

Global quality standard, Worldwide partnership



# DC Inverter Commercial Swimming Pool Heat Pump



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## Guangdong Tongyi Heat Pump Science and Technoloy Corp.

Head office: 20/F, South Tower, No.159 Middle Qiaozhong Road, Liwan District, Guangzhou

Factory office: No.2, Chuangye South Road, Songxia Indus-park, Nanhai, Foshan

WhatsApp +86 18933981873

Website: [www.tongyiheatpump.com](http://www.tongyiheatpump.com)

E-mail: [info@tongyiheatpump.com](mailto:info@tongyiheatpump.com)

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# WE KNOW MORE ABOUT OUR CUSTOMERS' NEEDS

# 26

LEADING THE INDUSTRY FOR  
MORE THAN 26 YEARS

# 100<sup>+</sup>

MORE THAN 100 LEADING  
TECHNOLOGIES

# 1000000<sup>+</sup>

USERS EXCEED ONE MILLION

ROOTED IN THE INDUSTRY FOR MORE THAN 26 YEARS,  
SERVING MORE THAN 1 MILLION FAMILIES.

FOR MORE THAN 26 YEARS, WE SPECIALIZE IN DEVELOPING  
HEAT PUMP TECHNOLOGY TO PROVIDE OPTIMAL  
SOLUTIONS TO FULFIL OUR USER'S NEEDS.

Guangdong Tongyi Heat Pump Science and Technology Corp.

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## Tongyi's new Guangzhou Headquarters Since 2021



## About TONGYI

Established in 1999, Guangdong Tongyi Heat Pump Science and Technology Corp. is a pioneer and highly reputable heat pump manufacturer in China. Committed to unwavering quality standards and product safety, Tongyi is a leader in energy-efficient solutions.

With over two decades of dedicated growth, Tongyi has earned a distinguished reputation for first-class quality and reliability. We implement rigorous control measures throughout our manufacturing processes, ensuring the highest product standards.

Tongyi's international vocation spans over two decades, reaching customers across Asia, Southeast Asia, America, and Europe. We initiated our journey into the European market in 2003, and since then, we've been expanding our business globally for more than twenty years. With our innovative heating and cooling solutions, we are happy to serve thousands of customers across the globe.

Our products proudly hold renowned global certifications, including CE, EMC, RoHS, LVD, EMD, RED, ERP, IEC, ETL, SASO, CCC, and more, while our production management holds ISO9001, ISO14001, and ISO45001 approvals.

Our driving force is environmental protection. At Tongyi, we are deeply committed to reducing the household carbon footprint and mitigating the impact of climate change. We recognize that sustainability is not just a goal but a responsibility, and it's at the core of everything we do.

We value your feedback, which fuels our continuous pursuit of excellence in eco-friendly solutions. We prioritize customer-centric improvements through rigorous monitoring and responsive after-sales service. At Tongyi, we're committed to streamlining processes to elevate customer heating and cooling experiences, reduce energy consumption, and minimize our collective carbon footprint. Together, we can build a greener, more sustainable future.

# Milestones

**1999**

Established and launched first products.



**2004**

Ideated the name "Air Source Heat Pump Water Heater" in Chinese as "Kong Qi Neng" water heater in China recognised by the industry.

**2008**

Recognized as a high-tech enterprise by the Government Drafting Committee.



**2012**

Qualified for the rebate program of Energy-saving Products launched by the government.

**2016**

Participated in Beijing coal-to-electricity project, replacing coal boilers with TONGYI heat pump for house heating.



**2018**

Launched new DC EVI heat pump for domestic house heating and cooling in MCE Milan.



**2021**

Moved to new headquarters in Guangzhou.



**2023**

Innovating in Tongyi Energy Management System (TEMS).



**2025**

Tongyi Smart Factory is completed - Rebuilding Glory



**2003**

Products with CE/CB certified and exported to Europe.



**2007**

Joined in the National Standard of Heat Pump Water Heater Drafting Committee.



**2009**

Inverter Heat Pump for Radiant heating and cooling supplied in Japan market.



**2014**

Awarded Excellent Quality Brand Enterprise.

**2017**

Established Tongyi Air Source Heat Pump Research Institute.



**2019**

Served Daxing International Airport hot water supply project (Asian's top airport).



**2022**

Entered into BAFA and ISDE subsidy lists of heat pump.



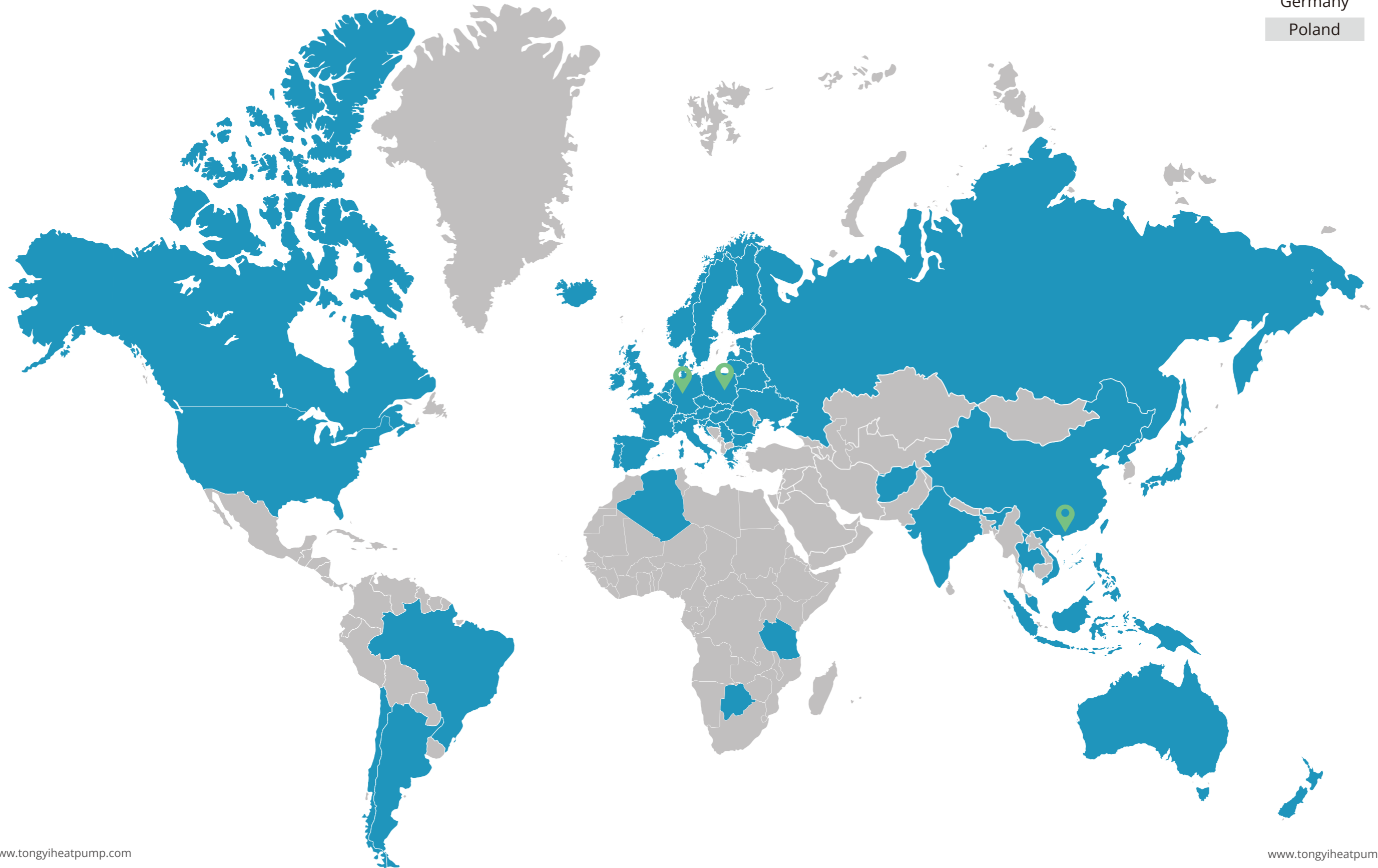
**2024**

Tongyi 25th Anniversary - Brand Take-off

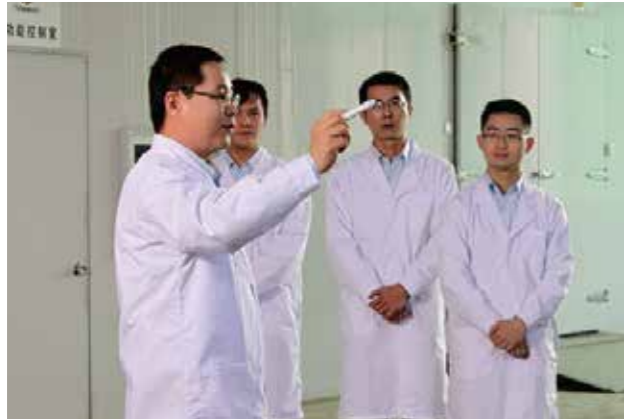
# Market Overview

 Regional Spare Parts Center

- Country
- China
- Germany
- Poland



## Professional R&D Team



### Master of Core Technology

TONGYI is one of the first and most professional heat pump manufacturers in China. We are in cooperation with 3 top universities in China on various HVAC research topics.

## Quality Control

### Parts & Components Inspection

We monitor our entire supply chain for all the main parts and accessories strictly. 100% of the parts and components undergo rigorous incoming inspection at our factory.



### Professional Design Procedure

From the beginning of product development, a wide range of details are taken into account: easy installation, user friendliness, cutting-edge design, high functionality, full-scale tests, and the use of more than 56 different technologies. Always aiming to provide our customers with highest standard products.

### Process Control

In our production line we strictly control all processes. From the first step until the units are packed and ready to ship. Through relentless monitoring, we record all processes and developments to ensure the products are reliable and in conformity with product-specifications.



### Professional R&D Team

Cooperating with several top universities in China, Tongyi attracts young talents every year and has established a government-recognized R&D Center with a team of highly-qualified engineers.

### Finished-Product Inspection

We implement 100% inspection on the finished products before shipping. We implement an additional double sample inspection for all units shipped to the overseas market.



## Qualification & Certificates



TÜV CERTIFICATE of Conformity Low Voltage Directive



TÜV CERTIFICATE of Conformity Electromagnetic Compatibility



TÜV CERTIFICATE of Conformity Radio Equipment



TÜV CERTIFICATE Restriction of Hazardous Substances Test Report



SG Ready Label for SMARTGRID-COMPATIBLE Heat Pumps



ISO45001:2018 Occupational Health and Safety Management



ISO14000:2004 Environmental Management System Certification Certificate



ISO9001:2015 Certificate of Quality Management System

The above list of certificates applies to specific models only.

## IoT Technology

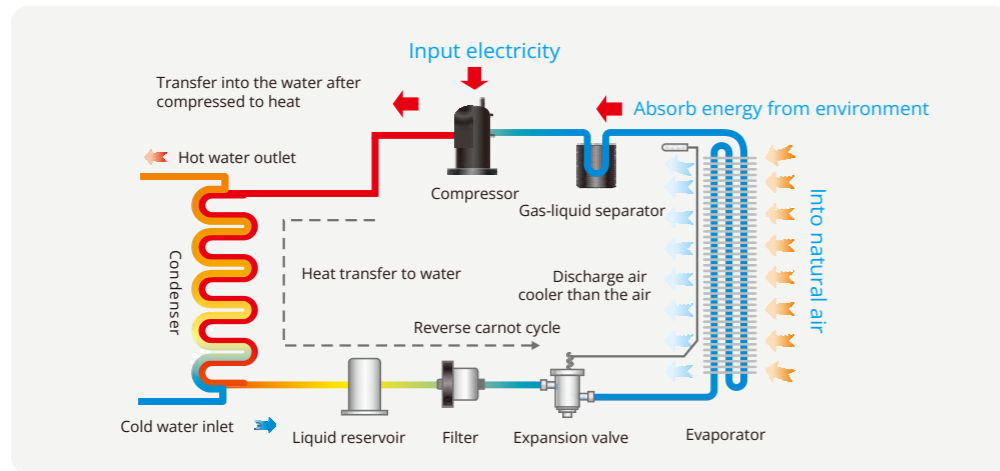
With IoT Technology the heat pump status remotely can be monitored. When a failure occurs, it is possible to check and control remotely the unit's information, providing with immediate support to our customers.

With OTA (update over air) Technology, if there is any error happening on the software, we can provide a remote service by updating the software online. When the software has a new version that upgrades its functions, as long as you grant us with access, we can update the software remotely.



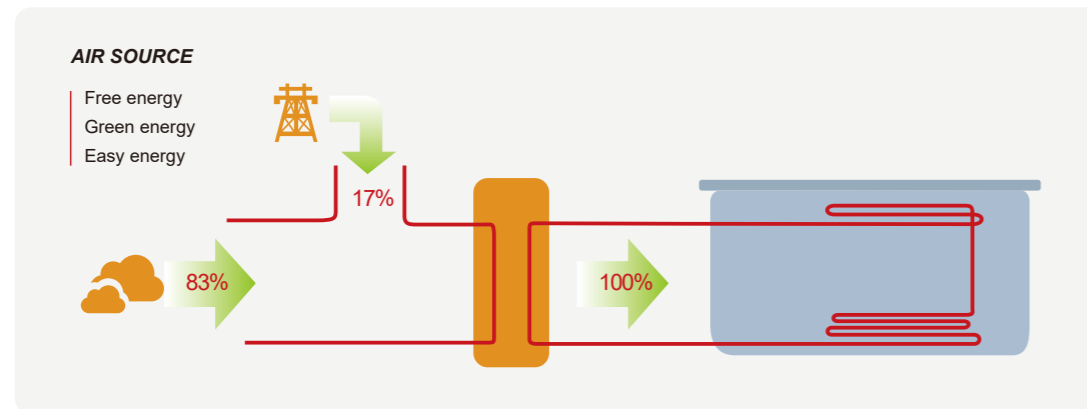
Above UI is for Reference

## Working Principle



## Energy Efficient Application

**TONGYI HEAT PUMP** offers the best solution for home heating and hot water supply with Tongyi's inverter technology. It is 6 times more energy-efficient than a boiler system by absorbing energy from the outdoor environment.



## Various Applications



STADIUM



PUBLIC POOL



CLUBS



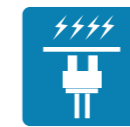
## Product Features

### Multiple protection

The unit has its own high and low voltage switch, antifreeze protection device, overload protection device, power phase sequence protection device, etc., and is equipped with an operation control device, which automatically alarms in real time when an abnormality occurs to escort the system and ensure safe operation.



Compressor high and low pressure protection



Power reverse (missing) phase protection



overflow flow Save protect



Winter water system frost protection



Frequent activation of protection



Compressor over current protection



Compressor discharge temperature protection



Water shortage protection



water flow protection

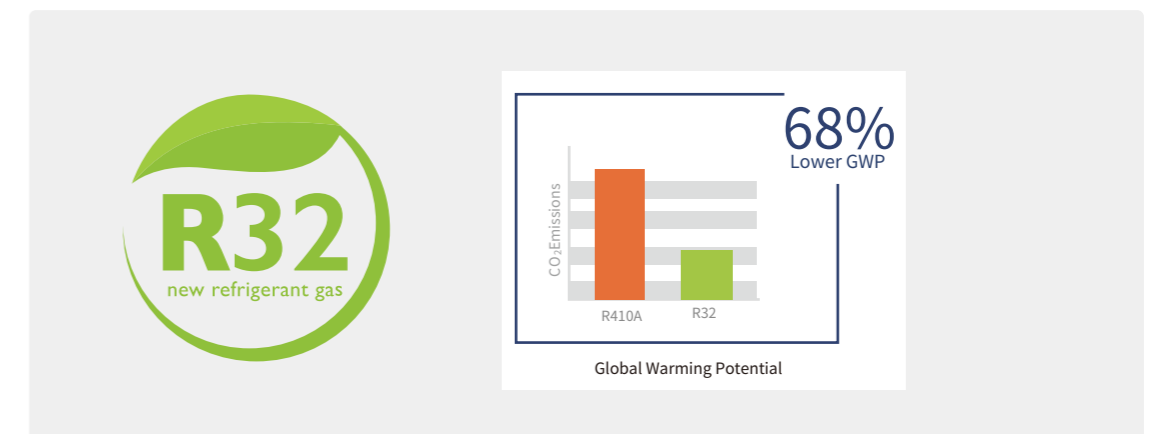


Sensor failure protection

## R32 Refrigerant

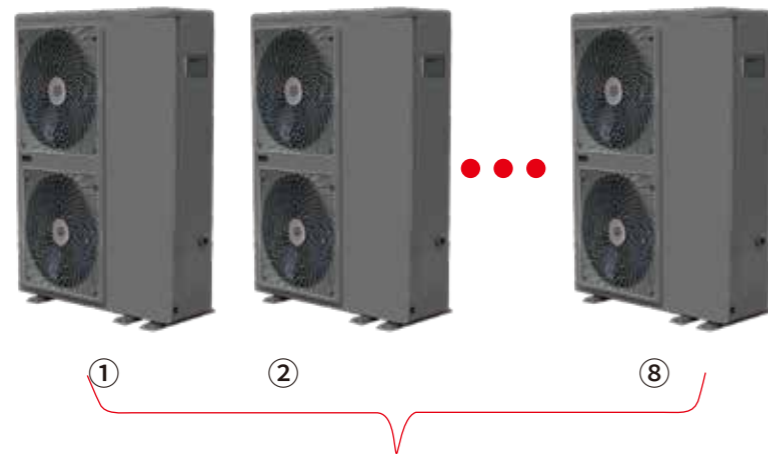
**Use environment friendly refrigerant, good cooling and heating performance**

The unit adopts R32 environment friendly refrigerant, which is non-toxic and stable, with small pressure loss and good cooling and heating performance.



## Module parallel technology

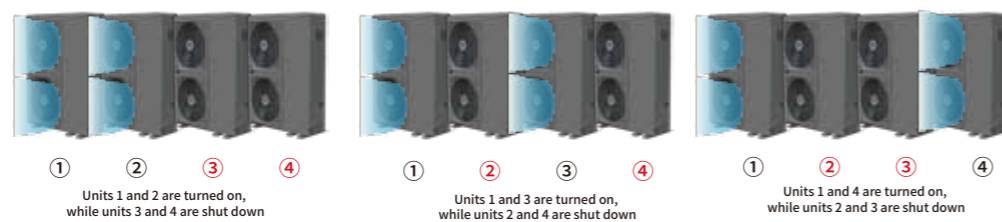
Supports up to 8 water heater modules of the same model in parallel, controlled by one wire controller



**Up to 8 sets of unit modules can be connected in parallel**

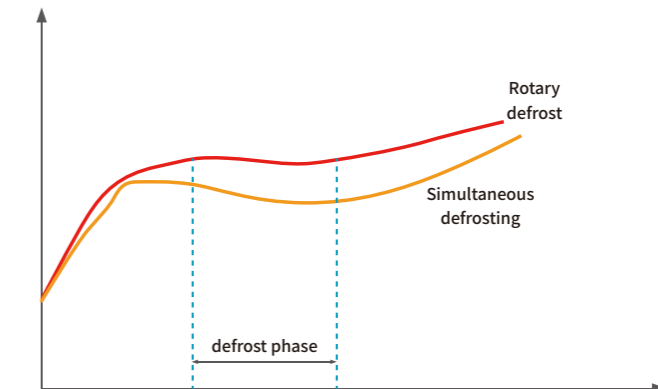
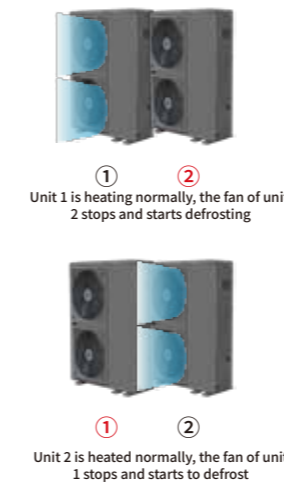
## Rotation operation technology

Rotational operation - In the parallel system under the same controller, intelligently balance the running time between the units and the compressors, run in turn, avoid excessive operation, and greatly extend the service life of the unit;



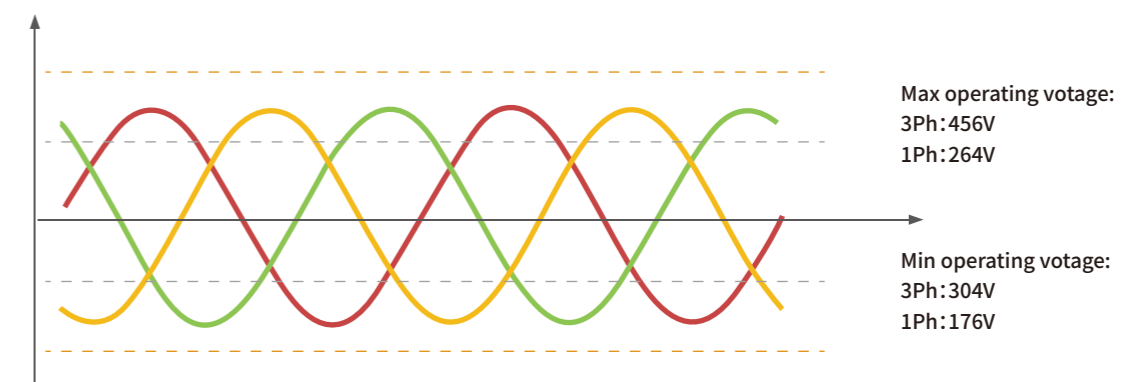
## Rotational defrosting technology

Rotational defrosting - Control the number of defrosting units in the parallel system, defrosting in batches and stages, avoiding excessive fluctuation of water temperature under defrosting, and improving comfort



## DC inverter drive, good adaptability of power supply

DC inverter module can adapt to the fluctuation of the electricity voltage, can operate normally under the voltage fluctuation intensity of  $\pm 20\%$  of the electricity grids, and can also adapt to the 50HZ/60HZ power supply specification.



## Titanium heat exchanger

Titanium has the super strong corrosion resistant ability. Our titanium heat exchanger use seamless pure titanium tube as heat conductor, can ensure the titanium heat exchanger be used for a long time, without any cost in the after-sale services.



## Heating & Cooling

By utilizing 4 ways valve, TONGYI Heat Pump provide both heating and cooling mode to create more possibility for pool enjoyment.



## Remote control

With RS485 modbus support and easy connect to BMS.

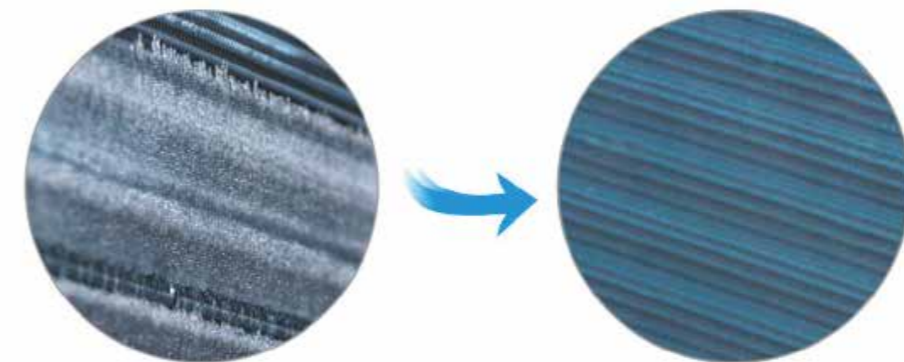
## EEV, precise flow control

Wide working temperature range, faster and more accurate refrigerant flow control than capillary and mechanical expansion valve. Best choice to achieve higher efficiency and energy-saving.



## Auto-defrosting program and anti-freeze

Intelligent defrosting technology, which can determine the time of defrosting according to the operating conditions of the unit (running time, exhaust temperature), ambient temperature and thickness of frost, so as to achieve intelligent defrosting when it is necessary, which greatly shortens the defrosting time by more than 20% and ensures the high heating capacity.



## Intelligent Controller Display



- Human intelligent control
- Long distant control
- Multiple timing functions
- Internet control support
- Automatic power-off memory function
- Automatic diagnose, error code for trouble
- Available to inquiry any parameter
- Convenient maintenance

## DC inverter compressor

Significant energy savings, precise and stable temperature control, quieter operation, longer lifespan, wider operating range, lower vibration.



## High-performance Fan

It uses super silent axial flow fan with four leafs balanced plastic wind wheels. It has the advantages of corrosion resistance, large air volume and lower noise.



## DC inverter motor

DC inverter motors deliver substantial energy savings, superior process control, reduced mechanical stress, quieter operation, extended equipment lifespan, and enhanced operational flexibility.



## DC Inverter Commercial Swimming Pool Heat Pump

- Lower noise (DC inverter compressor and fan motor).
- More country power supply compatible (176-456V/50HZ/60HZ).
- R32, more eco-friendly (lower GWP675).
- Outlet water temperature 7-45°C.
- Operating ambient range: -35-43°C(EVI)
- COP 6.1.



Model No.		KX150 DEPA-V/Y	KX230S DEPA-V/Y	KX550S DEPA-V/Y	KX1000S DEPA-V/Y
Technical Data					
Advised Pool Volume	m <sup>3</sup>	70	80	180	340
<b>Dry/wet bulb temperature: 27/24°C, water inlet temperature: 24°C, water outlet temperature: 27°C, humidity 78%</b>					
Heating (KW)	KW	15	23	55	100
Power(KW)	KW	2.7	3.8	9.2	16.5
COP(W/W)	W/W	5.6	6.1	6.0	6.1
<b>Dry/wet bulb temperature: 20/15°C, water inlet temperature: 26°C, water outlet temperature: 28°C, humidity 59%</b>					
Heating (KW)	KW	16.8	17.3	44.2	90.2
Power(KW)	KW	3.4	3.5	8.8	16.2
COP(W/W)	W/W	5	5	5	5.6
<b>Dry bulb temperature: 15°C, wet bulb temperature: 12°C, water inlet temperature: 26°C, water outlet temperature: 28°C, humidity 71%</b>					
Heating (KW)	KW	15.1	15.5	41.4	84.1
Power(KW)	KW	3.3	3.4	8.6	16
COP(W/W)	W/W	4.6	4.6	4.8	5.3
<b>Dry/wet bulb temperature: 35/24°C, water inlet temperature: 29°C, water outlet temperature: 27°C.</b>					
Cooling(KW)	KW	7.7	7.9	20.5	77
Power(KW)	KW	2.6	2.5	6.3	28.1
EER(W/W)	W/W	3.1	3.1	3.2	2.7
<b>Dry/Wet bulb: 35/-°C, Inlet water: 9°C, Outlet water: 7°C</b>					
Cooling(KW)	KW	3.2	3	9.9	40.5
Power(KW)	KW	2.5	2.5	5.3	21.2
EER(W/W)	W/W	1.2	1.3	1.9	1.9
Power Supply	Volts/Ph/Hz	176-264V/1Ph/50Hz	304-456V/3Ph/50Hz	304-456V/3Ph/50Hz	304-456V/3Ph/50Hz
Power Supply	Volts/Ph/Hz	176-264V/1Ph/60Hz	304-456V/3Ph/60Hz	304-456V/3Ph/60Hz	304-456V/3Ph/60Hz

Model No.		KX150 DEPA-V/Y	KX230S DEPA-V/Y	KX550S DEPA-V/Y	KX1000S DEPA-V/Y
Max Input Power	W	5.6	6.2	13.8	32
Max Input Current	A	25.5	14	24.7	57
Compressor Brand	/	GMCC	GMCC	GMCC	PANASONIC
Compressor Type	/	DC Inverter Rotary	DC Inverter Rotary	DC Inverter Rotary	DC Inverter Rotary
Compressor Quantity	/	1	1	1	2
Motor Type	/	DC Inverter	DC Inverter	DC Inverter	DC Inverter
Fan Type	/	Axial Flow Fan	Axial Flow Fan	Axial Flow Fan	Axial Flow Fan
Fan Air Volume	m <sup>3</sup> /h	3000	3000	6000	12000
Heat Exchanger	type	Titanium	Titanium	Titanium	Titanium
Water Flow Rate	m <sup>3</sup> /h	7	8.3	19.23	38.75
Pressure Drop Through Heat Exchanger	kPa	≤40	≤40	≤55	≤70
Max Working Pressure-Water Side	kPa	600	600	600	600
Refrigerant	/	R32	R32	R32	R32
Global Warming Potential (GWP)	/	675	675	675	675
Refrigerant Charge	kg	1.35	1.35	2.7	3.8
Lowest Outlet Water Temperature	°C	7	7	7	7
Highest. Outlet Water Temperature	°C	45	45	45	45
Operating Ambient Range	°C	-35-43	-35-43	-35-43	-35-43
Refrigerant System Pressure Max.	kPa	4400	4400	4400	4400
Refrigerant System Pressure Min.	kPa	50	50	50	50
Water Pipe Connection	type	Internal Threaded	Internal Threaded	Internal Threaded	Flange
Inlet Water Pipe	DN	25	25	40	75
Outlet Water Pipe	DN	25	25	40	75
Cabinet	/	Powder Painted Galvanized Steel			
IP Rating	/	IPX4	IPX4	IPX4	IPX4
Noise (1m)	dB(A)	54	54	60	80
Noise (10m)	dB(A)	34	34	40	60
Net Weight	kg	78	85	168	595
Packing Weight	kg	99	105	208	655
Unit Dimensions(LxWxH)	mm	1030×380×780	1030×380×780	1262×485×1670	2200×1005×1890
Packing Dimensions(LxWxH)	mm	1150×550×1000	1150×550×1000	1410×610×1840	2280×1150×2065

## Project Portfolios

### DAXING INTERNATIONAL AIRPORT



- Category: Hot water-Transportation
- Model: TONGYI EVI Commercial Air source HP
- Description: supply of hot water for aircraft maintenance. Also supply hot water for China southern airline VIP bathroom. Providing hot water in low ambient temperature.

## Project Portfolios

### BEIJING OLIMPYC STADIUM



- Category: Hot water-stadium
- Model:TONGYI EVI Commercial air source heat pump
- Description:TONGYI Commercial heat pump water heater, supply hot water for restroom in bird nest stadium.

## Project Portfolios

### SAIC MOTOR FACTORY



- Category: Hot water- Factory
- Model:TONGYI EVI Commercial air source heat pump
- Description:TONGYI Commercial EVI heat pump water heater, supply hot water for staffs in SAIC factories.

## Project Portfolios



Alibaba



ZOOMLION



SOFITEL



Taj Mahal hotel



Unilever



HONDA



Bulgari



Westin



Shenzhen Universiade



Hangzhou Asia Games



St Regis



Pullman

# Project Portfolios



Shangri-La



Hilton



Le Meridien



Marriott



Four Season



Double Tree



Mercure



NARADA



Holiday Inn



Langham



Novotel



Conrad

## Project Portfolios



# Join the green revolution with Tongyi Heat Pump Technology Your partner in achieving carbon neutrality!

For over two decades, we've been at the forefront of the fight against climate change by conserving energy and reducing CO2 emissions. Our efforts are equivalent to planting **100 million** trees since 1999, and we're just getting started.

**coal** **750,000tons**  
Reduced 750,000 tons of coal consumption

**CO<sub>2</sub>** **3 billion kilograms**  
Prevented the release of 3 billion kilograms of carbon dioxide emissions

**NO<sub>x</sub>** **3.2 million kilograms**  
Reduced nitrogen oxides emissions by 3.2 million kilograms

**SO<sub>2</sub>** **12.5 million kilograms**  
Saved 12.5 million kilograms of sulphur dioxide emissions from being released into the atmosphere.

With our technology, you can make a significant impact on the environment while saving costs. Join us in our mission to achieve carbon neutrality and create a greener, more sustainable future. Choose Tongyi Heat Pump Technology and experience the benefits of eco-friendly living.