

**GIWEE COMPANY**



February 10, 2023

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Company Profile

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Product Range



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COMPANY  
PROFILE

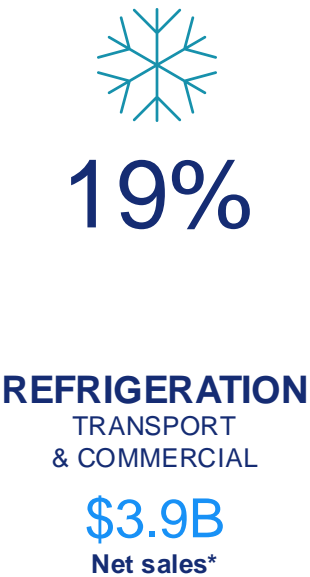
**Giwee is A Carrier Company**



# 2022 CARRIER NET SALES BREAKDOWN

Carrier is the leading global provider of healthy, safe, sustainable and intelligent building and cold chain solutions, with a diverse and world-class workforce.

We create SOLUTIONS THAT MATTER for people and our planet.



\* Segment sales include intercompany sales.



# GIWEE COMPANY

Giwee company is a global supplier with integrated advantages in R&D, production and sales in the HVAC field, brand name is GCHV, GIWEE is a Carrier company.

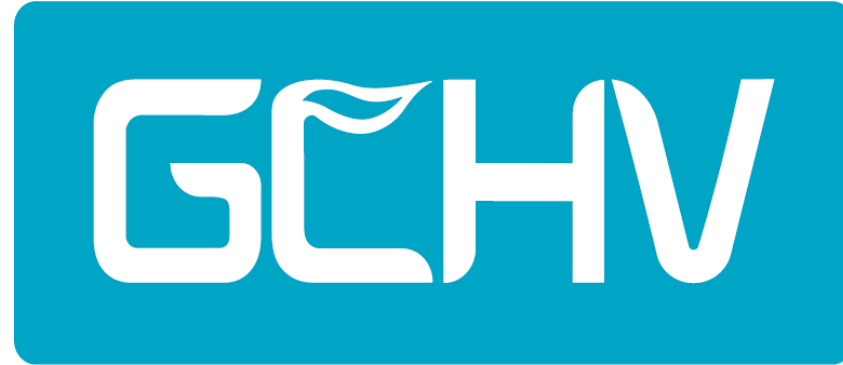
Giwee has been deeply involved in the air-conditioning field for more than 11 years with a rich product lineup and excellent market competitiveness since 2011.

Giwee is the third factory and second global R&D center of Carrier in China, which not only facilitates Carrier's development of Light commercial AC technology, but also makes Giwee a global VRF and light commercial AC manufacturing and R&D base.

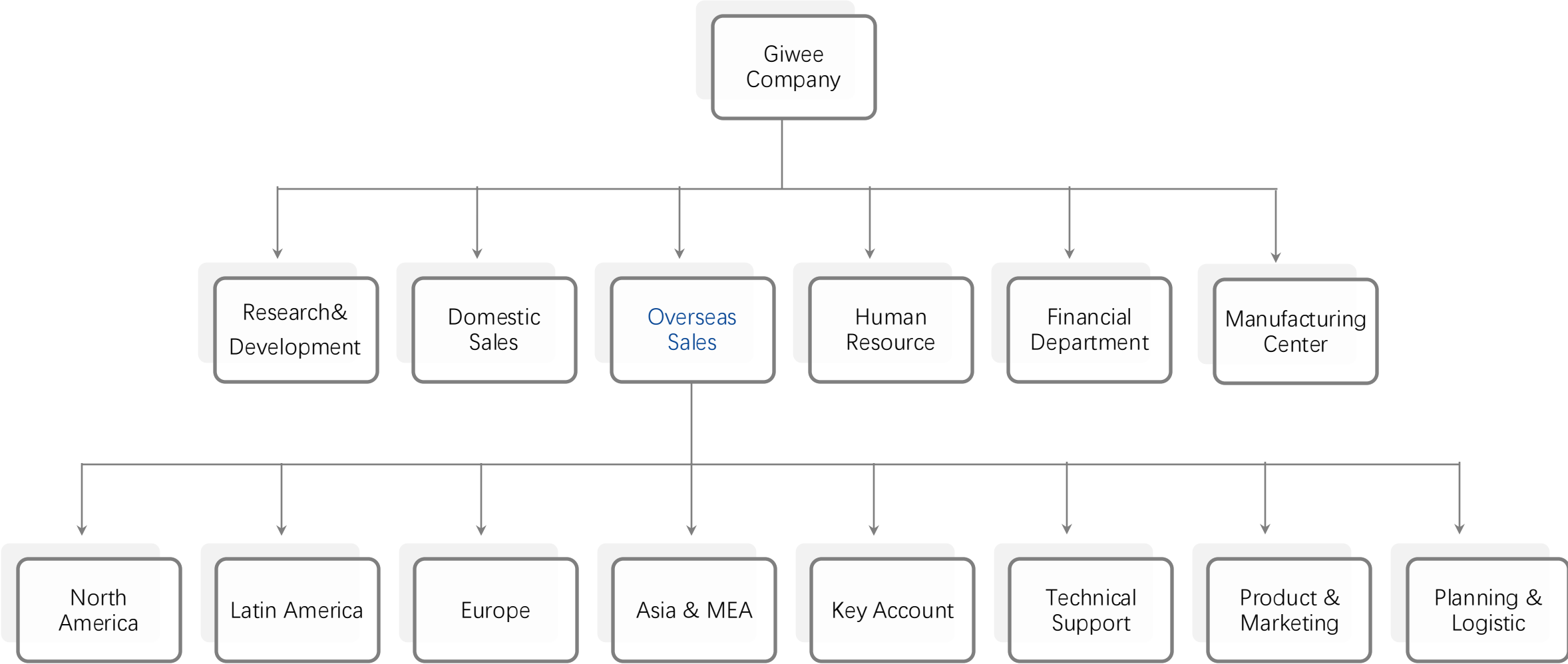
Subsidiaries of Giwee company are as follows:

- Guangdong Carrier Heating, Ventilation & Air Conditioning Company Limited
- Guangdong Giwee Technology Co., Ltd
- Guangdong Giwee Electronic Commerce Co., Ltd





# ORGANIZATION CHART





# COMPANY GALLERY



VRF Plant With Solar Panel



Office Building Lobby



Carrier Logo Design



Road Separation For Safety



CNAS Certificated Laboratory



EHS Showroom



# COMPANY GALLERY



Modern Production Line



Manipulator



Real-time Production Tracking



Modern Production Equipment

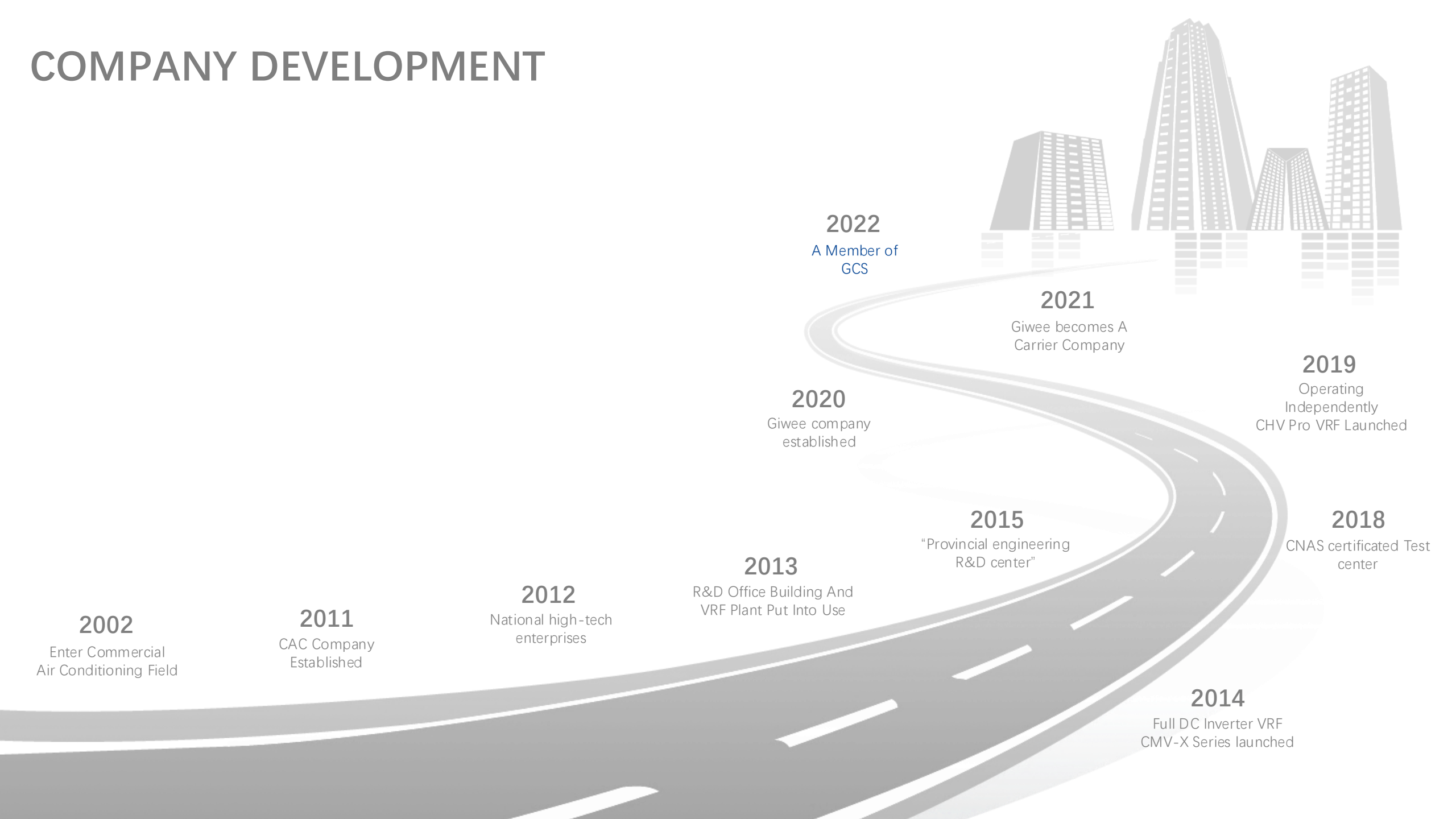


Semi-anechoic Laboratory



Transport Simulation

# COMPANY DEVELOPMENT





# MANAGEMENT SYSTEM CERTIFICATE

Management system certification is a conscious requirement for an enterprise to improve its own competitiveness, and it is also a manifestation of the enterprise's compliance with laws, trustworthiness, honesty and responsibility.

Management system certification ensures stable product quality, resource conservation, eco friendliness, safety and respect for intellectual property rights in the production and operation process, and fulfills the commitment to being responsible to customers, society and employees.



**ISO 9001**  
Quality Management  
System Certificate



**ISO 14001**  
Environmental Management  
System Certificate



**ISO 45001**  
Occupational Health and  
Safety Management System



**QC 080000**  
Hazardous Substance  
Process Management



**GB/T 29490**  
Intellectual Property  
Management System

# HUMAN RESOURCE



**1300+**  
Employees



**15%** of all employees  
R&D Department



**13%** of all employees  
QC Department



**95%** of IDL employees  
Bachelor's degree or  
above

# R&D STRENGTH



*Simulated Transport Test Equipment For 2 Tons*

## Investment

Giwee company continually invest in R&D for new further development.



*In Communication With Japanese HVAC Expert*

## Advanced Technologies

Giwee company actively cooperates with more than 20 scientific research institutes, famous universities in china and Japanese HVAC experts for new technologies.



*In EMC Testing*

## R&D Team

The R&D team consists of more than 200 professional engineers .

# TESTING CENTER

The testing center includes a spare parts testing laboratory and an AC testing laboratory, with a total area of about 15,000 square meters and total assets of 200 million yuan. It has complete equipment suitable for the testing tasks of air conditioners and heat pump products, covering 19 standards and 192 test items in AC industry.

## Spare parts testing laboratory

Mainly used for raw material composition analysis, mechanical property testing, electrical properties, safety and life of electrical devices, etc.

**2000**

Square meters

**30 million**

Total assets

**17**

Sub-laboratories

**300 Sets**

Testing equipment



*Equipment In Spare Parts Testing Laboratory*



# TESTING CENTER

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## AC testing laboratory

It has 42 sets of laboratories, and has obtained the national CNAS certification, covering more than 200 test items in three major fields of performance, safety and electromagnetic compatibility of air conditioning products.



Giwee has established long-term project cooperation with professional certification and testing institutions (BV, Intertek, ETL, TUV, etc.)



*Defrosting Test*

# TECHNOLOGY ADVANTAGE

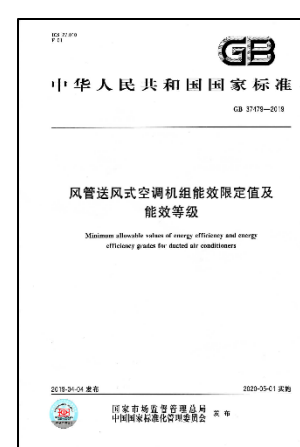
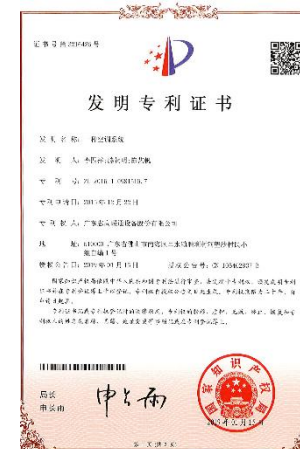
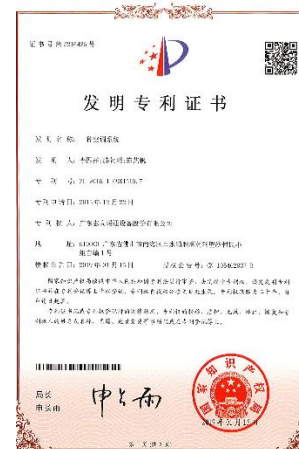
**767** Advanced Technologies

**141**  
For invention

**142**  
For industrial design

**479**  
For Utility Model

**5**  
Times in the formulation of national standards



\*Data for February 2023 and includes Guangdong Carrier Heating, Ventilation & Air Conditioning Company Limited and Guangdong Giwee Technology Co., Ltd



# MANUFACTURING CENTER

The manufacturing center covers an area of more than 73,000 square meters, with three major workshops for LCAC, VRF and spare parts, and 17 advanced production lines. The annual production capacity can reach 1.7 million units, and the annual output value about 2 billion RMB.

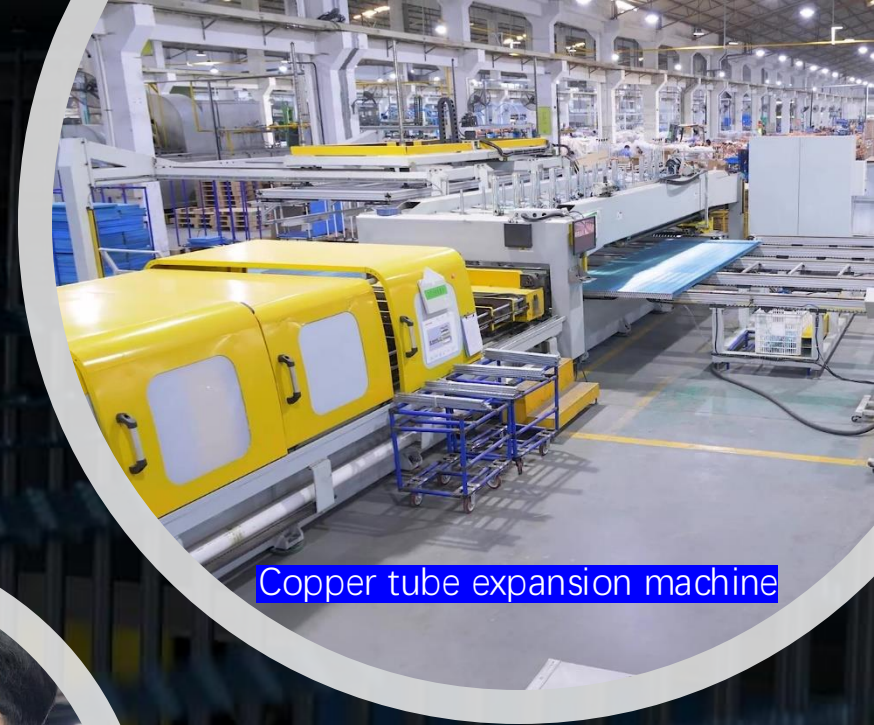
According to the concept of lean production and safe production, through 5S, TPM, IE, EHS and other continuous improvement activities to ensure safe and efficient production and shorten the delivery cycle..

Use various robots, AGV system and other equipment, optimize logistics distribution, improve quality and production efficiency.

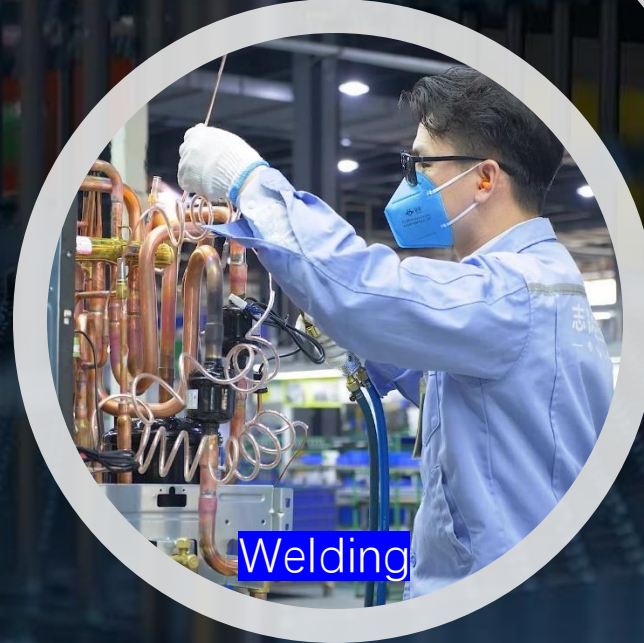
MES system helps a lot in tracking production schedule, inventory status, work schedule and other operations management to improve product quality and productivity.



Auto Welding



Copper tube expansion machine



Welding



Auto Packing & Stacking Robot

# PRODUCT CERTIFICATION

Product certification helps consumers to identify the quality, performance and safety of the product. Our products are certificated according to detail market requirement, certifications like CE, CB, ETL, UL, AHRI, Eurovent, SASO,ESMA, etc. are available.

						
CE	CB	ETL	UL	DOE	SASO	ESMA
						
G-Mark	MEW	Energy Star	AHRI	Eurovent		

\*Our product are certificated according to detailed requirements about efficiency and safety regulations.



# QUALITY CONTROL

- Testing center has been certified by CNAS in 2018;
- Adhere to the principle of "zero tolerance for quality problems" and form a complete quality control management system;
- Relying on advanced testing equipment to achieve comprehensive quality management from raw materials to finished products, failure rate continued to decline;
- Focus on safety, noise and other key quality improvement projects to improve customer satisfaction;



*Electronic Parts Inspection*

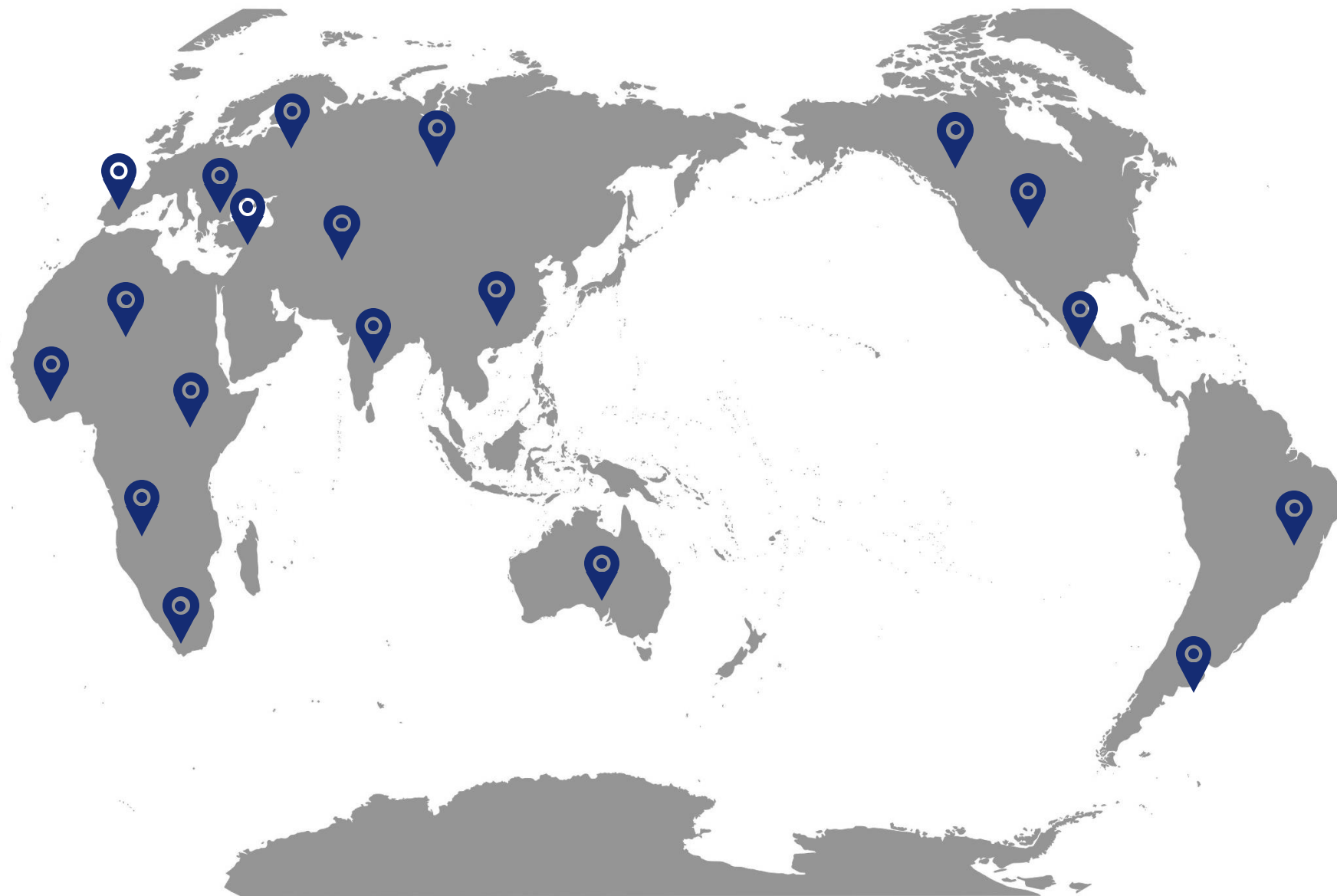


*Leakage Test*



*Salt Spray Test*

# SALES NETWORK



**100**

Products widely export to 100 countries

**31**

31 agencies in main cities of china

**1000**

1000+ exclusive stores in China



— 02 —

PRODUCT  
RANGE





# PRODUCT CATEGORIES



**Modular Chiller**



**Heat Pump**



**LCAC**



**VRF Series**



**Control System**



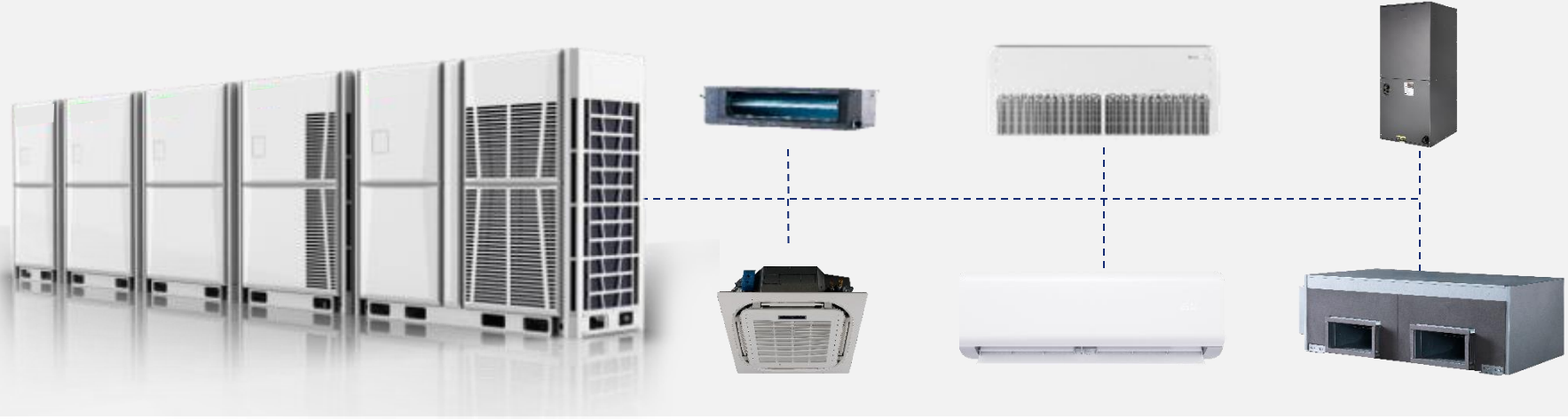
**IDU&Others**

# VRF SERIES



## CHV-Pro (8-32HP)

- Max combination cap.:96HP
- Max 100 IDUs in a system
- Cooling range:-5-55°C
- Heating range:-30-30 °C
- Wireless communication(Optional)



## GCHV Mini(12.5-33.5kW)

- Full DC inverter
- Total pipe length:100m(12.5-22.4kW), 120m(26-33.5kW)
- Cooling range:-5-55°C
- Heating range:-20-30 °C
- Auto addressing



## CHV Mini(8-16kW)

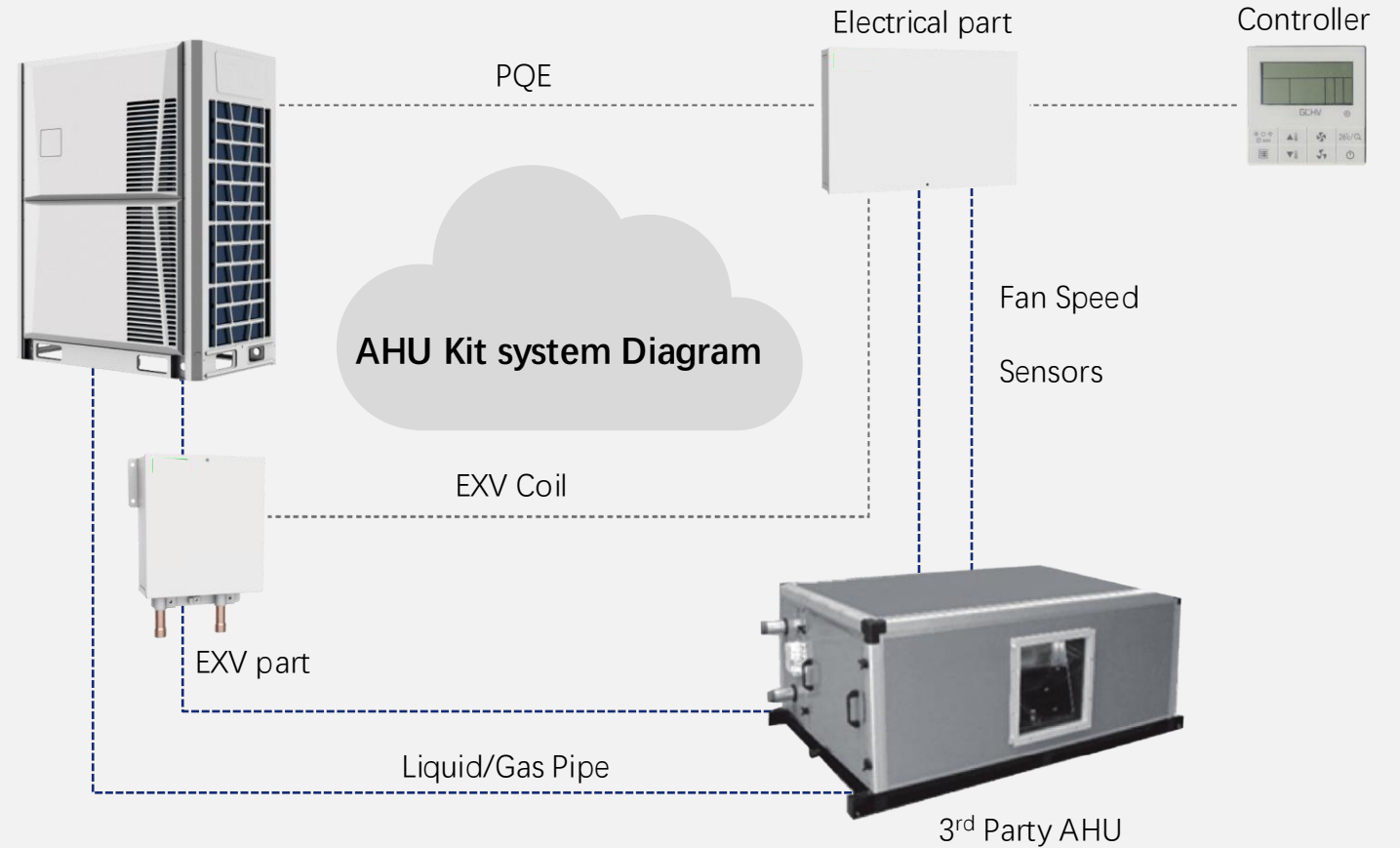
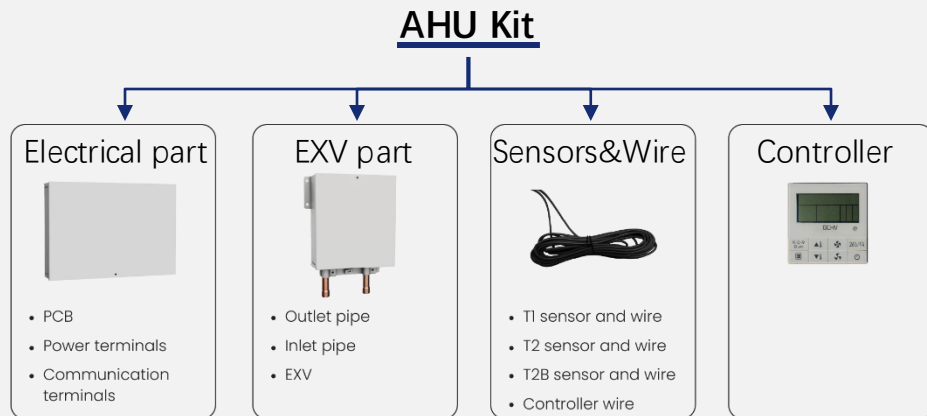
- Full DC inverter
- Compact body
- Cooling range:-5-55°C
- Heating range:-15-30 °C
- Refrigerant cooling technology
- Min noise level:54dB(A)



# VRF SERIES

## AHU Kit

- GCHV AHU kit is an interface that allows 3rd party manufacturer's
- AHU connecting to GCHV VRF outdoor units.
- No address limit and automatic addressing.
- Split type, convenient for installation.
- One electrical part has one address and can max. connect 4 EXV parts.
- One AHU kit can max. connect up to 120HP.



# VRF SERIES

## Selection Software

Selection software provides a comprehensive selection of system design reports and calculations. Base on the units selected, the software produces detailed system layout and piping requirement calculations, greatly improves the work efficiency.

The image displays four overlapping screenshots of the VRF selection software interface, illustrating its capabilities in project management, system design, and reporting.

**Top Left Screenshot: Project Information Form**

**Project info**

- Project name: [Empty]
- Project address: [Empty]
- Country: Iraq
- City: Baghdad
- Altitude(m): [Empty]
- Client name: [Empty]
- Client Address: [Empty]
- Date: 03/03/2022
- Reference: [Empty]
- Revision: [Empty]

**Design cooling condition**

Indoor dry bulb(°C)	32.0
Indoor wet bulb(°C)	23.5
Outdoor dry bulb(°C)	46.0

**Design heating condition**

Indoor dry bulb(°C)	18.0
Indoor wet bulb(°C)	7.0

**Top Middle Screenshot: Piping Diagram**

**Piping**

This screenshot shows a detailed piping diagram for a VRF system. It includes various components such as outdoor units (ODU), indoor units (IDU), and connecting pipes. The diagram is labeled with technical specifications and unit identifiers.

**Bottom Middle Screenshot: Controller Selection Table**

**Controller Selection**

Group Control No.	System Name	CU No.	CU Type	CU Model	CU	MC Qty	CCM	Model	Qty
GC-1	System1	EXU1	CUW	GOU					
GC-2	System1	EXU2	CUW	GOU					
GC-3	System1	EXU3	CUW	GOU					
GC-4	System1	EXU4	CUW	GOU					

**Bottom Right Screenshot: VRF Selection Result Summary Report**

**VRF Selection Result**

**1. Project information**

Project name	China
Project address	Guangzhou
Client	China
Design date	2021-10-26

**2. Design parameters**

Indoor temperature	27.0
Indoor humidity	55%
Outdoor temperature	46.0
Outdoor humidity	23.5

**3. Design temperature**

Outdoor dry bulb	Summer dry bulb(°C)	32.0
Indoor dry bulb	Summer indoor dry bulb(°C)	27.0
Indoor wet bulb	Summer indoor wet bulb(°C)	23.5
Indoor dry bulb	Winter indoor dry bulb(°C)	18.0
Indoor wet bulb	Winter indoor wet bulb(°C)	7.0

**Summary Report**

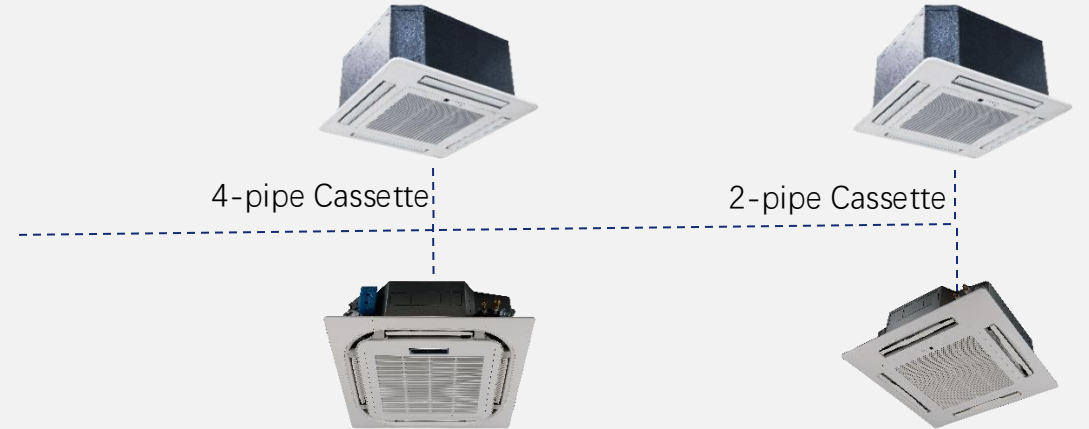


# MODULAR CHILLER



## Heat Recovery (30/65kW)

- Max combination cap.:1040kW
- Cooling range:-10-46°C
- Heating range:-15-35 °C
- Intelligent defrosting program
- Max. water outlet temperature: 58°C



## New Case(30/65/130kW)

- Max combination cap.:2080kW
- Cooling range:5-46°C
- Heating range:-15-30 °C
- Intelligent defrosting program
- Built-in water flow switch
- Unit backup function
- Cycle operation



## EVI Type(35/75/155kW)

- Max combination cap.:2480kW
- Cooling range:-5-46°C
- Heating range:-30-45 °C
- Intelligent defrosting program
- Built-in water flow switch
- Unit backup function
- Max. water outlet temperature: 60°C



# HEAT PUMP



CEN heat pump  
KEYMARK



## A+++ Split Type (5-16kW)

- Multi functions: cooling, heating, hot water, floor heating, radiator
- Cooling range:-5-46°C
- Heating range:-28-43 °C
- Max. water outlet temperature: 60°C



## A+++ Monobloc (4-16kW)

- Multi functions: cooling, heating, hot water, floor heating, radiator
- PCB refrigerant cooling technology
- high efficiency with A+++ performance @W30/35°C
- Cooling range:-5-50°C, Heating range:-25-43 °C
- Max. water outlet temperature: 62°C, and 55°C at -21°C ambient temperature





## 50Hz ON OFF LCAC

- 50Hz On Off Universal Series
- Compressor Condensing Units(CCU)

## 50Hz Inverter LCAC

- 50Hz Inverter ErP R32 Multi Split Series
- 50Hz Inverter ErP R32 Mono LCAC Series
- 50Hz Inverter R32 Mono LCAC Series
- 50Hz Inverter R410a Mono LCAC Series

## 60/50Hz T3 Condition

- 60/50Hz Inverter Universal Series
- 60/50Hz On OFF High Efficiency Series(Kuwait)
- 60/50Hz On OFF High Efficiency Series
- 60/50Hz On OFF Regular Efficiency Series

## 60Hz LCAC For LATAM

- 60Hz On Off Universal Top Discharge Series
- 60Hz On Off SEER 13 Series
- 60Hz Inverter SEER 16 Top Discharge Series
- 60Hz Inverter SEER 16 Side Discharge Series
- 60Hz Inverter Normal Series

## 60Hz LCAC For N.A

- 60Hz 14.3/16 SEER2 Top Discharge Series
- 60Hz 13.4 SEER2 A Coil Condensing Series
- 60Hz 16 SEER2 Side Discharge Series



# IDU&OTHERS

## IDU



Low ESP  
Duct Unit



Medium ESP  
Duct Unit



High ESP  
Duct Unit



Fresh Air  
Processor



1-Way  
Cassette



2-Way  
Cassette



4-Way Cassette  
(Compact)



Round Flow  
Cassette



Wall Mounted  
Unit



Console



Air Handler



Front Return Air  
Handler



Floor & Ceiling Unit



Heat Recovery  
ventilator



7HP Floor  
Standing Unit



10HP Floor  
Standing Unit

## Others



PTAC



TTW



VTAC



RV



Rooftop Package Unit

# CONTROL SYSTEM

## Wireless/Wired Controller



NT-03A



NT-05D



NT-06A



NT-10A



ZKX-C/T/A-06



CSP-D178



CSP-D179



CSP-D180

## Centralized Controller



Simple Centralized  
Controller



Smart  
Box



Touch Screen  
Centralized Controller



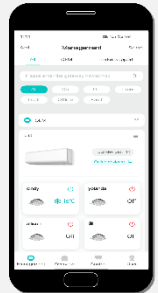
CHV-Net Centralized  
Controller



BACnet  
Gateway



Modbus  
Gateway



Smart Manager  
APP



**THANK YOU!**