CXAJ/CGAJ
Air-cooled modular chiller
Unit 45KW/65KW/130KW
High efficiency model • Standard model
Benefits of the air-cooled modular chiller

Application versatility
The air-cooled modular chiller is applicable for shopping malls, supermarkets, office buildings, cinemas, plants, hospitals, hotels, etc.

Simple system saves initial cost
Compared with conventional water-cooled chillers, modular chillers don’t require cooling towers, cooling water pumps, boilers and relevant pipelines that are necessary for ordinary chilled water system. It features a simple structure requiring no dedicated chiller plant, which greatly saves space and construction cost, thus significantly reducing total project investment.

Modular design provides good expansibility
Modular chillers can be added or reduced as per the project phase. The added modules share the same water system with the original system, ensuring a strong and convenient expansion capacity.

Space saving with convenient transportation
Modules are small, light, therefore are convenient for transportation. With flexible assembly, the unit can be mounted on grounds, platforms or roofs.

Multi-level capacities adjusting
Each module consists of multiple cooling systems. An integration of several modular chillers will achieve multi-level capacities adjusting, thus lowering energy consumption.
Trane CXAJ/CGAJ
Modular Air-cooled Chiller (Heat Pump) Unit

Excellent performance of Trane modular chiller

- Up to 25 modules in single modular system, easier to expand system capacity
- Smooth air circulation, convenient installation & maintenance space
- R410A environmentally friendly refrigerant
- Y-shape reduces floor space
- EER up to 3.39, IPLV up to 4.0
- Wide operation range
- Light-weight structure design
- Balanced system operation, defrost with non-stop running
- Intelligent control functions
- Cover design makes maintenance easier
Product features

Up to 25 modules in single modular system, easier to expand system capacity

- Uniform appearance for different modules (45kW, 65kW and 130kW) guarantees orderly installation on site.
- Up to 25 modules, with capacity of 3,250kW and applicable floor space of 30,000 m².
- Module installation allows easy transportation as well as system expansion and staged investment.

* Note: The data is for reference only. The actual applicable areas are subject to change as per different cities, climates and designs.
Y-shape design achieves seamless module connection, saving more installation areas.

Trane’s new CXAJ/CGAJ modular chiller adopts Y-shape design, which is granted with appearance patent.

- The design achieves seamless connection at length direction, saving the service space between modules. More than 30% floor space is reduced comparing with conventional design.

- The design simplifies water piping, saves installation space, and reduces system pressure drop effectively, thus reducing pump consumption.

For example, the three-module unit saves 30% of floor space.

Light-weight unit reduces the foundation load

CXAJ/CGAJ module unit adopts light-weight design (Minimum weight per unit: 700kg), reducing the foundation load.

Wide operation range can meet air-conditioning requirements in different regions.

CXAJ/CGAJ module unit is capable of cooling operation under an ambient temperature range of 15~48°C and heating operation under that of -15~25°C, which can meet the demand for comfort air conditioning design in different regions.
Reliable support for stable operation

Balanced compressor operation

CXAJ/CGAJ system can monitor compressors status in each module timely via modular controller and adjust each compressor running time to balance and allocate compressors intelligently, thus prolonging service life.

190-hour operation
180-hour operation
200-hour operation

Back-up operation will be activated in case of failure.

Single CXAJ/CGAJ module contains more than two compressors and refrigerating circuits. In case of failure of one compressor, other compressors will switch to emergency operation.

Automatic failure alarm

With automatic failure alarm, the fault code will be indicated on the screen of the controller in case of any failure, enabling operators to conduct trouble shooting timely.
Continuous heating and defrosting with non-stop running in winter

- Under heating mode in winter, the air-cooled heat pump will encounter frost due to the moisture in the air at a low temperature. Trane’s intelligent defrosting function can select the appropriate defrosting time automatically as per the operating conditions to guarantee continuous indoor heating effect.

- When modular connected, the master controller will calculate and balance the defrosting time of each module automatically. The defrosting operations in any modules will not impact the normal working of the others, so as to guarantee the continuous heating in winter.

Multi protection

- Power protection
- Low water flow protection
- Compressor overloading protection
- Fan overloading protection
- High exhausting pressure protection
- High exhausting temperature protection
- Low delivery water temperature protection
- Low suction pressure protection
- High delivery water temperature protection

Efficient scroll compressor

- The tandem scroll compressor (high efficiency model) greatly improves the efficiency under partial loads.

- The compressor is standard with heating belt on crank case, keeping the lubricating oil effective in cold winter.

Electronic expansion valve (high efficiency model)

Featuring high accuracy of adjustment and rapid movement, the electronic expansion valve can adapt to any sudden change of the refrigerant flow, especially at low temperature. Comparing with the thermal expansion valve, it may better react to superheat conditions for accurate and rapid adjustment.

Efficient shell-tube heat exchanger

Thanks to the shell-tube heat exchanger design, the pressure drop inside is lower, and the system energy consumption and risks of filth or ice blockage will thus be reduced.

Dry filter

It avoids filth or ice blockage caused by impurities or moisture in the refrigerating circuit.

Separator

It avoids liquid shock caused by liquid refrigerant into compressor.
Installation guideline

Installation space

- Y-shaped design with seamless module connection can keep air circulation on a smaller floor space. 610mm space at the bottom conduces to the smooth maintenance.
- It is suggested to put the unit at a place with good heat dissipation and at least 1.2m away from the wall. Please refer to the installation manual if the unit needs to be placed indoors.

Easy maintenance

The special design of the frame and cover keeps the major parts and control panel, inside, which can protect the damage arising from external environment and reduce the operation noise. Meanwhile, the maintenance of the unit is also very simple and convenient.
**Multi modules (Reversed connection)**

- Up to 8 units in single module.
- Only reversed connection is allowed.

**Single module: Can connect up to 8 units**

- Reversed connection

Note: For multi modules, up to 8 units in single module. Direct return connection is not allowed.

- Direction return connection

Note: The maximum units in direct return connection is 4.
A centralized control of up to 25 units can be achieved. Up to 25 units can be centrally controlled by one modular controller.

Trane’s modular controller is applicable to single unit or multi-modules combination for centralized control.

**Features**
- 50x100mm LCD display and 15 buttons, convenient operation interface.
- RS485 port provides standard Mod Bus communication protocol to control system in buildings.

**Functions**
- Rapid query (Automatic browsing and manual query)
- Software monitoring
- Keyboard locking to avoid mis-operation
- Display of unit failure

**Group control**
- Building management system (BMS)

The high efficiency model can be connected to the building management (System BMS) by the standard Mod Bus communication protocol, which can support up to 375 units.
## Control and unit parameters

### Unit parameters

#### Standard model

<table>
<thead>
<tr>
<th>Model</th>
<th>CXAJD45</th>
<th>CXAJ095</th>
<th>CXAJ130</th>
<th>CGAJ185E</th>
<th>CGAJ205</th>
<th>CGAJ215</th>
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<tr>
<td>Rated cooling capacity kW</td>
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<td>380/50/3</td>
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#### Efficient scroll compressor

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<th>Quantity</th>
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<td>2</td>
<td>4</td>
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#### Efficient tandem scroll compressor

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<th>Type</th>
<th>Quantity</th>
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<th>4</th>
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<td>Rated heating input current A</td>
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#### Efficient tandem scroll compressor

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<td>Refrigerant charge kg</td>
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<td>730</td>
<td>730</td>
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</table>

1. The cooling capacity is measured at the condition of water inlet at 12°C, water outlet at 7°C and air inlet at 35°C of ambient temperature.
2. The heating capacity is measured at the condition of water inlet at 40°C, water outlet at 45°C and air inlet at 7°C of dry-bulb temperature and 6°C of wet-bulb temperature.

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