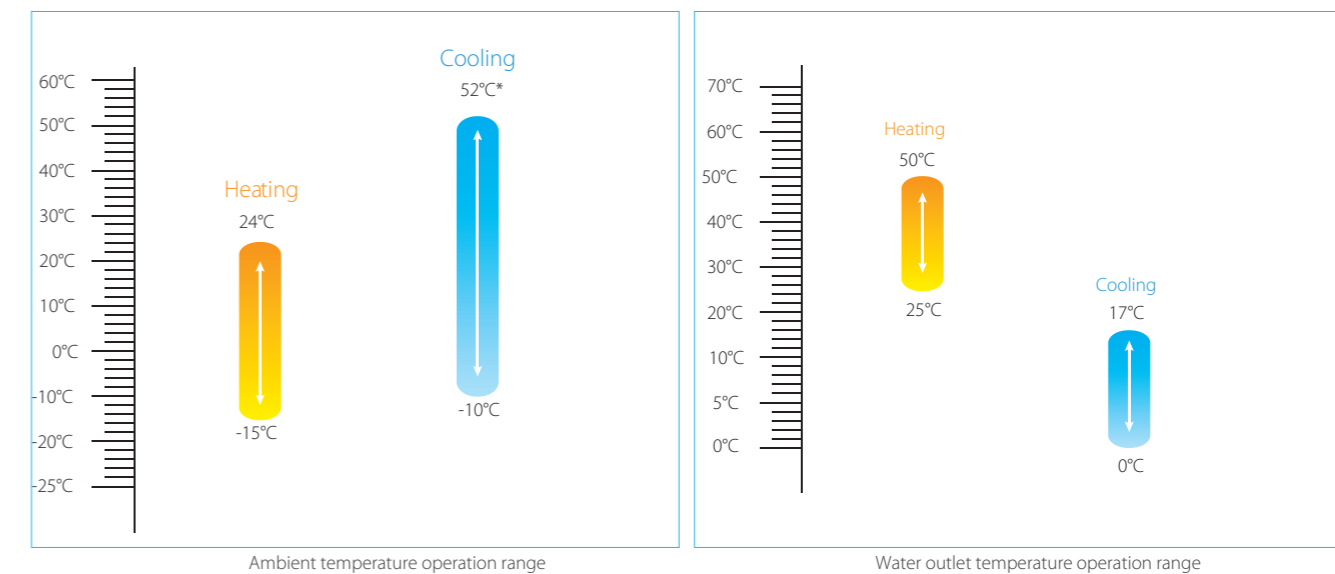


# Aqua Tempo Super Series





- Wide ambient temperature and water outlet temperature operation ranges

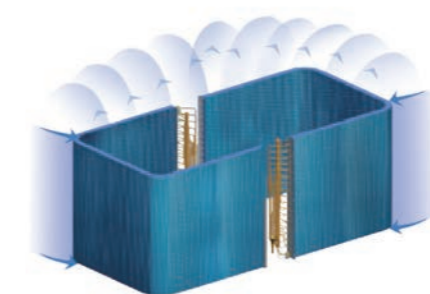


\*It is the maximum range that can be covered by the series. For specific models' range, please refer to the specifications.

### High quality components

- H shape high performance heat exchanger

The chillers use new structure design, H shape condenser, 360° air intake, increase the heat exchanging area, efficiently enhance the heat exchange efficiency, and decrease the covering area.



Newly designed air profile  
Big air flow lower noise

360° Condenser coil  
High efficiency

Removable panel  
Easy to maintain

Transportation hole  
Easy to install

Multi folder frame  
Nice and strong



H shape condenser uses inner grooved copper tube and hydrophilic aluminum foil, greatly improve the heat exchange efficiency.

## Product Lineup

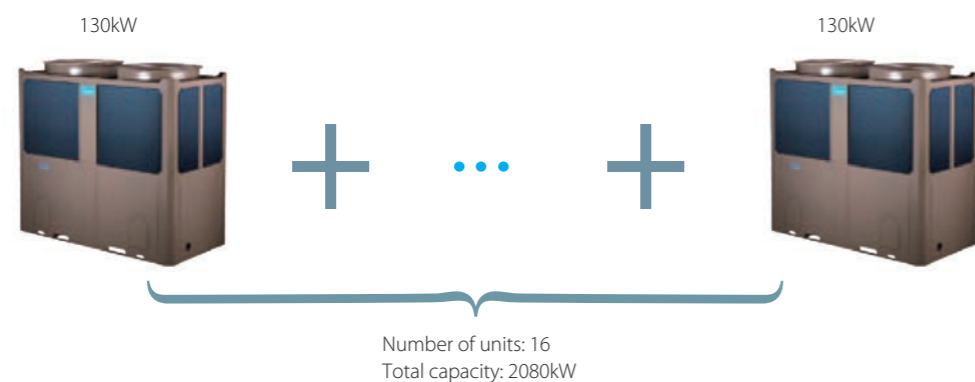
Capacity (kW)	35	65	80	130
Appearance				
Series				
SS-LA				

SS-LA: Super series with low ambient temperature cooling function

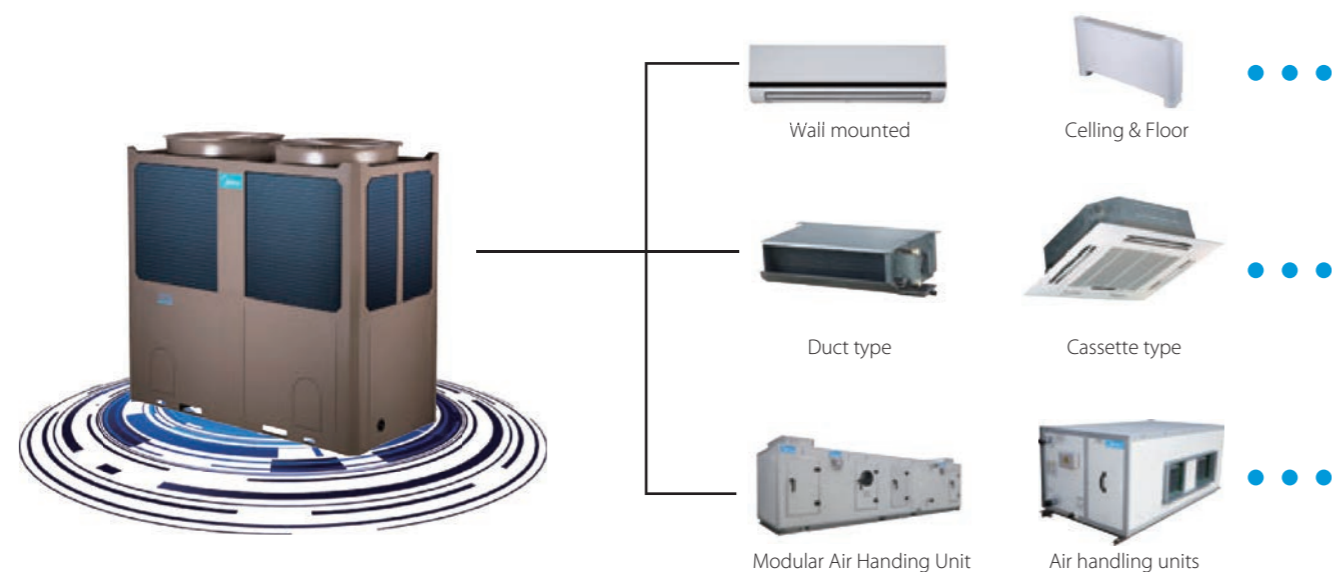
## Features

### Wide application range

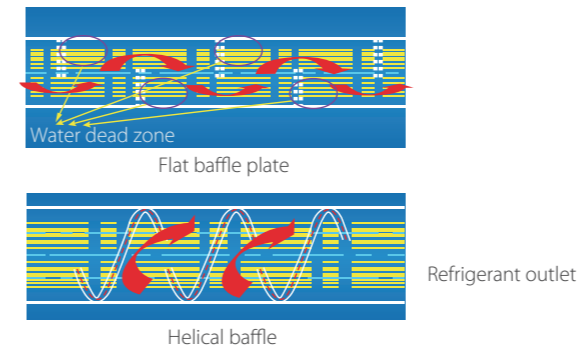
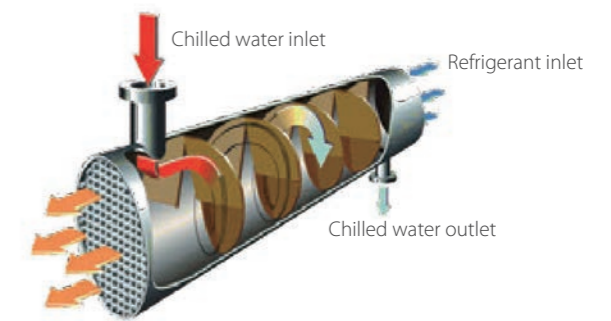
- Aqua Tempo Super chillers with cooling capacity ranging from 35kW to 130kW, combination capacity can be up to 2080kW.



- Freely combine with fan coil units and air handling units. Home owners may choose the best types according to their functional needs.







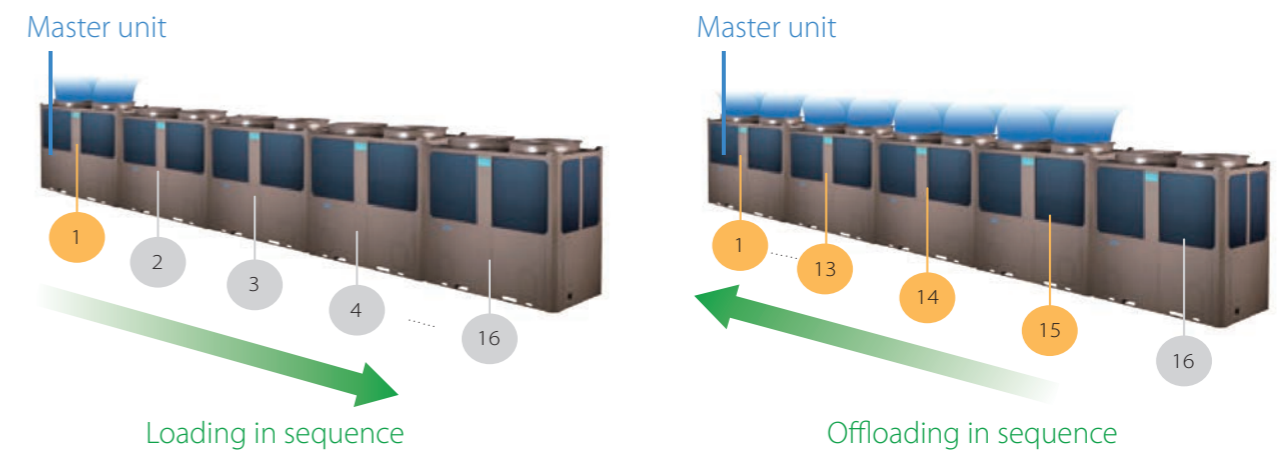
For shell-tube heat exchanger, the module adopts the new helical baffle design to avoid the rectangular place of water dead zone, greatly improve the heat exchange efficiency.

### High reliability

#### ● Alternative cycle duty operation

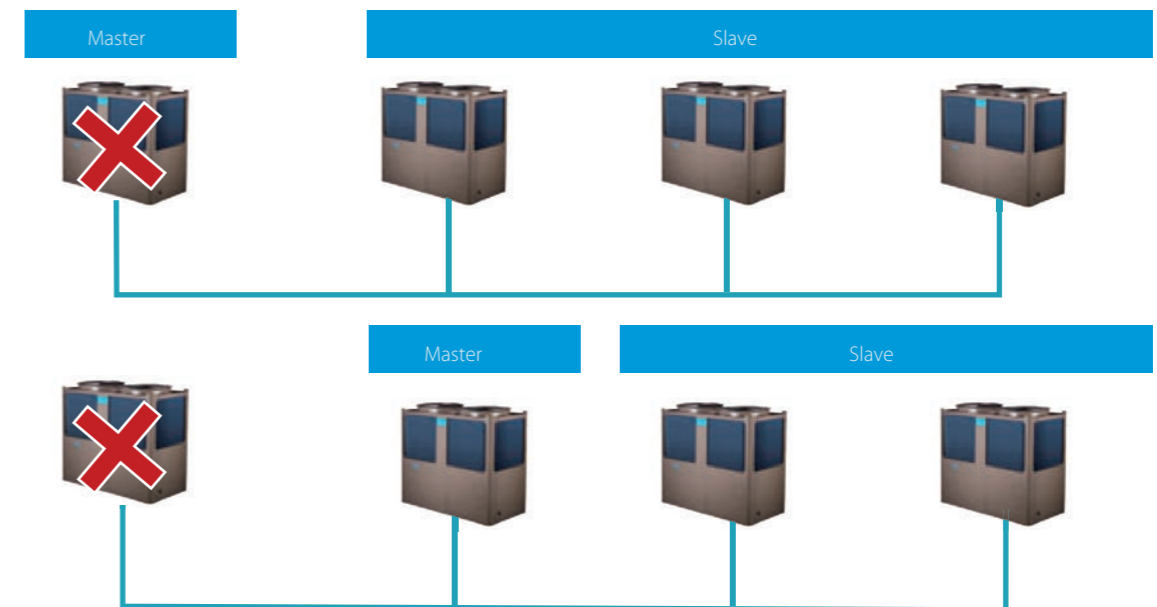
In one combination module, all slave units operate as alternative in cycle duty to keep equal running time, realize higher stability, better reliability and longer lifespan.

For example, 16 modules combination, no.1 is master unit, others are slave units.



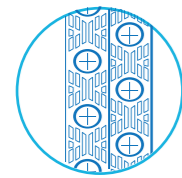
#### ● Back-up functions

In a combination system, if one module fails, other modules can be used as backup and continue the operation.



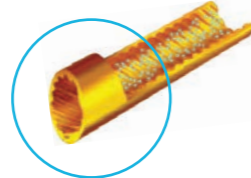
### ● High performance heat exchanger

Enlarge heat-exchanging area



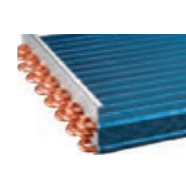
Fin

Enhance heat transfer



Inner-threaded pipe

High efficiency



Fin + inner-threaded pipes

Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency. The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

#### Heat exchanger aluminum foil

> Standard products:  
200h of neutral salt mist

> Heavy anti-corrosion products:  
1000h of neutral salt mist  
140h of acid salt mis

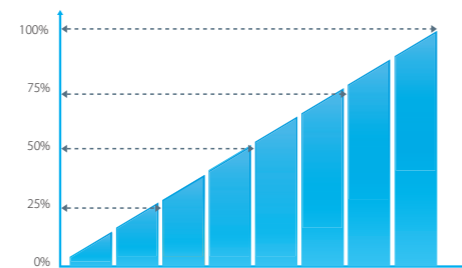
#### Heat exchanger copper pipe

> Standard products:  
24h of neutral salt mist

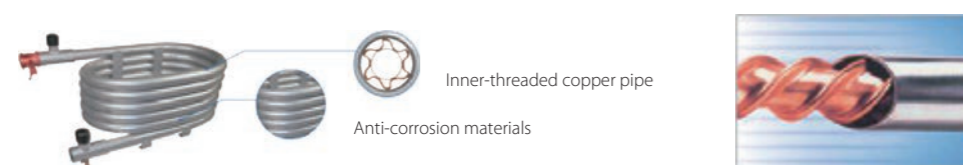
> Heavy anti-corrosion products:  
150h of neutral salt mist

### ● EXV for more precise flow control

Patented liquid distribution components to maximize performance and minimize defrost impact.  
500 steps EXV plus capillary for stable and accurate gas flow control.  
Fast response resulting in higher efficiency and improved reliability.



### ● Tube-in-tube & shell-tube heat exchanger

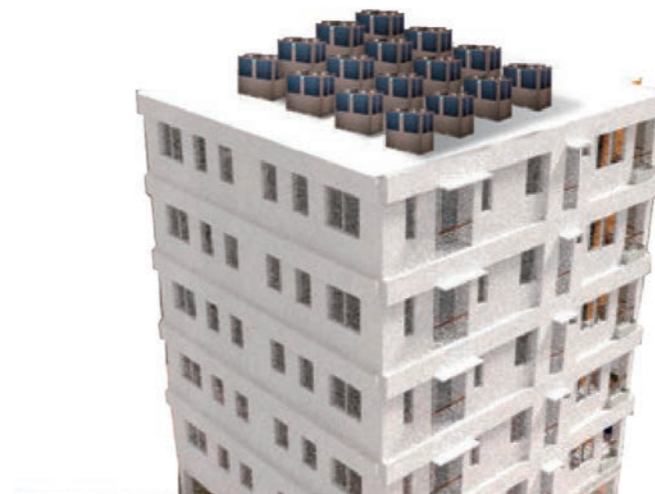
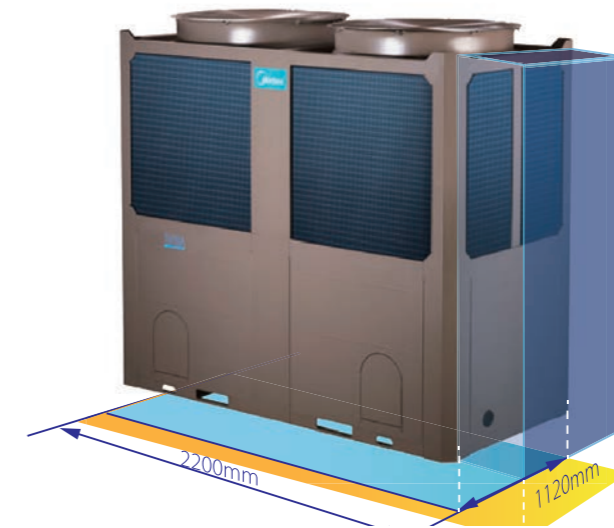


Inner grooved copper pipe, increased area of heat exchange, improved efficiency.

Anti-corrosion shell increases the life span of heat exchanger.



Compact design saves space and transportation cost.



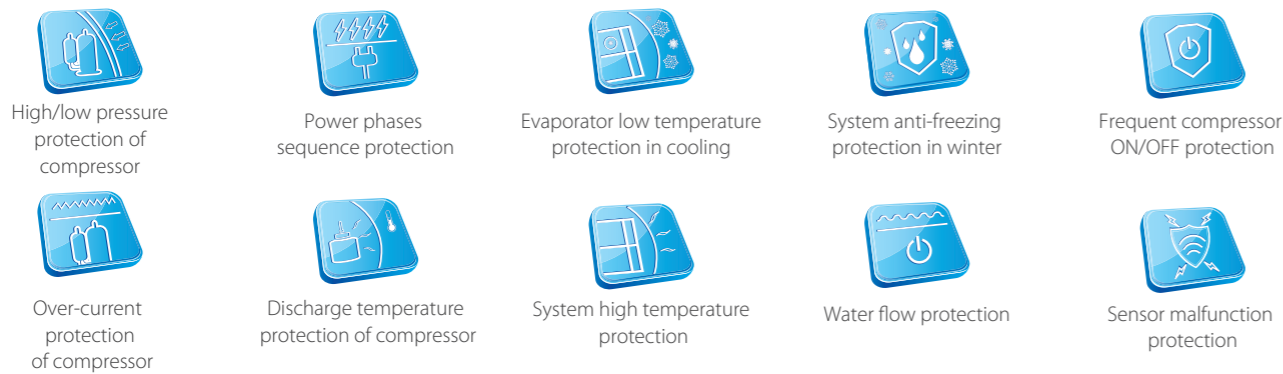
### Easy control

- Touch key wired controller as standard accessory to control the chillers.



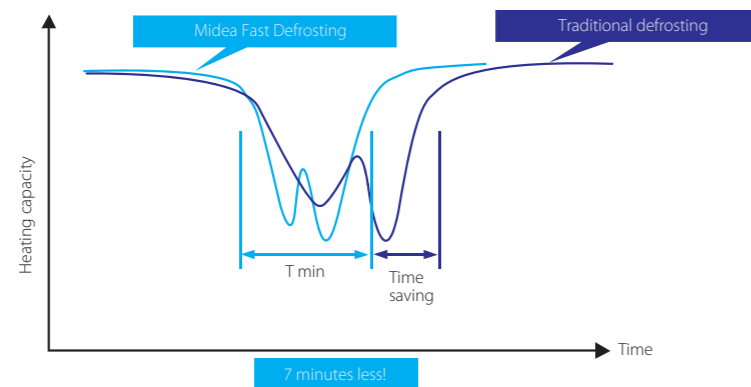
### ● Reliable protections

Multiple protections are adopted to ensure system stable running.



### ● Intelligent defrosting technology

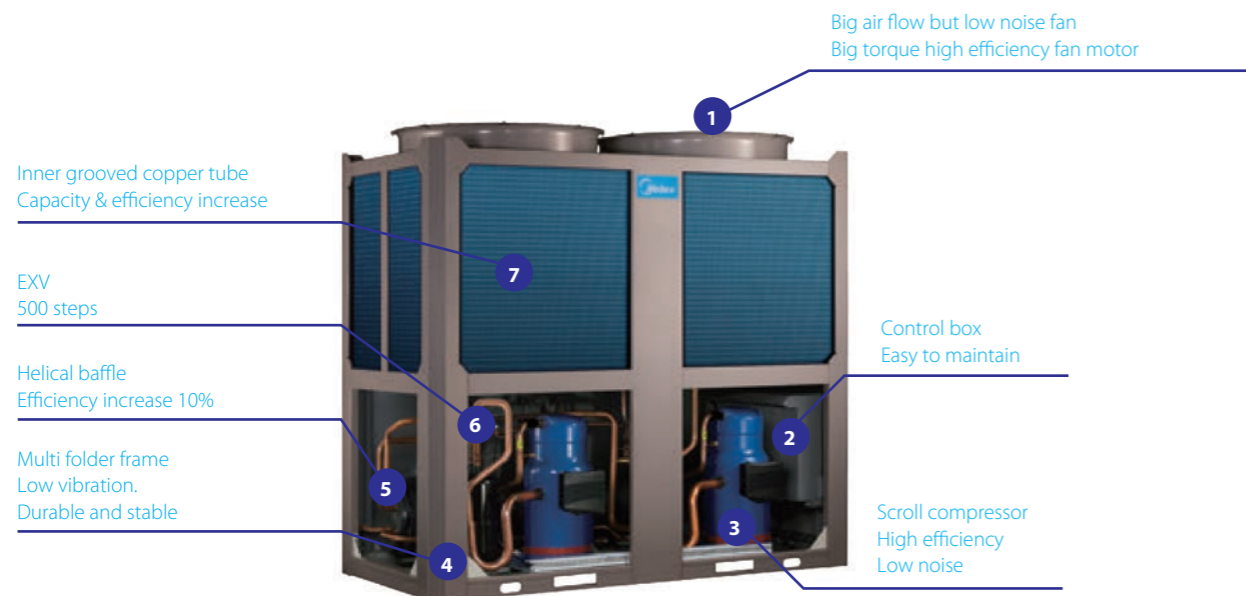
Model alternative defrosting technology ensures little fluctuation on water temperature. Manual defrosting program is available for service purpose.





### Flexible installation

#### ● Compact structure design

Super power chiller uses compact structure design, light weight, easy for transportation and installation.

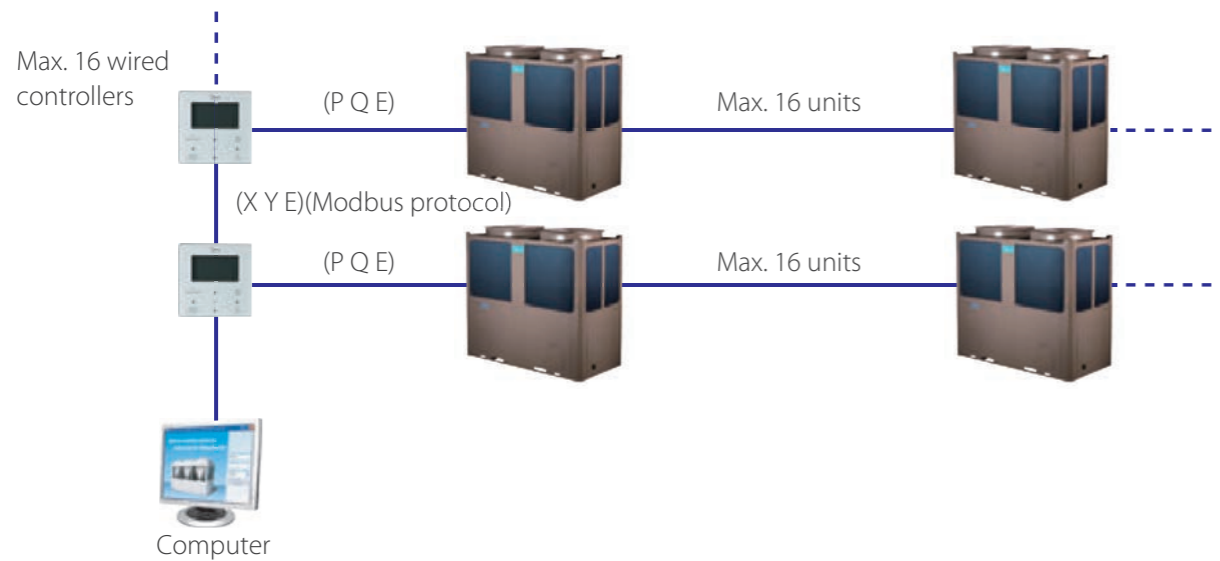




Model	KJRM-120D/BMK-E(standard)	KJR-120A/MBTE(optional)
Appearance		
Main Functions	Touch key operation Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Modbus(Customized) Address setting Parallel function	Mechanical butoon Parameter setting and LCD display Real time clock control. Multiple timer Power-off memory function Address setting Parallel function Weekly timing function
Max. connection PCBs	16	16

● Modbus function

Modbus is an open protocol that is widely used, especially in BMS building control systems. Modbus function can be customized by adding X, Y, E ports on wired controller KJRM-120D/BMK-E. It can connect Max. 16 wired controllers and each controller can control Max. 16 units.



● Convenient operation

Remote on/off function, remote heating/cooling function and alarm function can be easily realized by connecting switches or light/sound devices with PCB.



Note: When use the remote control function, KJRM-120D/BMK-E should not be connected to the unit and water setting temperature is default. If water temperature setting is needed, KJR-120A/MBTE wired controller can be used to connect to the unit.

Specifications

SS-LA series

Model		VRMC-SS35-RN1L-B	VRMC-SS65/RN1L	VRMC-SS80/RN1L	VRMC-SS130/RN1L	
Series		SS-LA	SS-LA	SS-LA	SS-LA	
Power supply	V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	
Cooling <sup>1</sup>	Capacity	kW	35	65	80	130
	Input	kW	11.5	20.4	25.8	42.3
	EER		3.04	3.19	3.10	3.07
Heating <sup>2</sup>	Capacity	kW	37	69	85	138
	Input	kW	11.3	21.5	26.5	43
	COP		3.27	3.21	3.21	3.21
Compressor	Type		Fixed Scroll	Fixed Scroll	Fixed Scroll	Fixed Scroll
	Quantity	Pieces	1	1	2	2
Air side heat exchanger	Type		Finned tube	Finned tube	Finned tube	Finned tube
	Fan motor type		AC Motor	AC Motor	AC Motor	AC Motor
	Quantity of fan motor	Pieces	1	2	2	2
Water side heat exchanger	Type		Tube-in-tube	Shell-tube	Shell-tube	Shell-tube
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charged volume	kg	6	10.5	13	21
Throttle type		EXV	EXV	EXV	EXV	
Sound pressurer level <sup>3</sup>	dB(A)	65	67	67	68	
Unit net dimension(DxHxW)	mm	1,020x1,770x980	2,000x1,770x960	2,000x1,770x960	2,200x2,060x1,120	
Packing dimension(DxHxW)	mm	1,070x1,900x1,030	2,090x1,890x1,030	2,090x1,890x1,030	2,250x2,200x1,180	
Net/Gross weight	kg	300/310	530/590	645/710	965/1,035	
Pipe connections	mm	DN40	DN65	DN65	DN65	
Ambient temperature range	Cooling	°C	-10~52	-10~46	-10~46	-10~46
	Heating	°C	-15~24	-15~24	-15~24	-15~24
LWT setting range	Cooling	°C	5~17	5~17	5~17	5~17
	Heating	°C	40~50	40~50	40~50	40~50
LWT setting range	Cooling	°C	0~17	0~17	0~17	0~17
	Heating	°C	25~50	25~50	25~50	25~50

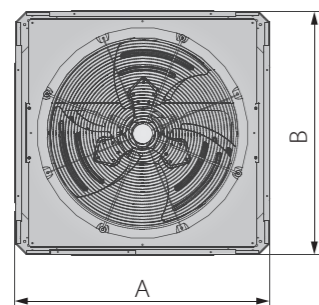
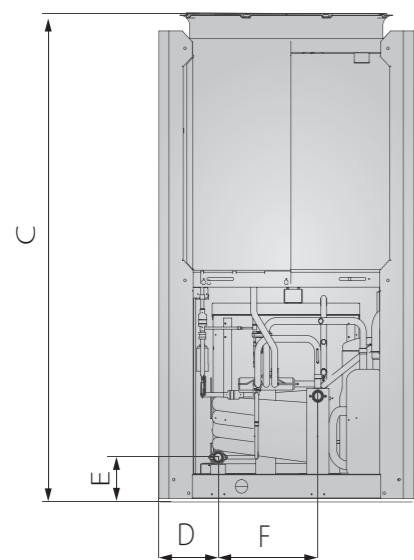
Notes:

1. Water inlet/outlet temperature: 12/7°C; Outdoor ambient temperature 35°C DB.
2. Water inlet/outlet temperature: 40/45°C; Outdoor ambient temperature 7°C DB/6°C WB.
3. 1m away in open field.
4. The data is for low water outlet temperature function

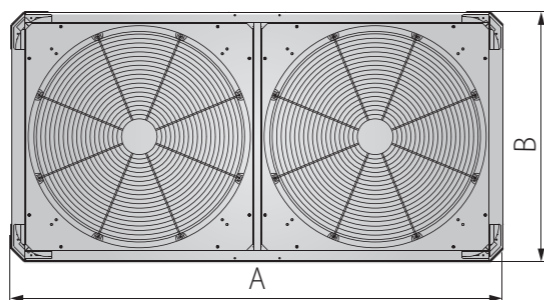
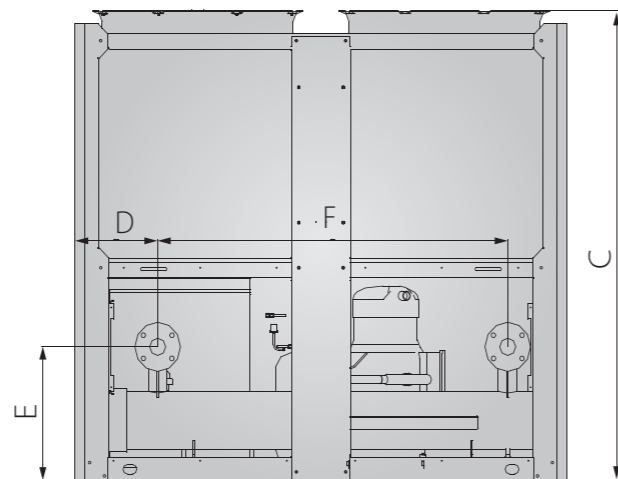


# Dimensions (Unit:mm)

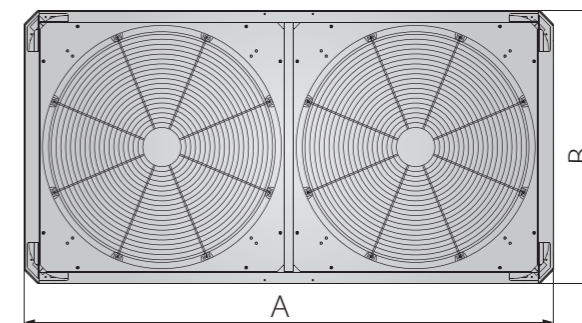
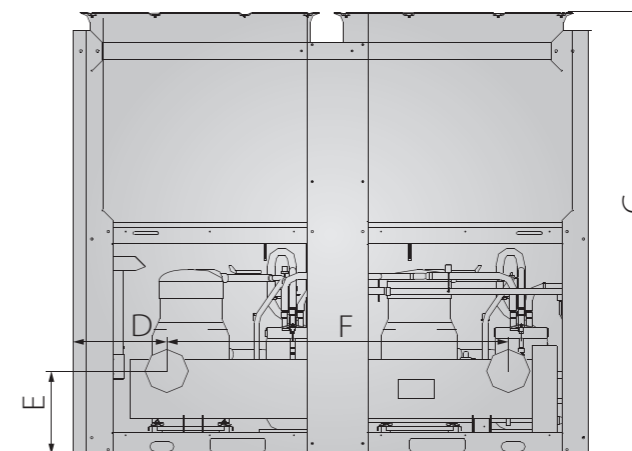
VRMC-SS35-RN1L-B



VRMC-SS65/RN1L  
VRMC-SS80/RN1L



VRMC-SS130/RN1L



Model	A	B	C	D	E	F
VRMC-SS35-RN1L-B	1020	980	1770	237	152	400
VRMC-SS65/RN1L VRMC-SS80/RN1L	2000	960	1770	336	506	1420
VRMC-SS130/RN1L	2200	1120	2060	390	347	1420