



MEGA-Q



DAIKIN *MEGA-Q*
ALL-ELECTRIC
HOT WATER
GENERATION
SYSTEM

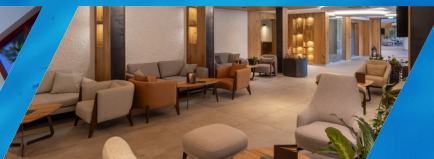
Accelerating Decarbonization of Commercial Buildings



HOSPITALS



MULTI-FAMILY HOMES



HOTELS



SCHOOLS



GYMS AND SPAS



OFFICES

DISCOVER DAIKIN MEGA-Q

Hot water is used in everyday activities. In North America, gas, oil, electric, and steam boilers have been leveraged traditionally to generate hot water. Air-to-water heat pump technology offers an all-electric alternative for generating hot water, reducing dependence on fossil fuel systems. Daikin's inverter-driven Daikin *Mega-Q* system provides an all-electric hot water solution, making it an ideal choice for commercial buildings with large volume non-potable hot water demand. The heat source component of *Mega-Q* should be used for heating water for non-potable use only, not for other applications such as but not limited to space heating or cooling.

Features and Benefits:

- » All-electric heat pump technology for non-potable hot water generation in commercial applications.
- » Dependable hot water generation at ambient temperatures from -4°F DB to 109°F DB (from -20°C DB to 43°C DB).
- » Customizable high-leaving water temperatures from 140°F to 194°F (from 60°C to 90°C) with inlet water temperatures from 41°F to 176°F (from 5°C to 80°C).
- » Year-round high efficiencies with up to 4.6* COP thanks to Daikin's inverter heat pump and cascade technologies.
- » Scalable and modular system design allows for up to 6 Daikin *Mega-Q* systems to connect to the same hydronic loop, achieving total nominal capacity of 720 MBH.
- » Flexible application design with a vertical separation of up to 65 ft. between the heat source unit and the cascade unit.
- » Modular and compact system design enables installation indoors or outdoors.
- » Built-in variable-speed water pump increases waterside system efficiencies compared to single-speed pumps and can handle water flow rates of up to 3.8 gallons per minute (GPM).



*Based on heating conditions at the outdoor temperature of 77°F DB/69.8°F WB, the outlet water temperature of 149°F, and the inlet water temperature of 75.2°F.



* Complete warranty details available from your local dealer/contractor or at www.daikincomfort.com. Daikin *Mega-Q* heat source unit (RXHWQ120MQTJA) and cascade unit (BWLP120TJU) come with a 5-Year Parts Limited Warranty where installation and commissioning requirements are satisfied. Other limitations and exclusions apply.

DECARBONIZING WATER HEATING IN COMMERCIAL APPLICATIONS.

Decarbonization is happening across North America.

Several states, cities, and local bodies have set decarbonization goals for their regions. As of January 2024, 24 states have enacted laws for decarbonization. States such as California, Washington, and New York have implemented bans on certain fossil fuel heating systems as part of these initiatives.

Why is it important?

Most buildings are equipped with traditional, inefficient commercial gas boilers powered by fossil fuels. Commercial gas boilers generally demand large spaces with complex plumbing and safety requirements. They can also require frequent maintenance, including daily checks of temperature, pressure, and water levels. Additionally, periodic scheduled changeovers make operating gas boilers a labor-intensive task.

The Strength of Daikin *Mega-Q*

Leveraging Daikin's innovative inverter and air-to-water heat pump technologies, the Daikin *Mega-Q* offers an all-electric non-potable hot water generation solution to support the following:

- » Switching out fossil-fuel based technologies to all-electric alternatives
- » Alignment with electrification and decarbonization objectives
- » Design flexibility for versatile installation scenarios



A study suggests that an average household gas boiler emits more CO₂-equivalent in a year than taking seven transatlantic jet airliner flights between London and New York*.

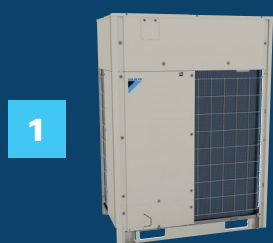
*www.nesta.org.uk

Daikin *Mega-Q* is an all-electric hot water generation system that is built upon 3 main components—heat source unit, cascade unit, and tank controller kit—providing some attributes of a central hot water generation system but with the flexibility of indoor or outdoor installation.

Mega-Q offers all-electric hot water generation for various non-potable water applications, such as multi-family buildings, offices, hotels, schools, and other large commercial applications.

This innovative system can supply non-potable hot water to commercial buildings even in outdoor ambient temperatures as low as -4°F. The dual refrigerant circuit split system design features Daikin's Inverter-driven heat pump technology. Coupled with an inverter-driven cascade unit, the *Mega-Q* supports reliable performance with customizable high-leaving hot water temperatures ranging from 140°F to 194°F with inlet water temperatures from 41°F to 176°F.

The Daikin *MEGA-Q*:



Heat Source Unit

- » All-electric inverter air-cooled heat source
- » R-410A refrigerant

The heat source component of *Mega-Q* should be used for heating water for non-potable use only, not for other applications such as but not limited to space heating or cooling.

REFRIGERANT
PIPING

2



Cascade Unit

- » Cascade unit – Refrigerant to water
- » Built-in inverter water pump
- » R-134A refrigerant

HYDRONIC
PIPING

3



Tank Controller Kit

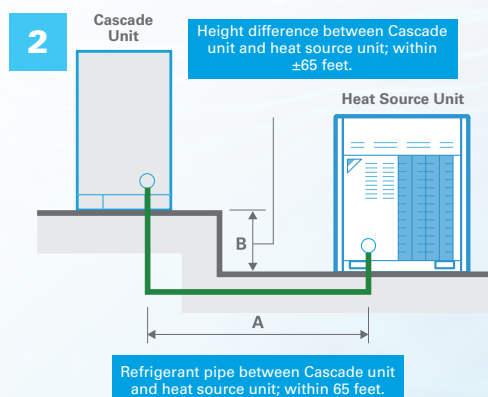
- » Connects to the hot water storage tank using three water temperature sensors
- » Controls up to 6 *Mega-Q* systems on the same hydronic loop

Note: Hot water storage tank is field supplied.

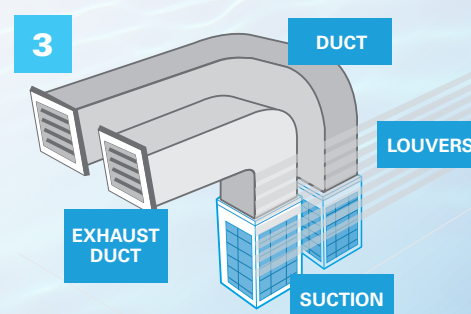
Flexible Installation:



- » The heat source unit and cascade unit are installed outside side by side.

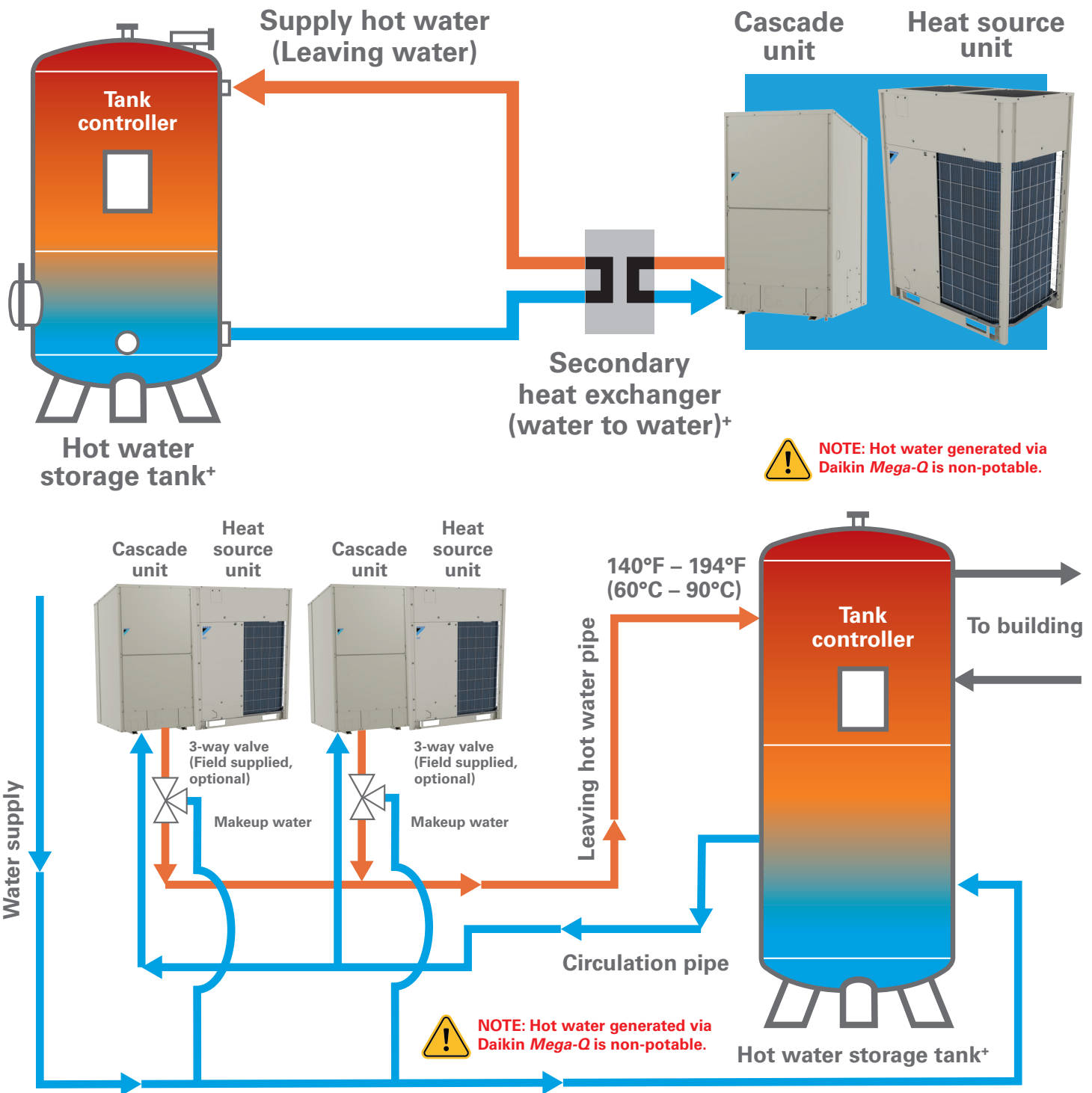


- » The cascade unit can be installed up to 65 feet away from the heat source unit, with the option to place it indoors.



- » Both the heat source unit and cascade unit can be installed indoors. Note that the heat source unit must be ducted to the outside.

HOW DAIKIN MEGA-Q WORKS



⁺ Not required for operation of the Daikin Mega-Q system. Field supplied if used in applications.

Dual refrigerant circuit of Daikin Mega-Q achieves high-temperature hot water output.

Daikin Mega-Q takes advantage of the excellent low ambient temperature characteristics of R-410A combined with high temperature boiling characteristics of R-134A to generate high-temperature water up to 194°F.

RXHWQ120MQTJA + BWLP120TJU

| | | | | | | |
|---------------------------------|-------------------------------|--------------------------|---|--|---|--|
| Sound (A scale) | | | Db | 55 (Winter 59) | | |
| Unit Model Name | | | | Heat Source Unit | Cascade Unit | |
| Model Name | | | | RXHWQ120MQTJ* | BWLP120TJU | |
| Power Supply | | | 3 Phase 208/230V 60Hz | | | |
| Casing Color | | | Ivory White (5Y7.5/1) | | | |
| External Dimensions (H x W x D) | | | In. (mm) | 66-11/16 (1694) x 48-7/8 (1242) x 30-3/16 (767) | 60-1/16 (1525) x 35-3/16 (893) x 30 (762) | |
| Heat Exchanger | Evaporator | | Cross Fin Coil | | Plate Heat Exchanger | |
| | Condenser | | | | Winding Spiral Tube Heat Exchanger | |
| Compressor | Model | | Hermetically Sealed Scroll Type | | | |
| | Starting System | | Soft Start (Inverter) | | | |
| | Motor Output | | kW | (4.4 + 4.4) | (4.5 + 4.5) | |
| Fan | Model | | Propeller Fan | | N/A | |
| | Motor Output x Number | | kW | 0.75 x 2 | N/A | |
| | Air Flow | | cfm (m3/min) | 8228 (233) | N/A | |
| | Drive System | | Direct Drive | | N/A | |
| Water Pump | | | N/A | | Non-Self-Priming Canned Pump | |
| Connecting Pipe | Heat Source Unit | Liquid Side Pipe | in. (mm) | 1/2 (12.7) C1220T (Brazed Connection) | N/A | |
| | | Gas Side Pipe | in. (mm) | 1-1/8 (28.6) (Brazed Connection) *1 | N/A | |
| | Heat Source Unit Cascade Unit | Liquid Side Pipe | in. (mm) | 1/2 (12.7) C1220T (Brazed Connection) | | |
| | | Gas Side Pipe | in. (mm) | 7/8 (22.2) C1220T (Brazed Connection) *1 | | |
| | Cascade Unit | Liquid Side Pipe | in. (mm) | N/A | 1/2 (12.7) | |
| | | Gas Side Pipe | in. (mm) | N/A | 7/8 (22.2) | |
| | | Circulation (water) Pipe | in. (mm) | N/A | NPT3/4 male thread (after the installation of piping adaptor) | |
| | | Outlet (hot water) Pipe | in. (mm) | N/A | NPT3/4 male thread (after the installation of piping adaptor) | |
| | Weight | | lb. (kg) | 695 (315) | 639 (290) | |
| | Safety Device | | High pressure switch, Fan driver overload protector, Overcurrent relay, inverter overload protector | | High pressure switch, inverter overload protector | |
| | Defrost Method | | Deicer | | N/A | |
| | Refrigerant | Refrigerant Name | | R-410A | | High side R-134A Low Side R-410A |
| | | System Charge | | lbs. (kg) | 18.1 (8.2) | 13.2 (6.0) |
| | | Control | | Electronic Expansion Valve | | |
| | Design Pressure | High Pressure | PSIG (Mpa) | 478 (3.30) | | High Side 550 (3.80) Low Side 580 (4.00) |
| | | Low Pressure | PSIG (Mpa) | 320 (2.21) | | High Side 248 (1.71) |

*1 The pipe diameter on the gas side of the heat source unit is different between the heat source unit and the cascade unit. When arranging piping, procure with the gas piping diameter between the heat source unit and the cascade unit.

| UNIT MODEL NAME | | | | TANK CONTROLLER KIT | |
|-----------------|---------------------|-----------|-----------|---|--|
| Model | | | | BRP26B2VJU | |
| Controller Box | Power Supply | | | 1-Phase 208/230V 60 Hz | |
| | Exterior | | | Ivory White (5Y7.5/1) | |
| | Dimensions | H x W x D | In. (mm) | 17-11/16 (450) x 11-13/16 (300) x 3-15/16 (100) | |
| | Weight | | lbs. (kg) | 23 (10.5) | |
| External Output | | | | Operation ON | |
| | | | | Malfunction | |
| External Input | | | | Operation ON | |
| | | | | Demand Control | |
| | | | | Hot Water Set Temperature Switch | |
| Attached Sensor | | | | Thermistor for hot water (Screw Type) x 3 | |
| Accessory | | | | Remote Controller | |

About Daikin:

Daikin Industries, Ltd. (DIL) is a global Fortune 1000 company and is recognized as one of the largest HVAC (Heating, Ventilation, Air Conditioning) manufacturers in the world. Founded in 1924, Daikin is celebrating 100 years of HVAC worldwide leadership. DIL is primarily engaged in developing indoor comfort systems and refrigeration products for residential, commercial, and industrial applications. Its consistent success is derived, in part, from a focus on innovative, energy-efficient, and premium quality indoor climate and comfort management solutions.

To learn more, visit mega-q.com



WARNINGS:

- » The heat source component of *Mega-Q* should be used for heating water for non-potable use only, not for other applications such as but not limited to space heating or cooling.
- » Always use a licensed installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- » Use only those parts and accessories supplied or specified by Daikin. Ask a licensed contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- » Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.
- » For any inquiries, contact your local Daikin sales office.

NOTICE
NON-POTABLE
WATER
DO NOT DRINK



Our continuing commitment to quality products may mean a change in specifications without notice.
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