3C202404

Midea

Water Cooled Centrifugal Chiller

170~3000RT

Midea Building Technologies Division

Midea Group

Add.: Midea Headquarters Building, 6 Midea Avenue, Shunde, Foshan, Guangdong, China

Postal code: 528311

mbt.midea.com/global www.midea-group.com ics.midea.com

Quality Assurance ISO 9001

Environmental Management ISO 14001

Occupational Health and Safety Management ISO 45001

AHRI CERTIFIED® www.ahridirectory.org
Water-Cooled Water Chilling and Heat Pump Water Heating Packages
AHRI Standards 550/590 and 551/591

2024

MAKE A BEAUTIFUL TOMORROW

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.

Several production bases are situated on Shunde, Chongqing, Hefei, and Italy.
MBT Shunde: 38 product lines focusing on VRF, Split Products, Heat Pump Water Heaters and AHU/FCU.
MBT Chongqing: 14 product lines focusing on Water Cooled Centrifugal/Screw/Scroll Chillers, Air Cooled Screw/Scroll Chillers and AHU/FCU.
MBT Hefei: 11 product lines focusing on VRF, Chillers and Heat Pump Water Heaters.
Clivet S.p.A: 50,000m2 workshop in Feltre and Verona, covering products such as ELFO system, hydronic, WHLP, packaged, split and close control and so on.

FORTUNE GLOBAL 500 2023

1999
Entered the MBT field

2001
The R134a (LC) series centrifugal chiller was named as a key national product

2004
Acquired MGRE entered the chiller industry

2006
Launched the first VFD (Variable Frequency Drive) centrifugal chiller

2007
Won the first Midea centrifugal chiller project overseas

2008
Developed the Smart Star new-generation semi-hermetic centrifugal chiller

2015
• Launched the inverter direct-drive centrifugal chiller and magnetic bearing centrifugal chiller
• An international strategic platform has brought Midea Group, Carrier Corporation and Chongqing General Industry Group together in the chiller business

2016
Acquired 80% stake in Clivet

2017
Developed the large capacity air cooled scroll chiller

2019
Launched the Midea self-developed magnetic bearing centrifugal chiller

2020-2021
• Acquired the Chinese national brand Linvol Elevator and entered the elevator industry
• Launched the inverter air cooled screw chiller (free cooling)

2022
Launched the evaporative cooling scroll chiller

2023
Launched Air cooled screw chiller (Fixed-frequency，flooded)

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 ICS system and can be downloaded by using QR codes.

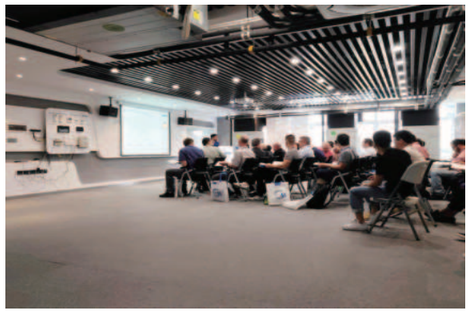
Midea Meeting

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

Chiller After Sales Courses

Chiller Introduction Courses

Midea Global Spare Parts Center

Midea Global Spare Parts Center

The global spare parts center provides high quality and fast spare parts supply. Midea online system (https://ics.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 (ICS)

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

APAC: *https://ics.midea.com/*
EMEA: *https://ics-eu.midea.com/*
Americas: *https://ics-amer.midea.com/*

My order

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

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 ICS, with the same functions as ICS. The mobile service makes technical support more timely and convenient.

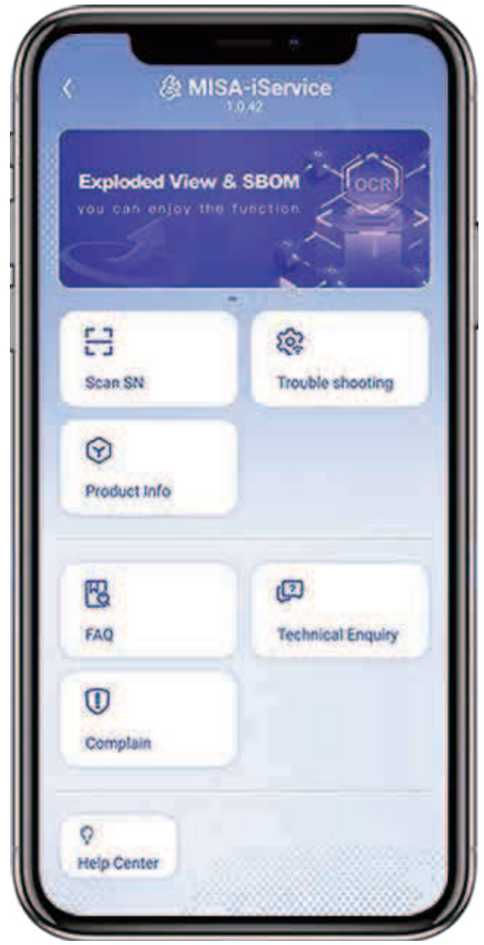
https://link.midea.com

FAQ

Complain

Technical Enquiry

Search product manuals



Trouble shooting

Spare Parts list

Download

Scan above to download the mobile app

Feedback

Thank you very much for your attention and advice

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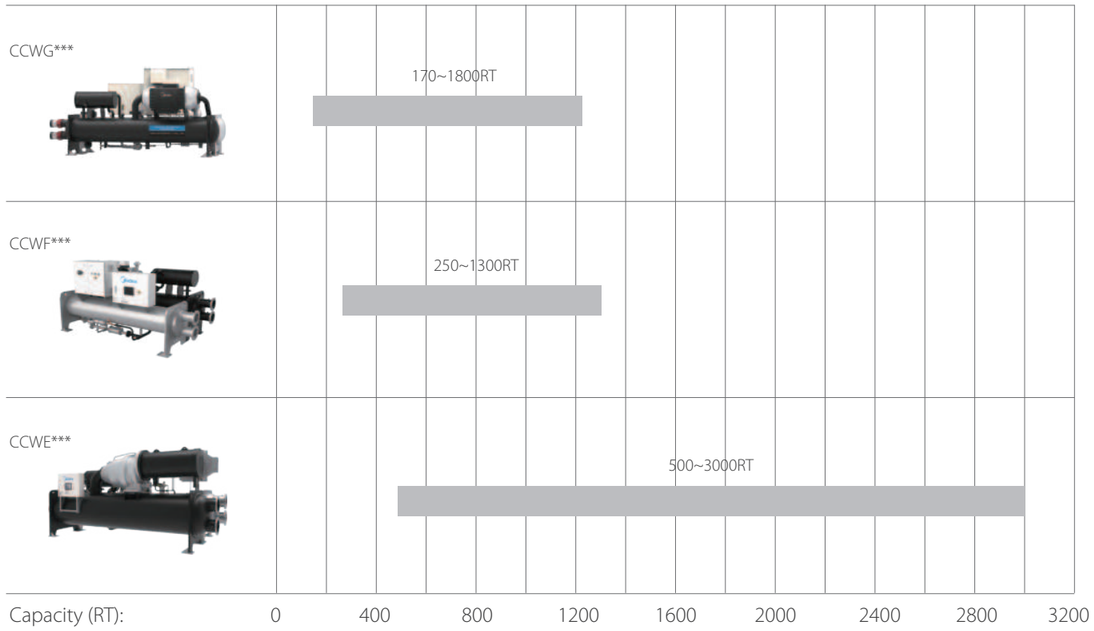
Product Lineup



MagBoost Magnetic Bearing Centrifugal Chiller

Features

Options and Nomenclature

Specifications

Dimensions

MagBoost magnetic bearing centrifugal chiller is the latest generation of oil-free centrifugal chillers with fully-independent intellectual property rights and featuring Midea's core technologies. The series offers oil free, high efficient, stable, reliable, low-noise and wide range operation. It is eco-friendly and economical as well. It adopts many of the core technologies that Midea has spent years developing such as the aerodynamic technology, magnetic bearing control, micro-channel refrigerant-cooled VFD and high-efficiency permanent magnet synchronous motors. The series can be used in various buildings including airports, rail transit, hotels, businesses and new or reconstructed buildings, providing customers with efficient and energy-saving green building solutions.

Features

Oil-free and high efficiency

Aerodynamic design, making full-load operation more efficient; the magnetic bearing avoids friction, making partial load more efficient and providing the maximum IPLV of 12.11; the full series have passed the AHRI certification.

Stable and reliable

Dual protection of self-generation control mode + spare bearing, ensuring safe operation under multiple harsh conditions.

Wide-range operation

Multi-technology joint adjustment widens the unit operation range while ensuring optimal efficiency; the cooling load of a single compressor can be as low as 10%.

Environmentally friendly

Back-to-back two-stage compression + noise reduction structure, minimizing the operating noise to 70 dB(A); full falling film evaporation technology reduces the refrigerant charge amount and better protects the environment.

Cost-saving

Oil-free throughout its entire life cycle, avoiding efficiency attenuation caused by oil film and saving more electricity; the maintenance costs are further reduced because it is not necessary to replace the lubricating oil and filter.

AHRI CERTIFIED
www.ahridirectory.org
Water-Cooled Water Chilling and Heat Pump Water-Heating Packages AHRI Standards 550/590 and 551/591

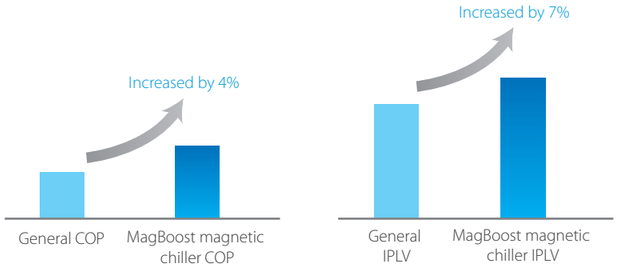
Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at: www.ahridirectory.org

1 Economizer
2 Control panel
3 VFD panel
4 Compressor
5 Condenser
6 Evaporator

MagBoost Magnetic Bearing Centrifugal Chiller

Oil-free and High Efficiency

MagBoost magnetic bearing centrifugal chiller boasts magnetic bearing technology, aerodynamic technology, a permanent magnet synchronous motor and full falling film evaporation technology. It combines Midea's unique back-to-back two-stage compression structure with higher energy efficiency as compared with the traditional magnetic bearing centrifugal chiller, improving the full-load energy efficiency by 4%* and improving the part-load energy efficiency by 7%*.



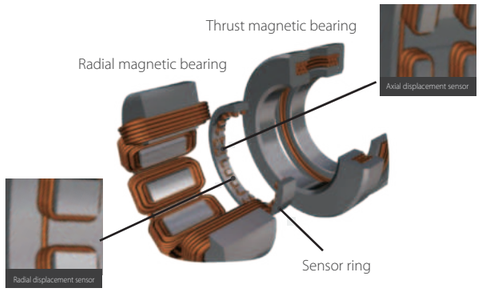
*The above data comes from the average energy efficiency comparison of Midea's new and old magnetic chillers.

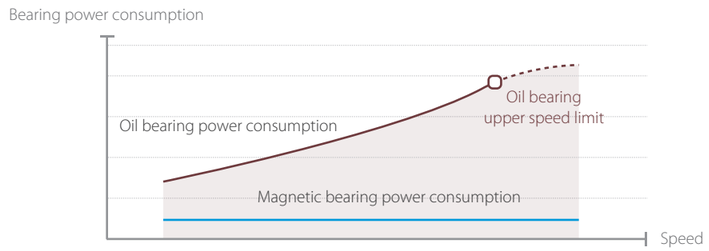
Magnetic bearing technology

Industrial-level magnetic bearing assembly including the radial magnetic bearing, thrust magnetic bearing and position sensor, featuring low power consumption, high bearing capacity and high reliability.

- Power consumption less than 0.4kW, only 2% to 10% of that of conventional oil bearings.
- Breaks through the upper speed limits of conventional oil bearings, significantly reducing power consumption of the bearing at high speed: the higher the speed, the more energy efficient the magnetic bearing is compared to the oil bearing.

Magnetic bearing component

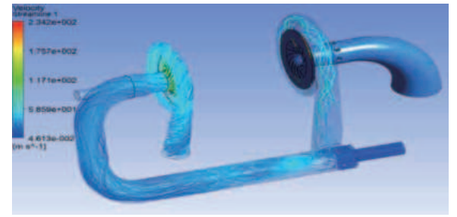




Bearing power consumption comparison

Aerodynamic technology

- Aerodynamic design optimizes the overall flow field efficiency and improves the compressor's isentropic efficiency.
- Back-to-back two-stage compression structure balances the thrust forces for longer life span and improves efficiency.
- Enclosed impeller design, reduced leakage and improved efficiency.
- 6% higher efficiency than single-stage compression.

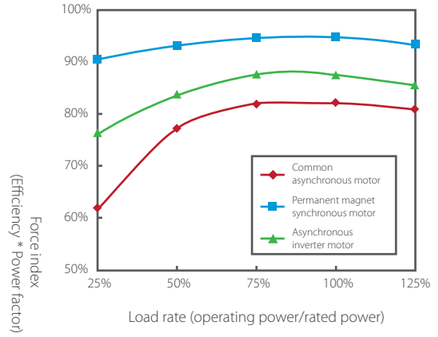


Back-to-back two-stage compression flow field analysis

Permanent magnet synchronous motor technology

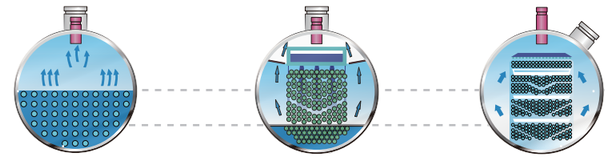
- Motor efficiency exceeds 96% in the full operating range, with the highest efficiency of up to 97%.
- The space vector pulse width modulation (SVPWM) technology is used for speed regulation and driving. Accurate and efficient operation is achieved according to changes in the operating conditions. The startup current is small, the operating current is low, the operating electricity charge and distribution cost of the whole life cycle are low.
- The real-time monitoring system of stator temperature and rotor shaft elongation achieve precise, highly-reliable cooling of the motor.

Permanent magnet motor



Full falling film evaporation technology

- First created the full falling film evaporator and adopted spray technology to achieve film evaporation on the surface of the heat exchange tube, greatly increasing overall heat transfer efficiency and reducing refrigerant charge.
- The patented refrigerant distributor can improve the homogeneity of the liquid to avoid local drying, fully showcasing the performance of the heat exchange tube and increasing unit efficiency.



Flooded type

Full falling film reduced refrigerant charge compared with the flooded type

Falling film

Full falling film reduced refrigerant charge compared with the falling film type

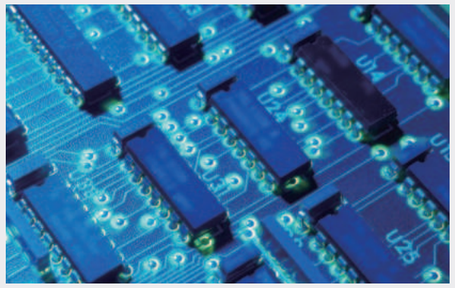
Midea full falling film

Almost zero liquid level

Patent No: 201120134421.5

Stable and Reliable

- MagBoost magnetic bearing centrifugal chiller is equipped with a self-generating mode after power failure and features a long-life spare bearing, which can achieve accurate and safe control of the magnetic bearing and ensure the safety of the magnetic bearing to guarantee high efficiency.
- The micro-channel refrigerant-cooled VFD technology substantially improves the reliability and adaptability of the VFD.



How to ensure accurate position control of the magnetic bearing?

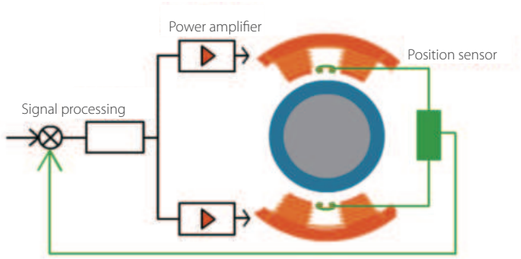
Accuracy: 20 kHz high frequency position monitoring, real-time correction output and position control precision at the μm level ensures accuracy of the shaft suspension position.

How does Midea ensure the safety of the bearing without lubricating oil after an unexpected power failure?

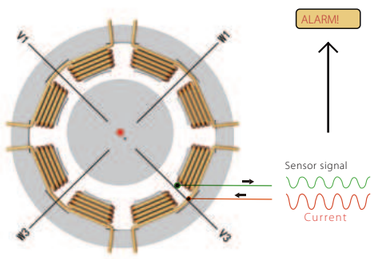
Safety: With dual protection of the self-generating mode and long-life spare bearing, a safe landing rate of spare bearing that is 10 times greater can be achieved when the compressor operates at max. speed; when the speed drops below 10%, normal landing is achieved.

Bearing control technology

- The bearing control system adopts prospective vibration compensation technology, which detects and controls the position at a high frequency to effectively reduce the impact of vibration on the rotating shaft by the amount of imbalance.
- 20 kHz dynamic position scanning and adjustment and position control precision at the μm level ensure the accuracy of the shaft levitation position.



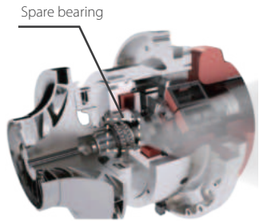
Prospective bearing control principle

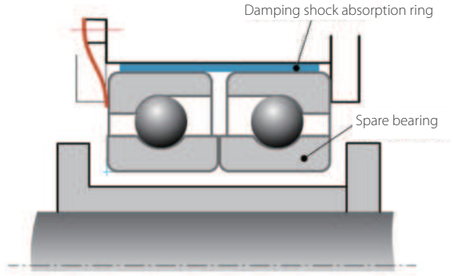


Bearing control diagram

Long-life spare bearing

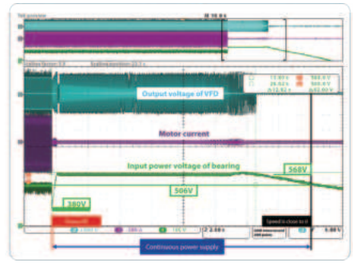
The spare bearing employs a set of high-strength rolling bearings and a damping shock absorption ring to effectively stop the rotor shaft during high-speed rotation if a magnetic bearing controller failure occurs, avoiding wear between the magnetic bearing, sensor and rotor and resulting in damage to the compressor.





Self-generation control technology

- Midea's self-developed VFD control + permanent magnet motor technology can automatically switch the motor to the generator mode in the event of unexpected power failure to ensure the stability of the bus voltage and the 40-750 V wide voltage adaptability of the bearing is combined to ensure the power supply safety of the magnetic bearing.
- The self-generating mode guarantees continuous power supply of above 15 Hz to the unit's magnetic bearing, ensuring the bearing remains levitating.



Micro-channel refrigerant-cooled VFD technology

Midea's independently-developed high-power VFD employs micro-channel refrigerant-cooled technology to fix problems such as high heat flux density, poor heat dissipation effects, tendency of liquid-cooled heat dissipation to form condensation, high network-side harmonic current, poor reliability of an abnormal power grid product, high stray inductance which easily damages IGBT, high temperature lack of temperature-reducing capacity, heavy air-cooled VFD and excessive noisiness of the high-power VFD, greatly improving reliability and adaptability of the VFD, enhancing the efficiency of the overall unit and greatly reducing noise.

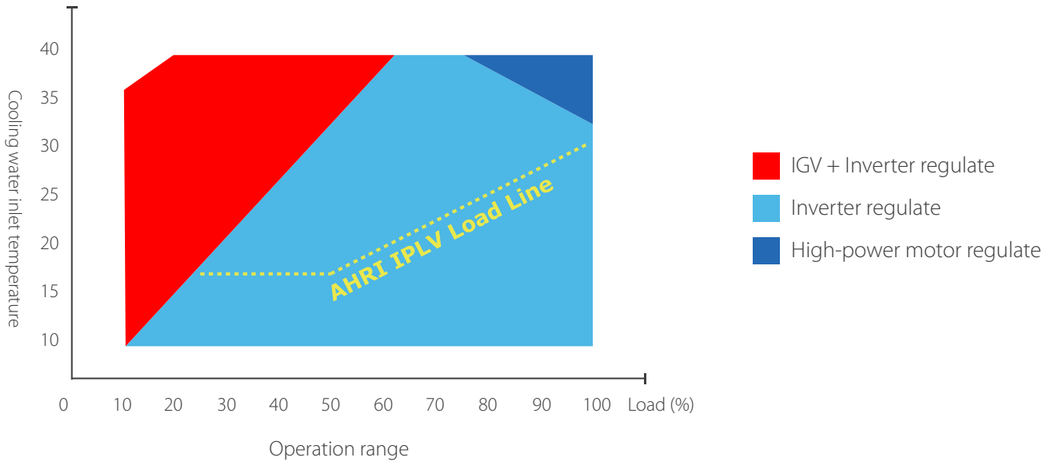
High reliability motor cooling design and monitoring

The whole flow field analysis and optimum design of the motor cooling channel is adopted to carry out real-time monitoring of the stator temperature and rotor elongation and to ensure operation reliability of the motor.

Multi-baffle 360° cooling

Wide-range Operation

Multi-technology bearing joint adjustment widens the unit operation range while ensuring optimal efficiency. The cooling load of a single compressor can be as low as 10% and the unit can operate normally when the cooling water drops to 12℃.



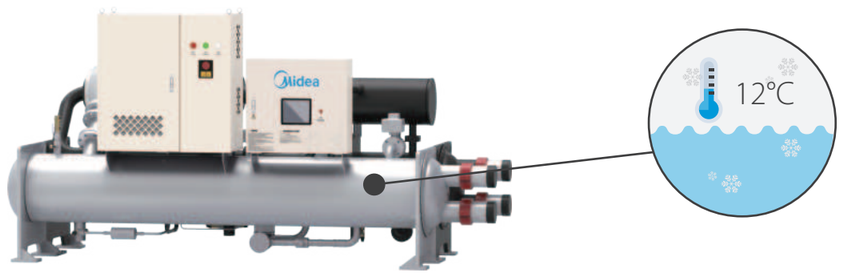
Joint regulation of multiple technologies

- MagBoost magnetic bearing centrifugal chiller adopts the inverter and Inlet Guide Vane (IGV) to jointly regulate the cooling capacity.
  In extreme operating conditions, the guide vane opening starts to be reduced when the load becomes 50%.
- When the load is above 15% under normal operating conditions, the load is regulated solely by changing the speed, thus
  avoiding the additional flow loss caused by reduced opening of the IGV.

Inlet guide vane (IGV)

Low ambient temperature operation control technology

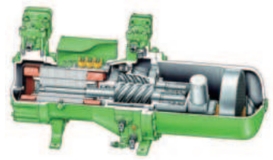
The low ambient temperature operation control technology ensures stable operation at a low cooling water temperature and provides a minimum cooling water temperature of 12°C.

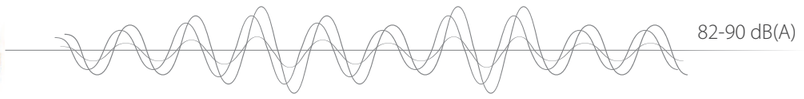


Eco-Friendly

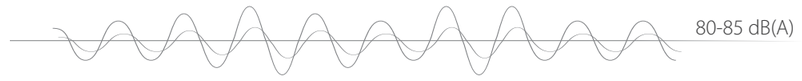
With reference to AHRI standard 575, sound pressure ratings are as low as 70 dB(A)

- No physical contact between moving metal parts, very quiet and low vibration levels.
- The back-to-back impeller + external pipe-type reflux device structure of the compressor reduces the pneumatic noise of refrigerant while flowing.
- The specially-designed compressor body structure uses the solid-gas-solid interface to dissipate high-frequency noise and achieve ideal sound insulation and noise reduction effects.





Traditional screw chiller



Traditional two-stage centrifugal chiller

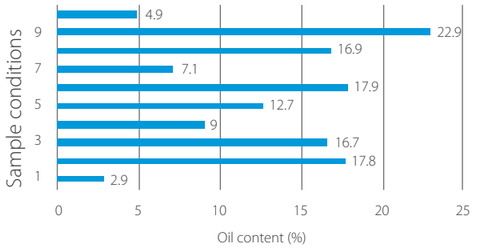
MagBoost magnetic bearing centrifugal chiller

- LEED

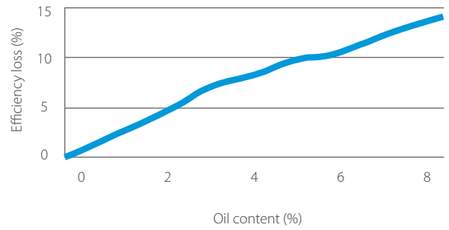
R134a refrigerant has zero ozone depletion potential and has no elimination cycle for now. Full falling film technology reduces refrigerant charge which enables to qualify for maximum leadership in Energy and Environmental Design®(LEED) points for Enhanced Refrigerant Management. And with the chiller' s high efficiency, you can also earn additional points for credits from Optimized Energy Performance (EAc1).

Cost-saving

No friction between moving metal parts, better part-load performance and efficient operation under all operating conditions.
No oil system, no oil system fault and no need for regular maintenance.



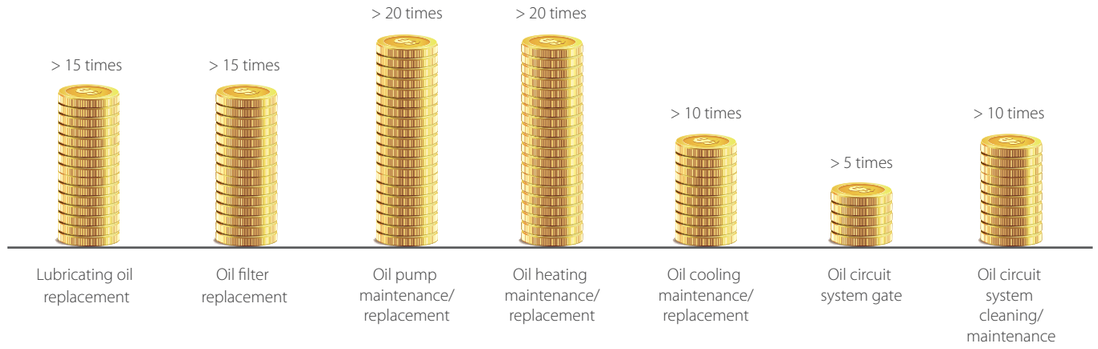
"The ASHRAE research report indicates that the oil content of most operating water chillers exceeds the standard" , ASHRAE Research Report 601



Studies have shown that, when the oil content of unit heat exchanger is 3.5%*, the energy efficiency of the entire unit will be reduced by 8%*

* Data comes from the ASHRAE Research Report 601.

Part of maintenance items of centrifugal chiller with oil



Taking the project of three 250RT centrifugal chillers as an example:
Maintenance: In the 20-year service cycle, the magnetic centrifugal chiller can reduce the costs related to the oil circuit system by about 1 million RMB compared with conventional fixed-speed centrifugal chiller with oil.
Operating costs: Supposing that the operation duration is 12 hours a day and 6 months a year, the magnetic chiller can save approximately 8 million RMB in operation cost throughout its life cycle.

Note: The above data are for reference purposes only and accurate data are related to the actual application and management of each project. The magnetic centrifugal chiller also requires related maintenance items. The above description focuses on only some of the differences between units equipped with an oil system. Specific maintenance content is subject to the installation, operation and maintenance manual.

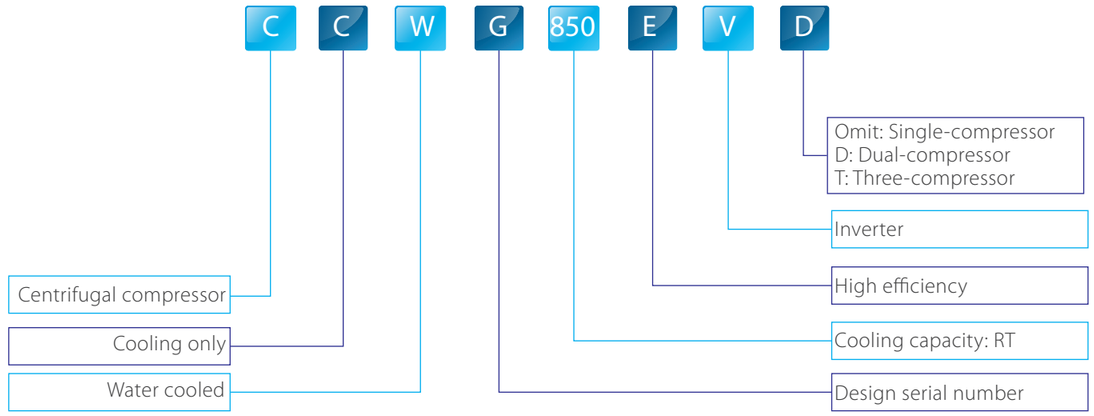
Options and Nomenclature

Optional applications

Items	Standard	Optional
Power supply	380V-3Ph-50Hz	380~460V, 50/60Hz
High pressure water box	1.0MPa	1.6MPa, 2.0MPa
Anti-vibration	Rubber pad	Spring isolator
Insulation	20mm	40mm
Refrigerant isolation valve	×	√
Flow switch	×	√
Knockdown shipment	×	√
Marine water box	×	√
Vessel code	GB	ASME, PED
Pressure vessel pass	2	1 or 3
Heat recovery	×	√
Witness performance testing	×	√
Tube automatic cleaning system	×	√
Midea Chiller Plant Control	×	√
Midea Smart Cloud platform	×	√
QuickView	×	√
Low total harmonic current distortion rate (THDI)	≤35% (full load)	≤5% (full load)

Note: For other options, please contact with our engineers.

Nomenclature



Specifications

Model		CCWG	170EV	200EV	230EV	250EV	270EV	300EV	350EV
Cooling capacity		RT	170	200	230	250	270	300	350
		kW	597.7	703.2	808.7	879.0	949.3	1055	1231
		10^4kcal/h	51.41	60.48	69.55	75.60	81.65	90.72	105.8
Power input		kW	93.43	107.7	122.3	134.3	143.7	161.0	189.8
COP		W/W	6.398	6.532	6.610	6.547	6.606	6.551	6.485
IPLV		W/W	10.20	10.56	11.11	11.36	11.79	10.69	11.24
Motor configuration power		kW	150.0	150.0	150.0	150.0	150.0	280.0	280.0
Rated current		A	152.6	175.9	199.0	219.3	234.8	263.0	310.0
Max. operating current		A	167.9	193.5	218.9	241.2	258.3	289.3	341.0
Evaporator	Water flow	m^3/h	97.35	108.6	124.9	135.8	146.7	163.0	190.1
	Pressure drop	kPa	31.4	41.9	46.6	54.0	47.0	46.3	46.5
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN150	DN200	DN200
Condenser	Water flow	m^3/h	114.7	135.1	155.0	168.8	182.6	202.5	236.6
	Pressure drop	kPa	26.8	35.8	38.0	44.3	38.6	45.7	49.4
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN150	DN200	DN200
Unit dimensions	Length	mm	3500	3500	3500	3500	3500	4150	4150
	Width	mm	1400	1400	1400	1400	1400	1650	1650
	Height	mm	1800	1800	1800	1800	1800	1850	1850
Shipping weight		kg	3110	3110	3225	3225	3350	4970	5100
Running weight		kg	3660	3660	3735	3735	3940	5520	5705

Model		CCWG	380EV	400EV	420EV	450EV	500EV	550EV	600EV
Cooling capacity		RT	380	400	420	450	500	550	600
		kW	1336	1406	1477	1582	1758	1934	2110
		10^4kcal/h	114.9	121.0	127.0	136.1	151.3	166.3	181.4
Power input		kW	203.4	216.2	227.9	233.6	260.3	287.2	318.7
COP		W/W	6.568	6.506	6.481	6.774	6.753	6.733	6.620
IPLV		W/W	11.29	11.43	11.47	11.35	11.66	11.99	12.01
Motor configuration power		kW	280.0	280.0	280.0	400.0	400.0	400.0	400.0
Rated current		A	332.4	353.2	372.2	381.6	425.3	469.2	520.6
Max. operating current		A	365.6	388.5	409.4	419.8	467.8	516.1	572.7
Evaporator	Water flow	m^3/h	206.4	217.3	228.2	244.4	271.6	298.8	325.9
	Pressure drop	kPa	49.0	47.1	47.4	50.3	52.6	54.6	49.9
	Water pipe connection	mm	DN200	DN200	DN200	DN250	DN250	DN250	DN250
Condenser	Water flow	m^3/h	256.7	270.2	284.0	302.8	336.7	370.6	405.8
	Pressure drop	kPa	54.1	50.1	53.2	58.6	60.5	57.2	59.7
	Water pipe connection	mm	DN200	DN200	DN200	DN250	DN250	DN250	DN250
Unit dimensions	Length	mm	4150	4150	4150	4700	4700	4700	4700
	Width	mm	1650	1850	1850	2050	2050	2050	2050
	Height	mm	1850	1950	1950	2450	2450	2450	2450
Shipping weight		kg	5140	5980	6030	7670	7800	7980	8170
Running weight		kg	5765	6735	6800	8630	8830	9090	9360

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWG	650EVD	700EVD	750EVD	800EVD	850EVD	900EVD	950EVD	1000EVD
Cooling capacity		RT	650	700	750	800	850	900	950	1000
		kW	2285	2461	2637	2813	2989	3164	3340	3516
		10^4kcal/h	196.6	211.7	226.8	241.9	257.0	272.3	287.4	302.4
Power input		kW	339.3	370.2	390.4	421.3	461.6	460.7	487.5	515.7
COP		W/W	6.736	6.649	6.754	6.676	6.475	6.868	6.851	6.818
IPLV		W/W	11.46	11.68	11.78	11.93	11.91	11.81	11.84	11.95
Motor configuration power		kW	560.0	560.0	560.0	560.0	560.0	800.0	800.0	800.0
Rated current		A	554.3	604.7	637.9	688.3	754.1	752.7	796.5	842.5
Max. operating current		A	609.7	665.2	701.7	757.1	829.5	828.0	876.2	926.8
Evaporator	Water flow	m^3/h	353.1	380.3	407.4	434.6	461.7	488.9	516.1	543.2
	Pressure drop	kPa	67.3	67.6	67.5	66.5	66.7	56.1	55.2	54.5
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Condenser	Water flow	m^3/h	438.9	473.0	506.7	540.3	575.2	605.8	639.6	673.7
	Pressure drop	kPa	65.4	66.0	66.1	66.0	67.5	72.2	72.2	72.3
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Unit dimensions	Length	mm	5050	5050	5050	5050	5050	4750	4750	4750
	Width	mm	2000	2000	2000	2000	2000	2950	2950	2950
	Height	mm	2200	2200	2200	2200	2200	2650	2650	2650
Shipping weight		kg	10820	12050	12170	12320	12430	11990	12140	12300
Running weight		kg	12030	13330	13520	13752	13925	13720	13950	14180

Model		CCWG	1100EVD	1200EVD	1300EVT	1400EVT	1500EVT	1600EVT	1700EVT	1800EVT
Cooling capacity		RT	1100	1200	1300	1400	1500	1600	1700	1800
		kW	3868	4219	4571	4922	5274	5626	5977	6329
		10^4kcal/h	332.6	362.9	393.1	423.4	453.9	483.8	514.1	544.3
Power input		kW	578.2	636.6	706.2	713.0	770.0	832.3	899.9	945.9
COP		W/W	6.689	6.628	6.914	6.904	6.849	6.759	6.642	6.628
IPLV		W/W	12.11	12.08	12.08	12.10	12.09	12.03	12.00	12.05
Motor configuration power		kW	800.0	800.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0
Rated current		A	944.6	1040	1080	1164.8	1258	1359.8	1470.2	1560
Max. operating current		A	1039.1	1144.0	1188.0	1281.3	1383.8	1495.8	1617.2	1716.0
Evaporator	Water flow	m^3/h	597.5	651.9	706.2	760.5	814.8	869.1	923.5	977.8
	Pressure drop	kPa	55.3	55.3	64.4	64.4	65.2	65.2	64.4	65.1
	Water pipe connection	mm	DN300	DN300	DN400	DN400	DN400	DN400	DN400	DN400
Condenser	Water flow	m^3/h	741.5	812.7	877.0	943.1	1012.0	1079.0	1149.0	1223.0
	Pressure drop	kPa	72.6	72.7	63.2	63.3	64.1	64.3	64.6	64.5
	Water pipe connection	mm	DN300	DN300	DN400	DN400	DN400	DN400	DN400	DN400
Unit dimensions	Length	mm	4750	4750	5290	5290	5290	5290	5290	5290
	Width	mm	2950	2950	3300	3300	3300	3300	3300	3300
	Height	mm	2650	2650	3050	3050	3050	3050	3050	3050
Shipping weight		kg	12590	12890	19670	19990	20410	20830	21040	21360
Running weight		kg	14610	15040	24660	25120	25730	26350	26660	27120

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
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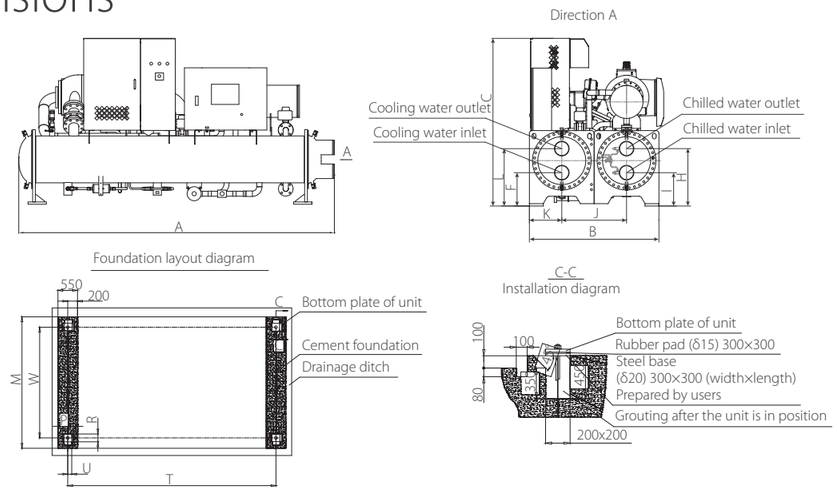
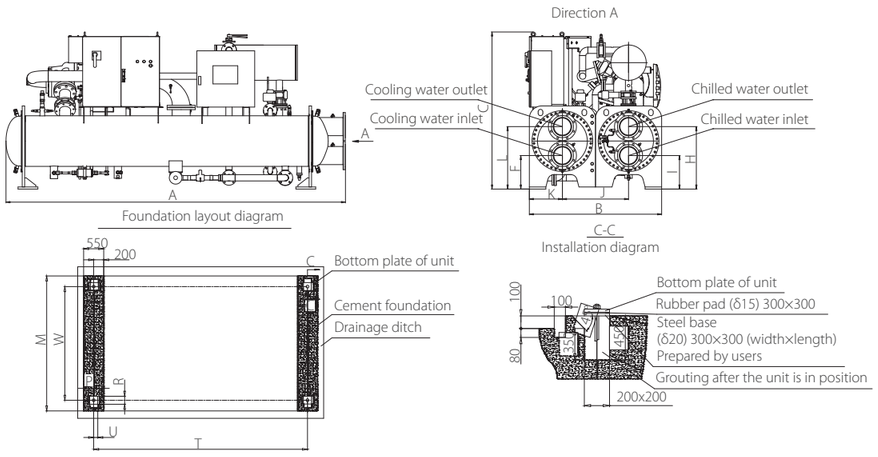
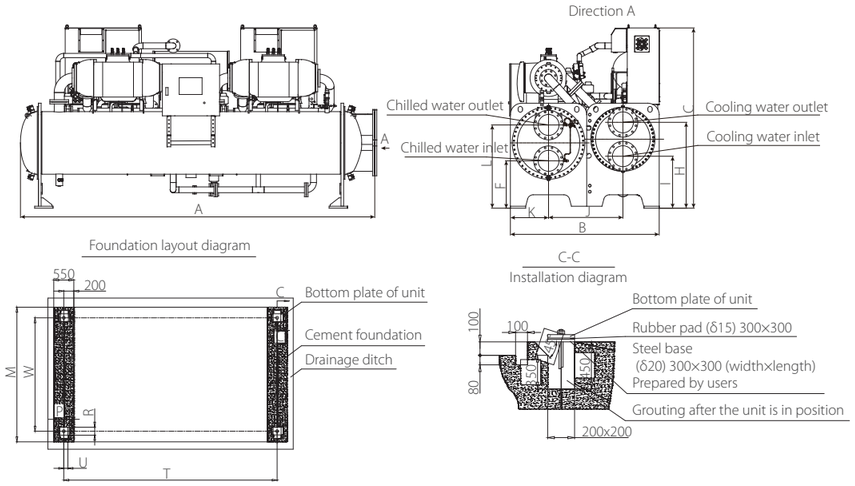
Dimensions



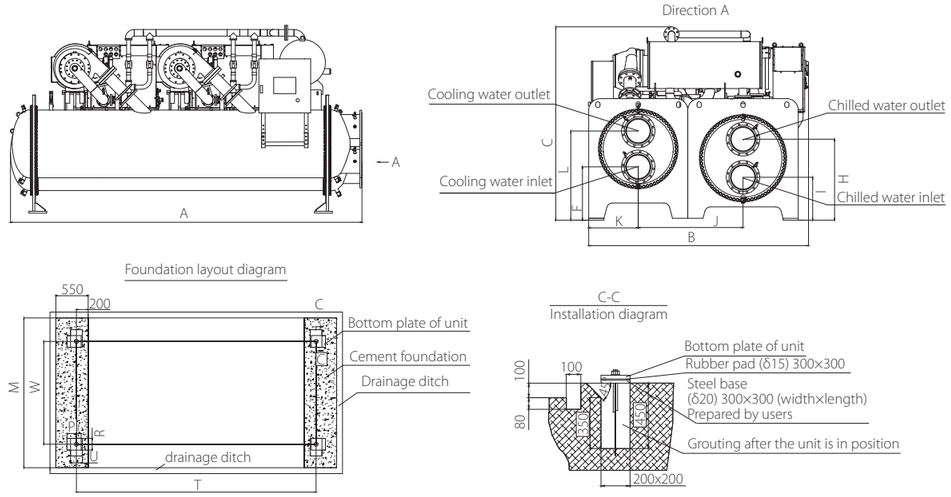
Model	Dimensions			Support						Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWG170EV	3500	1400	1800	1750	1250	200	150	100	2820	360	620	350	360	620	700	DN150	DN150
CCWG200EV																	
CCWG230EV																	
CCWG250EV																	
CCWG270EV																	



Model	Dimensions			Support						Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWG300EV	4150	1650	1850	2000	1400	240	200	100	3280	405	755	400	405	755	800	DN200	DN200
CCWG350EV																	
CCWG380EV																	
CCWG400EV	4150	1850	1950	2200	1600	240	200	100	3280	445	815	450	445	815	900	DN200	DN200
CCWG420EV																	
CCWG450EV	4700	2050	2450	2550	1750	240	200	100	3780	570	1015	475	510	980	975	DN250	DN250
CCWG500EV																	
CCWG550EV																	
CCWG600EV																	

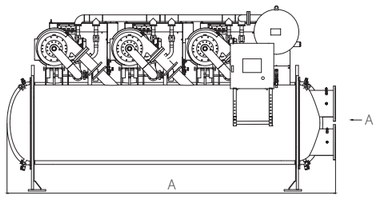


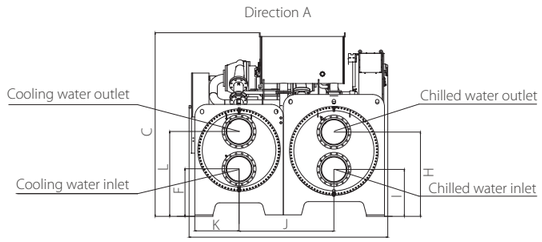
Model	Dimensions			Support						Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWG650EVD	5050	2000	2200	2550	1750	240	200	100	4080	485	945	500	535	995	975	DN300	DN300
CCWG700EVD																	
CCWG750EVD																	
CCWG800EVD																	
CCWG850EVD																	

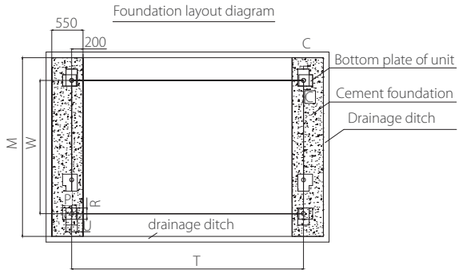


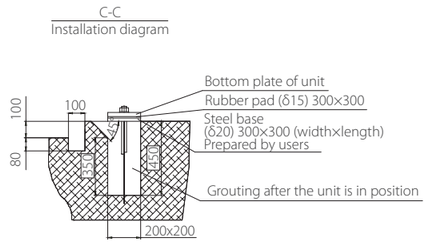
Model	Dimensions			Support						Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWG900EVD	4750	2950	2650	3150	2550	240	200	100	3780	700	1170	650	563	1063	1375	DN300	DN300
CCWG950EVD																	
CCWG1000EVD																	
CCWG1100EVD																	
CCWG1200EVD																	

Space layout









Model	Dimensions			Support						Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWG1300EVT	5290	3300	3050	3450	2850	240	200	100	4040	790	1410	735	780	1400	1575	DN400	DN400
CCWG1400EVT																	
CCWG1500EVT																	
CCWG1600EVT																	
CCWG1700EVT																	
CCWG1800EVT																	

Model	Maintenance space (mm)			
	T	Y	S	Z
CCWG170EV~CCWG270EV	1000	1200	1200	3200
CCWG300EV~CCWG420EV	1000	1200	1200	3700
CCWG450~CCWG600EV	1000	1200	1200	4200
CCWG650~CCWG850EVD	1000	1200	1200	4500
CCWG900~CCWG1200EVD	1000	1200	1200	4200
CCWG1300~CCWG1800EVT	1000	1200	1200	4500

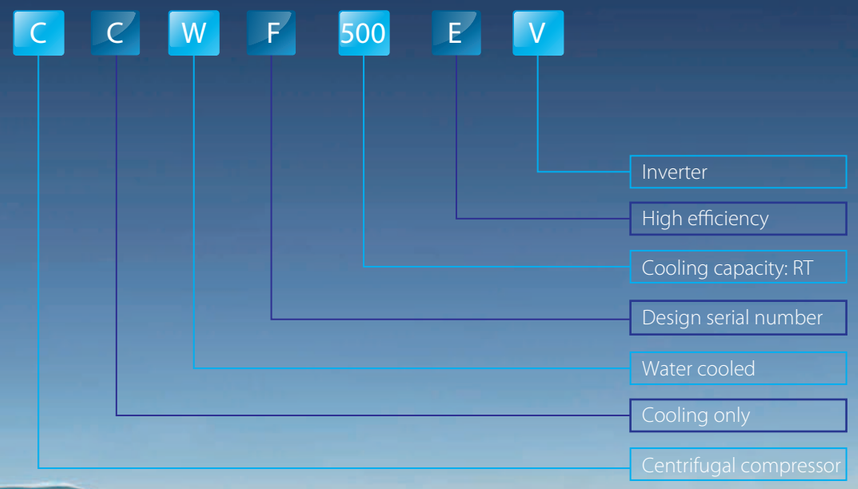
Note: Z is the tube removal space and both ends can be selected; 170 ~ 270 RT adopt a victaulic connection and 300~1800 RT adopt a flange connection.

Inverter Direct-drive Centrifugal Chiller

Overview
Unit Member
Features
Specifications
Dimensions
Options

Overview

Nomenclature



AHRI CERTIFIED® www.ahridirectory.org Water-Cooled Water Chilling and Heat Pump Water-Heating Packages AHRI Standards 550/590 and 551/591

Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Midea Commercial Air Conditioner stands on the frontier of intelligent and effective technological development on the path towards technology and product innovation. By building an internationalized R&D team, we have overcome various technical bottlenecks and first developed international-advanced core technologies such as the back-to-back uniaxial direct-drive centrifugal compression and full falling-film evaporation. The industry and users have responded positively to these technologies as applied to our new inverter direct-drive centrifugal chiller.

Benefits and Features:

Energy saving: COP up to 6.58, IPLV up to 10.72

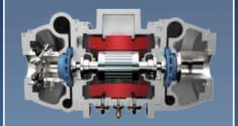
Leading technology: more than 20 patents

Eco-friendly: less refrigerant charge and lower noise

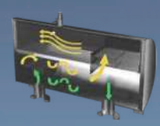
Flexibility: wider operation range but compact size

Unit Member

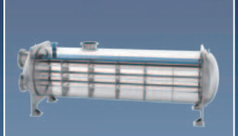
VFD panel



Back-to-back two-stage compressor



Economizer



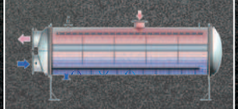
Full falling film evaporator (patented)

R134a

Eco-friendly refrigerant

Inverter motor

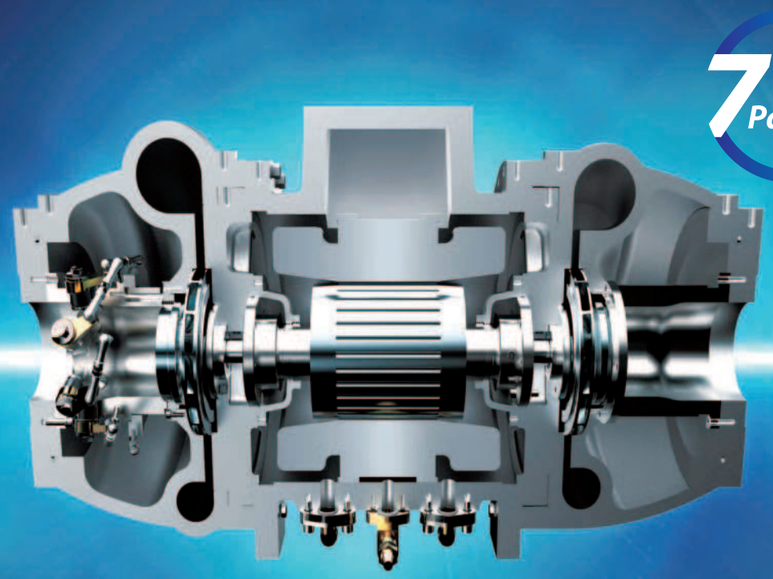
Colorful touch screen



Condenser with integral sub-cooler

Features

Back-to-back two-stage compressor



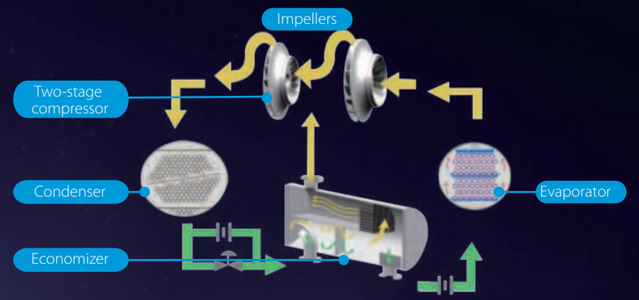
Midea inverter direct-drive centrifugal compressor adopts the patented technologies as follow:

1) Back-to-back self-balanced impeller
2) Impeller profile joint and fastening technology
3) Inlet guide vane regulating mechanism with rolling element
4) Integration design of thrust plate and rotation axis
5) Wire leading device and motor equipped with wire leading
6) A centrifugal chiller inlet guide vane correcting algorithm
7) Gas-inlet regulation mechanism and centrifugal compressor with this mechanism

Energy Saving

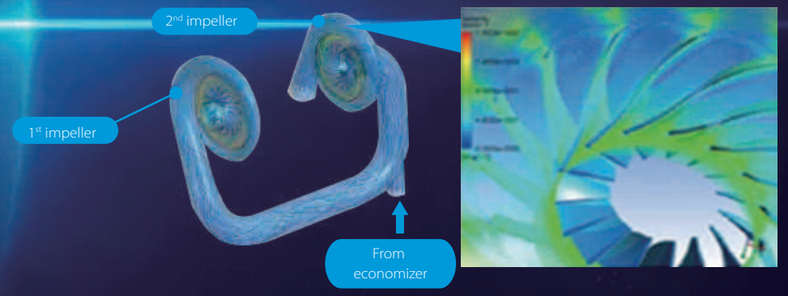
Two-stage compression

- 6% higher efficiency than single-stage compression.
- Lower speed and higher reliability.
- Unique three-stage separation economizer, reliable and effective.



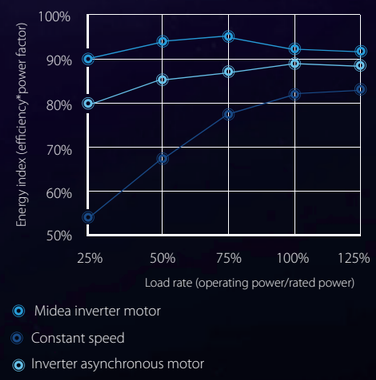
Aerodynamic compressor design

- With 3D-flow closed and strongly backward-bladed impeller design, impeller efficiency is higher than 97%.
- Unique pipeline crossover, with large backflow radius to reduce flow losses and noise.
- The technology of two-stage compression with economizer fully demonstrates the advantage of aerodynamic design and brings higher efficiency to the system.



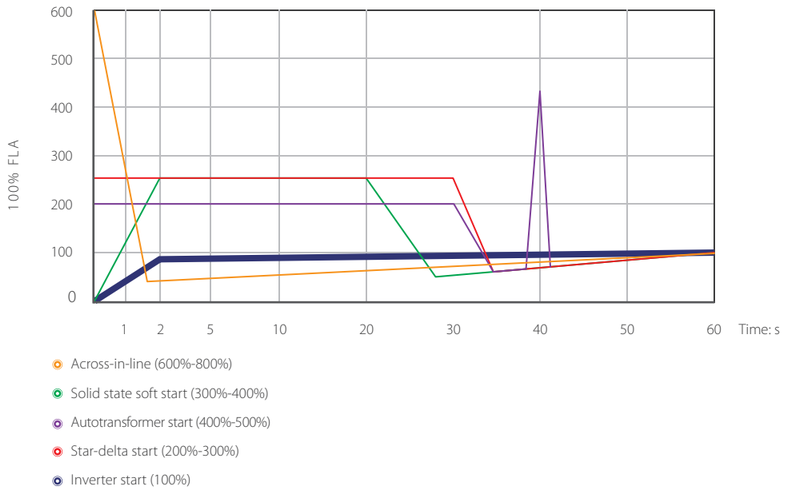
High efficiency inverter motor

- Motor efficiency as high as 95.5%, energy index (efficiency*power factor) over 2% higher than inverter asynchronous motor.
- High power density and small size, with size only 20% of AC inverter motor.
- Designed based on speed and high-frequency operation, with variable frequency range of 120~300Hz.



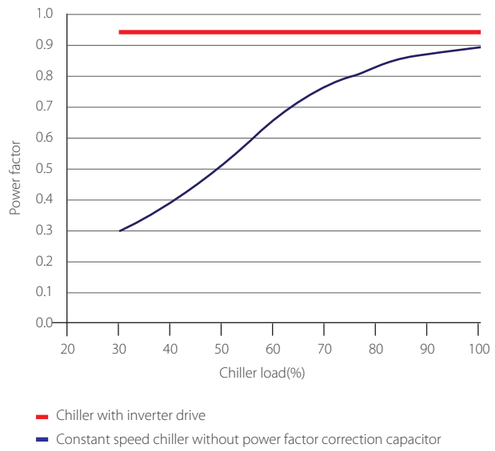
Zero in-rush current

- The unit adopts inverter starting mode, which produces zero in-rush current during the starting process and enables a stable operation from 0A to FLA.



0.95 power factor

- The high power factor eliminates the need for a power factor connection capacitor.



Leading Technology

Back-to-back two-stage compression technology

Midea back-to-back impeller

- Midea first developed the patented back-to-back compression technology with crossover pipe structure.
- Balance the thrust forces for longer life span and improved efficiency by less seal leakage and no gear loss.

Traditional serial impeller

- The traditional two-stage centrifugal impellers are arranged in serial to the same direction and the axial forces on the two impellers are from the same direction and overlapped.
- More stress on thrust bearing, cause mechanical damage and require higher reliability of bearing.

Patented IGV correcting algorithm

- Realized stable load regulating, energy saving and more comfort.
- High precision and high compatibility.
- Invented a centrifugal chiller load regulation method.

Guide vane opening correction model: B=a*sd1(t)2+b*sd1(t)+c

B: the 2nd guide vane opening

sd1(t): the 1st guide vane opening

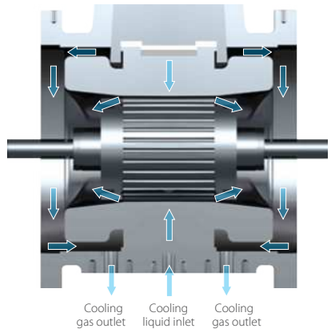
a: quadratic coefficient

b: monomial coefficient

c: constant

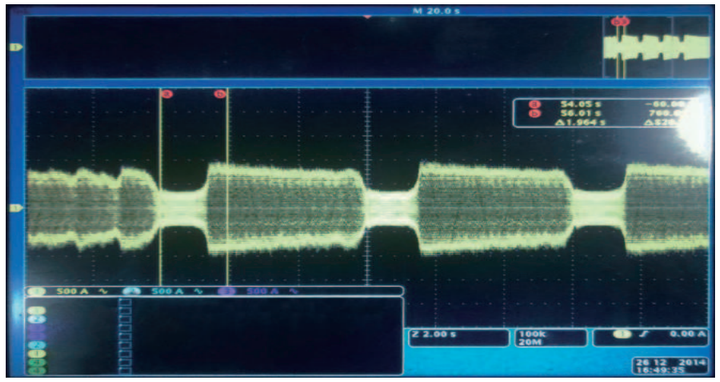
360° motor cooling technology

- The motor is cooled by the refrigerant, with liquid supply and gas return at the bottom, thus ensuring higher efficiency.
- Cooling method eliminates the potential for shaft seal leakage and refrigerant/oil loss.
- The motor adopts F-level insulation design, with three PTC temperature switches preset in the winding to ensure constant safety.



Anti-surge technology

- Extend the surge curve: real-time to adjust the motor speed in different operating conditions.
- Precise monitoring and comparison: real-time to monitor running current and comparing running current curve to current data base in the controller.

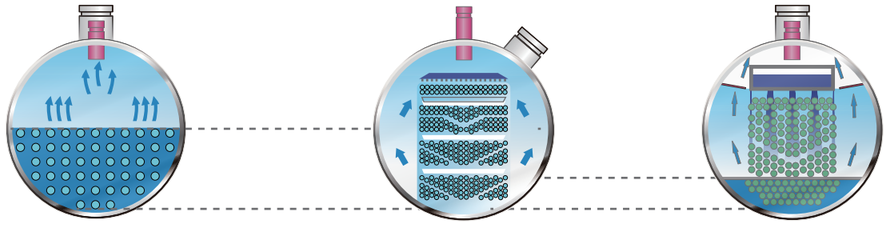


Typical current waveform in surging condition

Full falling film evaporation technology

- First created the full falling film evaporator and adopted spray technology to achieve film evaporation on the surface of the heat exchange tube, greatly increasing overall heat transfer efficiency and reducing refrigerant charge.
- The patented refrigerant distributor can improve the homogeneity of the liquid to avoid local drying, fully showcasing the performance of the heat exchange tube and increasing unit efficiency.

Patent No: 201210414053.9; 201220552298.

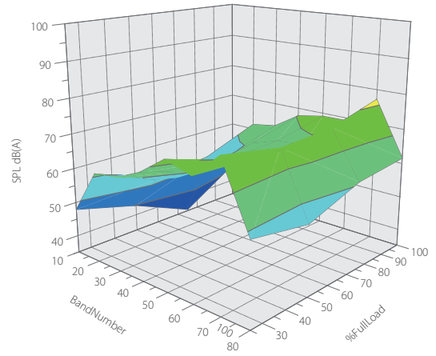


Flooded type	Midea full falling film	Falling film
Full falling film reduced refrigerant charge compared with the flooded type	Almost zero liquid level	Full falling film reduced refrigerant charge compared with the falling film type

Eco-Friendly

Quieter operation

Midea inverter direct-drive centrifugal chiller is the quietest chiller in its size range with sound pressure ratings as low as 78 dB(A) as per AHRI Standard 575. That makes it ideal for sound sensitive environments such as schools, performance halls, museums, condominiums and libraries.



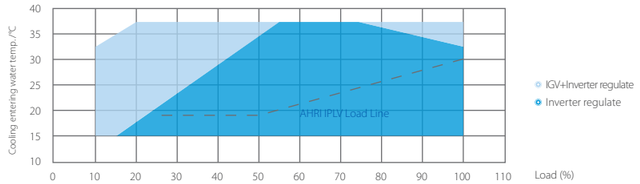
- LEED

R134a refrigerant has zero ozone depletion potential and has no elimination cycle for now. Full falling film technology reduces refrigerant charge which enables to qualify for maximum leadership in Energy and Environmental Design®(LEED) points for Enhanced Refrigerant Management. And with the chiller' s high efficiency, you can also earn additional points for credits from Optimized Energy Performance (EAc1).

Flexibility

Wide operation map

- Only inverter regulation on AHRI condition to save energy.
- Capacity load from 10%~100% and cooling EWT up to 37 ℃ are able to satisfy the application requirement of multiple operating conditions (load from 10%-20% need hot gas bypass).



Compact size

Compact size is ideal for retrofit as well as small installation space project. The space savings can add up as quickly as the energy savings.

Specifications

Model		CCWF	250EV	300EV	350EV	400EV	450EV	500EV	550EV
Cooling capacity		RT	250.0	300.0	350.0	400.0	450.0	500.0	550.0
		kW	879.0	1055	1231	1406	1582	1758	1934
		10^4kcal/h	75.59	90.71	105.8	121.0	136.1	151.2	166.3
Power input		kW	139.5	163.2	190.2	221.0	244.4	273.2	306.1
COP		W/W	6.301	6.464	6.471	6.364	6.474	6.434	6.318
IPLV		W/W	9.789	10.07	10.05	10.57	10.72	10.62	10.66
Motor configuration power		kW	200.0	200.0	240.0	280.0	280.0	315.0	350.0
Rated current		A	227.6	266.3	310.4	360.6	398.7	445.9	498.9
Max. operating current		A	250.4	292.9	341.4	396.7	438.6	490.5	548.8
Locked-rotor current		A	1523	1523	1883	2603	2603	2985	3338
Evaporator	Water flow	m^3/h	135.8	163.0	190.1	217.3	244.4	271.6	298.8
	Pressure drop	kPa	43.3	43.2	43.6	42.9	43.2	42.4	44.0
	Water pipe connection	mm	DN200	DN200	DN200	DN250	DN250	DN250	DN250
Condenser	Water flow	m^3/h	169.4	202.5	236.3	270.6	303.7	337.7	372.3
	Pressure drop	kPa	50.3	49.5	49.1	51.3	52.1	53.0	53.0
	Water pipe connection	mm	DN200	DN200	DN200	DN250	DN250	DN250	DN250
Unit dimension	Length	mm	3650	3650	3650	3650	3650	3650	3650
	Width	mm	1940	1940	1940	2000	2000	2000	2000
	Height	mm	2150	2150	2150	2150	2150	2150	2150
Shipping weight		kg	5030	5180	5330	6150	6300	6450	6600
Running weight		kg	5580	5780	5980	6730	6930	7130	7330

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft2-°F/Btu (0.0176m^2. °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft2-°F/Btu (0.0440m^2. °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWF	600EV	650EV	700EV	750EV	800EV	850EV	900EV	950EV	1000EV	1100EV	1200EV	1300EV
Cooling capacity		RT	600.0	650.0	700.0	750.0	800.0	850.0	900.0	950.0	1000	1100	1200	1300
		kW	2110	2285	2461	2637	2813	2989	3164	3340	3516	3868	4219	4571
		10^4kcal/h	181.4	196.6	211.7	226.8	241.9	257.0	272.2	287.3	302.4	332.6	362.9	393.1
Power input		kW	331.3	357.2	378.0	407.5	442.1	460.6	482.2	513.3	538.9	591.8	641.7	697.9
COP		W/W	6.367	6.397	6.511	6.471	6.362	6.488	6.563	6.507	6.525	6.535	6.575	6.549
IPLV		W/W	9.313	9.628	9.992	10.17	10.20	10.16	10.37	10.40	10.56	10.36	10.57	10.69
Motor configuration power		kW	400	400	450	450	500	560	560	560	630	700	700	800
Rated current		A	541.3	583.6	617.6	665.7	722.3	752.6	787.7	838.6	880.3	966.9	1048	1140
Max. operating current		A	613.1	658.9	696.0	745.8	801.6	850.4	888.6	945.5	991.7	1089	1181	1282
Locked-rotor current		A	3281	3281	3905	3905	4864	6495	6495	6495	6246	6638	6638	6955
Evaporator	Water flow	m^3/h	325.9	353.1	380.3	407.4	434.6	461.7	488.9	516.1	543.2	597.5	651.9	706.2
	Pressure drop	kPa	53.8	52.2	58.6	56.1	60.1	56.2	62.4	54.5	58.4	57.0	57.0	56.0
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Condenser	Water flow	m^3/h	404.3	437.9	470.6	504.7	539.7	572.2	605.2	639.8	673.3	740.7	807.5	875.1
	Pressure drop	kPa	51.4	54.5	51.0	55.1	54.7	55.2	58.9	53.4	55.6	52.6	53.4	58.0
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Unit dimension	Length	mm	4700	4700	4700	4700	4700	4750	4750	4750	4750	4800	4800	4800
	Width	mm	2050	2050	2050	2050	2050	2200	2200	2200	2200	2300	2300	2300
	Height	mm	2750	2750	2750	2750	2750	2900	2900	2900	2900	3050	3050	3050
Shipping weight		kg	9060	9120	9330	9410	9490	10665	10690	11050	11050	13320	13520	13650
Running weight		kg	10650	10740	11030	11210	11330	12785	12815	13350	13350	16080	16395	16610

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft2-°F/Btu (0.0176m^2. °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft2-°F/Btu (0.0440m^2. °C/kW).
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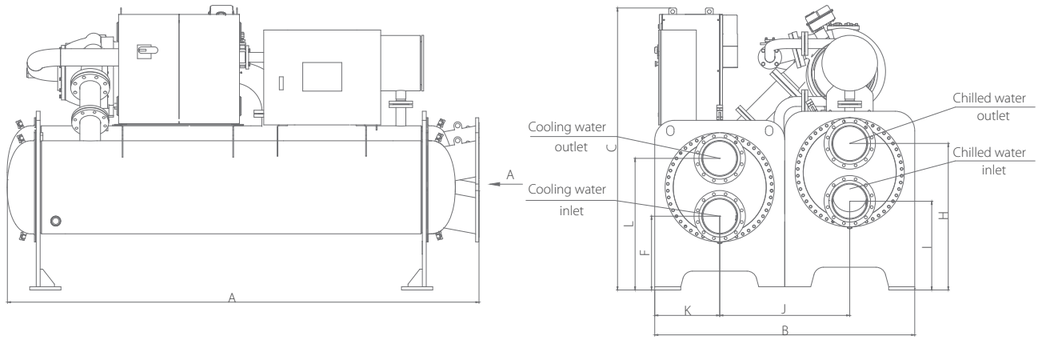
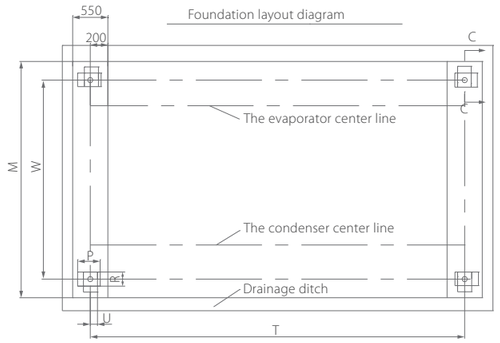
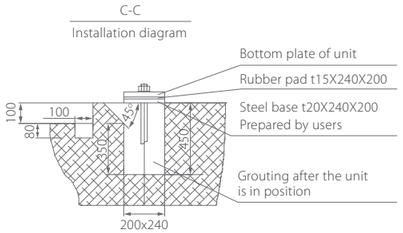
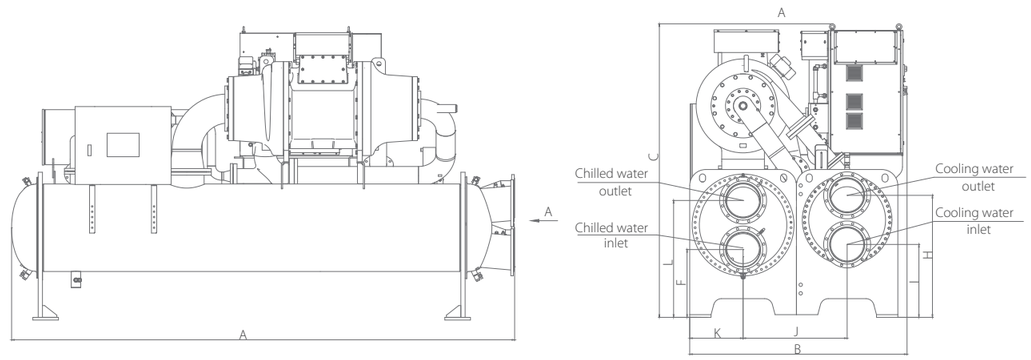
Dimensions

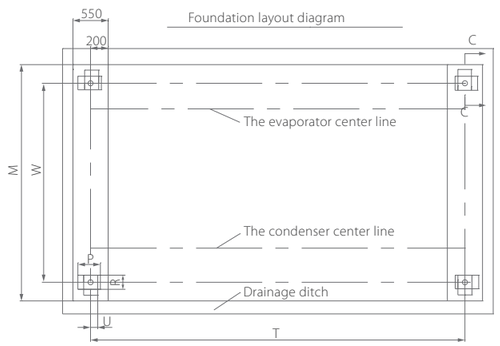


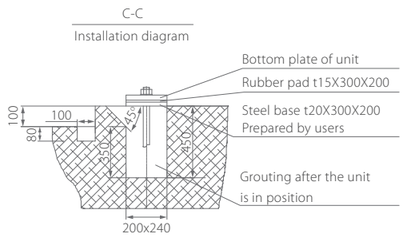




Model	Dimensions			Support						Pipe locate position					
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
CCWF250EV	3650	1940	2150	2240	1740	240	200	100	2780	515	865	485	630	980	970
CCWF300EV															
CCWF350EV															
CCWF400EV	3650	2000	2150	2300	1800	240	200	100	2780	567	1013	500	682	1128	1000
CCWF450EV															
CCWF500EV															
CCWF550EV															







Model	Dimensions			Support						Pipe locate position					
	Length (A)	Width (B)	Height (C)	M	W	P	R	U	T	F	L	K	I	H	J
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
CCWF600EV	4700	2050	2750	2550	1750	240	200	100	3780	635	1095	500	683	1143	975
CCWF650EV															
CCWF700EV															
CCWF750EV															
CCWF800EV															
CCWF850EV	4750	2200	2900	2750	1950	240	200	100	3780	710	1180	550	765	1225	1075
CCWF900EV															
CCWF950EV															
CCWF1000EV															
CCWF1100EV	4800	2300	3050	2860	2060	240	200	100	3780	720	1220	593	785	1255	1130
CCWF1200EV															
CCWF1300EV															

Space layout

Model	Maintenance space (mm)			
	T	Y	S	Z
CCWF250EV	1000	1200	1200	3200
CCWF300EV				
CCWF350EV				
CCWF400EV				
CCWF450EV				
CCWF500EV				
CCWF550EV				
CCWF600EV	1000	1200	1200	4500
CCWF650EV				
CCWF700EV				
CCWF750EV				
CCWF800EV				
CCWF850EV				
CCWF900EV				
CCWF950EV				
CCWF1000EV				
CCWF1100EV				
CCWF1200EV				
CCWF1300EV				

Note: Z is the tube removal space and both ends can be selected.

Options

Items	Standard	Optional
Power supply	380V-3Ph-50Hz	380~460V, 50/60Hz
Water inlet/outlet connection type	Flange	×
High pressure water box	1.0MPa	1.6MPa, 2.0MPa
Marine water box	×	√
Anti-vibration	Rubber pad	Spring isolator
Vessel code	GB	ASME, PED
Heat recovery	×	√
Chilled water Delta T	5℃	6℃~11℃
Centrifugal heat pump	×	Hot water temperature up to 45℃
Water storage	×	√
Communication protocol	Modbus-RTU (RS485)	BACnet IP, BACnet MS/TP (RJ-45 port)
Hot gas bypass	×	√
Flow switch	Differential pressure	×
Knockdown shipment	×	√
Witness performance testing	×	√
Midea Chiller Plant Control	×	√
Midea Smart Cloud platform	×	√
QuickView	×	√
Tube automatic cleaning system	×	√
Low total harmonic current distortion rate (THDI)	≤35% (full load)	≤5% (full load)

Note: For other options, please contact with our engineers.

High Efficiency & Super High Efficiency Centrifugal Chiller

Midea Chiller has a complete product lineup and a wide application range to meet varied customer requirements. In 2013, Midea launched the full falling film two-stage compression centrifugal chiller. In 2019, 2300~3000RT water cooled centrifugal chiller is specially designed for district cooling applications. The unit can be widely used in large temperature difference applications and large-scale public buildings including factories, airports, exhibition halls, grand theaters etc. 2300~3000RT units are one two-stage compressor centrifugal chillers. 4600-6000RT units are two two-stage compressor centrifugal chillers arranged in series counterflow. With patented heat exchange technology, the refrigerant charge amount is reduced. This innovation protects our environment and decreases CO_2 emissions significantly.

Mechanical Specification

Features

Parts Introduction

High Efficiency Series

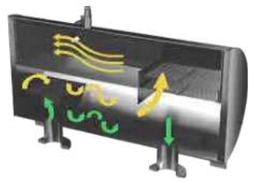
Super High Efficiency Series

Series Counterflow Layout Diagram

Starter Panel Dimensions

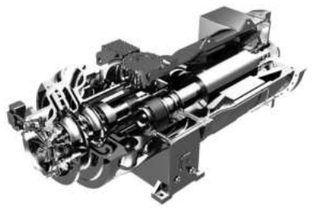
Options

Mechanical Specifications



Economizer

Unique three stage separation economizer, reliable and effective.

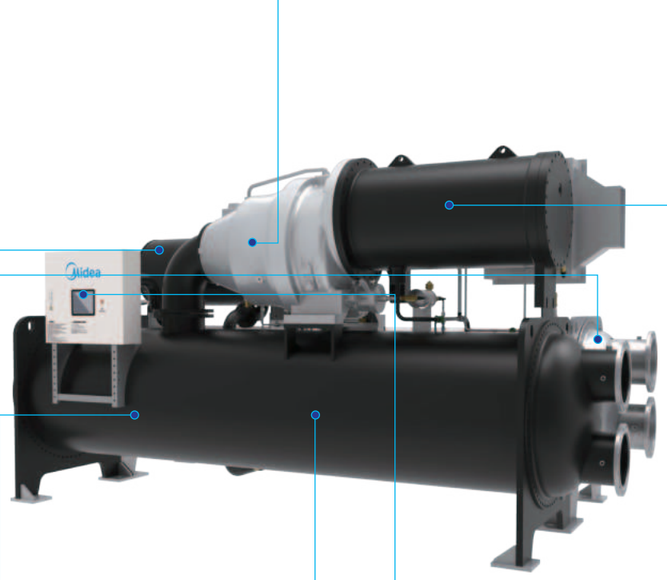


Semi-hermetic centrifugal compressor

Aerodynamic technology, higher efficiency.

Enclosed motor

Good cooling effect, no heat dissipation in the machine room, high reliability.



Condenser

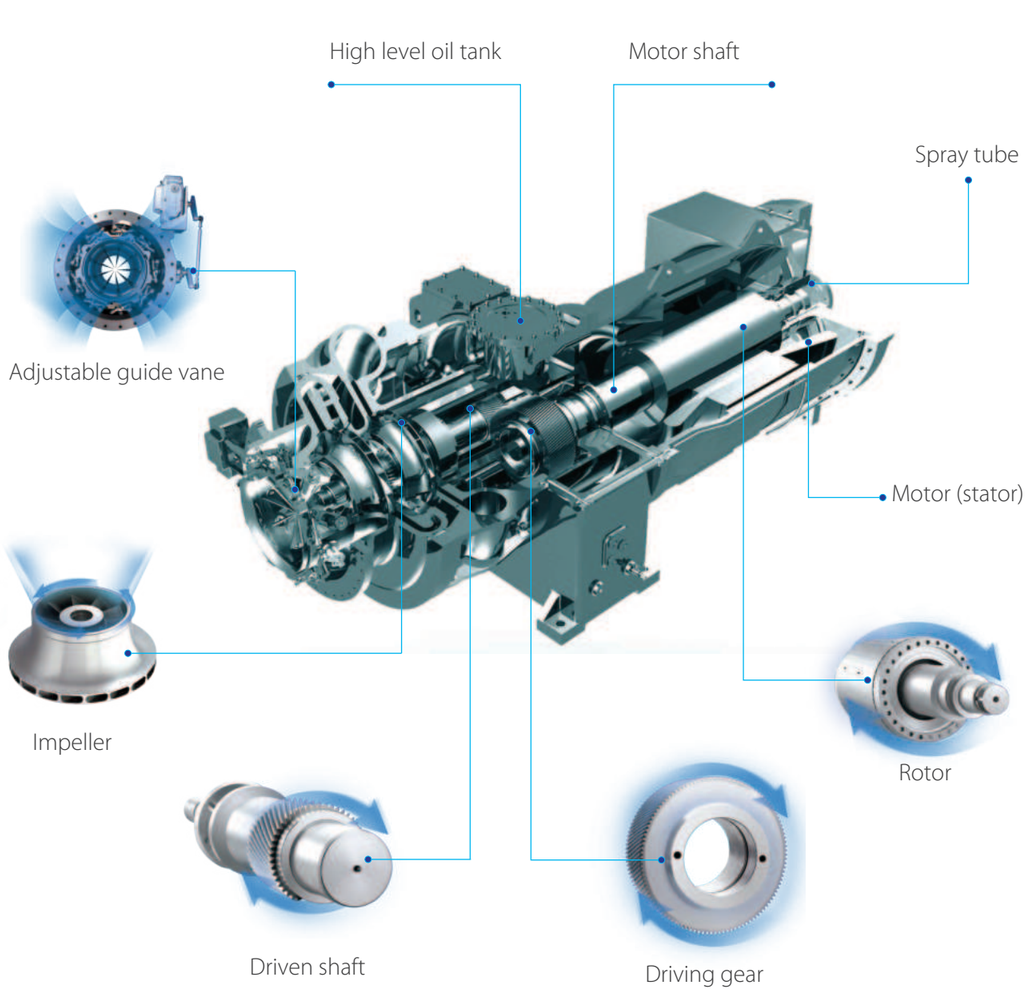
With integral sub-cooler.

Full falling film evaporator

Reduced refrigerant charge.

Eco-friendly refrigerant

Colorful touch screen



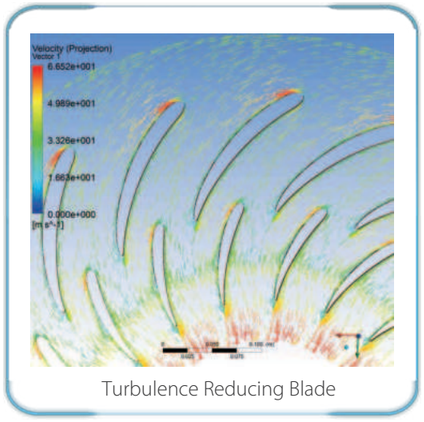
Features

Explore the Frontier of Aerodynamic Technology

Full Flow Pass Optimization increases efficiency.
The newly designed 3D flow impeller, coupled with the optimized volute, ensures flow velocity and maximizes efficiency.

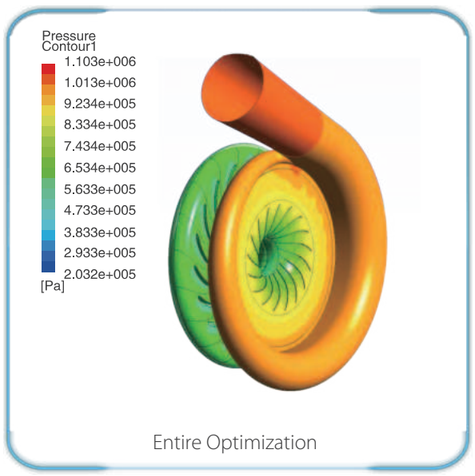
High Efficiency 3D Flow Impeller

The newly designed high efficiency 3D flow alloy impeller is produced at a German GMD 5-axis machine center. It benefits from high machine precision and 30% reduced impeller thickness, thus reducing the axial force loss and separation loss.



Turbulence Reducing Blade

Aerodynamic loss balance design reduces the aerodynamic noise.



Entire Optimization

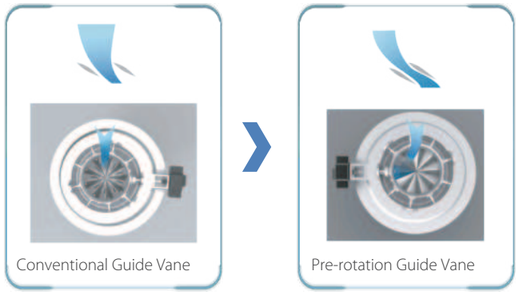
The gas flow perfectly matches the interior flow channel, reducing the loss of impact.

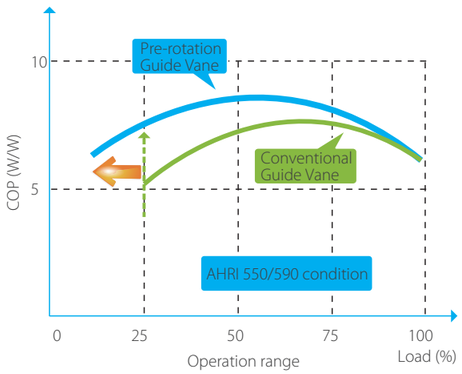
Volute

The volute is designed perfectly suitable to the impeller. The optimized flow pass can ensure the uniform distribution of flow velocity, contributes to higher efficiency.

Pre-rotation Guide Vane Technology

The compressor is equipped with an airfoil shaped pre-rotation guide vane, which produces rotation under different load conditions, thus extending the operation range and increasing part load efficiency.





Two-stage Compression Technology

6% higher efficiency than single-stage compression.
Lower speed and higher reliability.
Unique three stage separation economizer, reliable and effective.

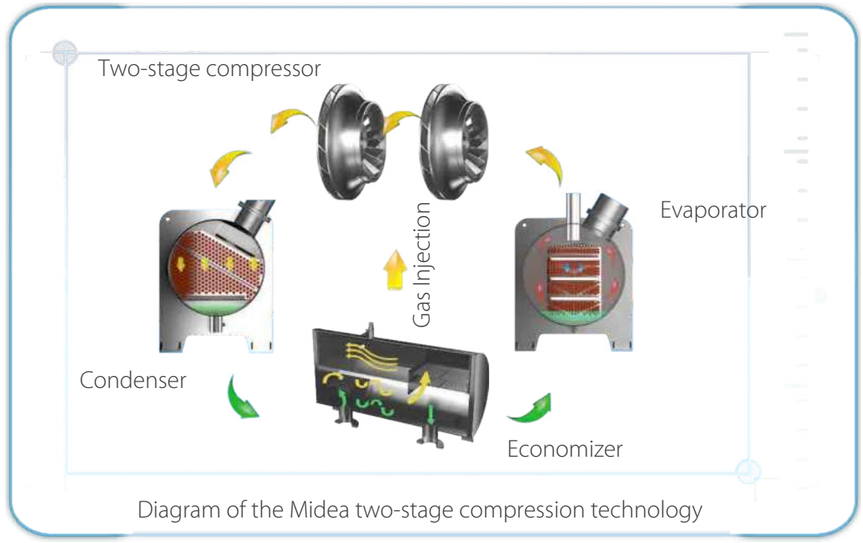


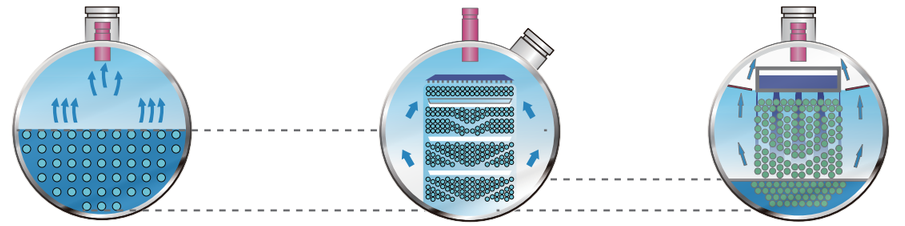
Diagram of the Midea two-stage compression technology

Unique Heat-exchanging Technology

❖ Full falling film evaporator

First created the full falling film evaporator and adopted spray technology to achieve film evaporation on the surface of the heat exchange tube, greatly increasing overall heat transfer efficiency and reducing refrigerant charge.
The patented refrigerant distributor can improve the homogeneity of the liquid to avoid local drying, fully showcasing the performance of the heat exchange tube and increasing unit efficiency.

Patent No: 201210414053.9; 201220552298.



Flooded type

Full falling film reduced refrigerant charge compared with the flooded type

Midea full falling film

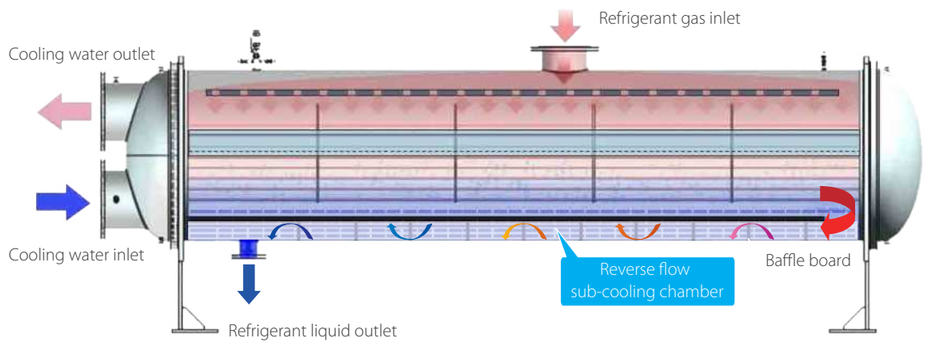
Almost zero liquid level

Falling film

Full falling film reduced refrigerant charge compared with the falling film type

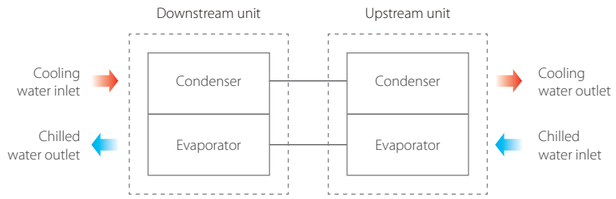
❖ Condenser

The highly efficient heat-exchanger and optimized structure enhance heat exchange performance. The design of a reverse flow sub-cooling chamber with multiple turbulence increases the sub-cooling level and improves performance.



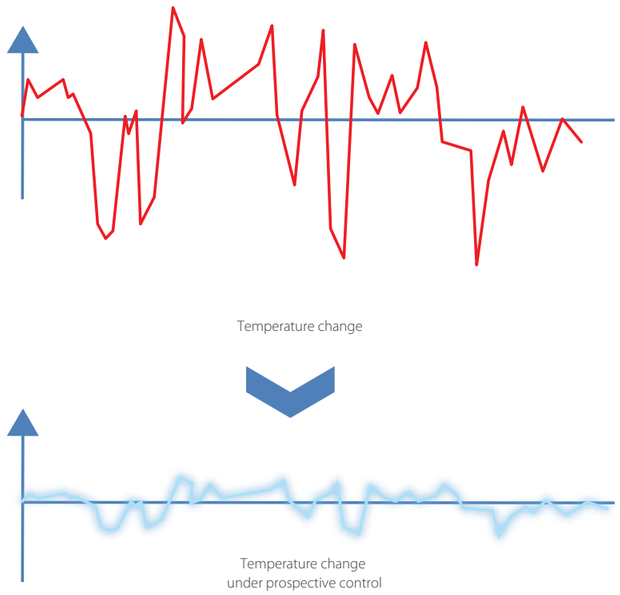
Series Counterflow

Series counterflow arrangement provides the advantage of having a compact size, without the need for extra components such as pipings, valves, pumps etc. The result is lower installation cost and less space required.

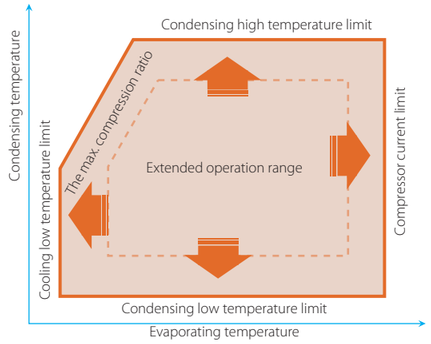


Prospective Control Logic

The microcomputer control system's features include trend prediction, self-diagnosis, self-adjustment and safety protection. Capable of predicting real load changes according to target values and load level history, the system can modify the operating load and prevent energy waste.



▼ Operation range



Eco-friendly

❖ Low noise and vibration

The unit is the quietest chiller in its size range with sound pressure ratings as low as 85 dB(A) as per AHRI Standard 575. A coin can be balanced on the edge of the compressor-motor assembly. This demonstrates the extremely low vibrations generated by the unit.

❖ LEED

R134a refrigerant has zero ozone depletion potential and has no elimination cycle for now. Full falling film technology reduces refrigerant charge which enables to qualify for maximum leadership in Energy and Environmental Design®(LEED) points for Enhanced Refrigerant Management. And with the chiller' s high efficiency, you can also earn additional points for credits from Optimized Energy Performance (EAc1).

Reliable Quality

100% run-tested in the factory, high R&D investment and strict requirements on product quality ensure the high reliability of the product.

❖ 4000RT water cooled chiller performance testing lab

The 4000RT water cooled chiller performance testing lab is one of the most advanced testing facilities in the world. The 4000RT water cooled chiller performance testing lab is one of the most advanced testing facilities in the world. It can simulate all chiller running conditions such as the Chinese National standard testing conditions (7°C/12°C, 30°C/35°C), the typical of the Chinese industry testing conditions (7°C/12°C, 32°C/37°C) and the AHRI testing conditions (6.67°C/12.22°C, 29.44°C/34.61°C). Besides, it can cover the most harsh testing conditions in the Middle East region (the chilled water temperature range from 3°C to 50°C and cooling water temperature range from 10°C~60°C), which is far beyond the actual running conditions in the Middle East region (13.33°C/4.44°C, 35°C/41.5°C). It provides precise testing data for the IPLV and NPLV calculation. The testing can cover all main kinds of power supply worldwide. Every chiller is tested with all kinds of necessary conditions before shipping.

The establishment of this lab further expands Midea's testing capability of large tonnage chiller and further strengthens Midea's international leading position in the whole industry.

❖ The independent room for compressor assembly

The centrifugal chiller compressor assembly room is a clean and constant temperature control space. The core components for the compressor will be installed and tested here (the motor, gear, bearing, shaft, impeller etc). Dynamic testing for high speed rotation part will be performed in the assembly room.

Wide application

The Midea centrifugal chiller with a “wide range” compression ratio design works efficiently in a variety of conditions. These include large temperature difference with low water flow rate systems, variable primary flow systems, standard water source or groundwater systems and ice storage systems. In large projects, it is possible to minimize the initial investment and floor space by using large capacity chillers.

Long lifespan

Keyless impeller coupling and patent design reduce mechanical losses. Well-known brand parts ensure stable operations and improve reliability, stability and service life.

Parts introduction

Advanced design platform improves the performance of impeller, volute and other key components of Midea centrifugal chillers, raising the isentropic efficiency of compressors up to 88.2%, increasing efficiency as well as the stability.

Compressor

The centrifugal compressor adopts high-strength fully shrouded aluminum alloy impellers and a moveable inlet guide vane. The enclosed type impeller is designed for balanced thrust. It is dynamically balanced and overspeed-tested for smooth, vibration free operations. The airfoil-shaped inlet guide vane minimizes flow disruption for efficient part-load performance. The movement of the inlet guide vane is controlled by a mounted electric actuator that responds to the refrigeration load of the evaporator. The rotor assembly consists of a high-strength, heat-treated alloy steel drive shaft, guaranteeing strength and reliability.

Motor

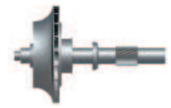
The Midea centrifugal chiller uses a semi-hermetic two-pole motor that is cooled by circulating refrigerant. Winding embedded sensors provide positive thermal protection for the motor. The asynchronous squirrel cage type motor achieves high operating performance and a long life span. The refrigerant cooled motor keeps motor heat out of the mechanical room and decreases vibrations and shaft seal maintenance compared with open motors. Refrigerant cooled motors have lower inrush currents and lower operating noise than the open motor, which is air cooled. Additional ventilation is not necessary. The motor is bolted to the compressor gear housing. The shaft labyrinth seal prevents refrigerant from leaking the motor to the gear box. The low-voltage motor provides six terminals for reducing the starting voltage (wye-delta or auto transformer start). The high-voltage motor provides three terminal posts for full voltage (across the line). Motor terminal pads are supplied. The terminal board is protected by a steel terminal box.

Impeller and Inlet Guide Vane

The high-strength aluminum-alloy compressor impellers feature reversed -curved vanes for high efficiency. The airfoil-shaped inlet guide vanes minimize flow disruption for efficient part-load performance. Precisely positioned and tightly fitted, it allows the compressor to unload smoothly from 10% to 100% load output guaranteeing smooth operations under real conditions. Movement is controlled by a mounted electrical operator that responds to refrigeration load on the evaporator. Impellers are made from high-strength aluminum alloy, which is tested at 125% of the designed operating speed.

Keyless Impeller Coupling

The impeller and main shaft are coupled by keyless connection. This eliminates stress concentration on the power transmission surface, greatly increasing the service life of the impeller. Since there is no friction, the efficiency is higher than the traditional key coupling. This unmatched mechanical design received an award from the State Intellectual Property Office of P.R.China. (Patent No.ZL 01 2 56825.2).



Precise Gearing

The specially engineered, single helical gear with crowned teeth keep multiple teeth in contact at all times to provide even distribution of the compressor load and quiet operation. Gear tooth surfaces are case hardened and precision ground, which can reach class 5. Gears are integrally assembled in the compressor rotor support and are lubricated with oil. Each gear is individually mounted on its own journal and thrust bearings to isolate gears from the impeller and motor forces. The double layer soundproof compressor design prevents gear contact noise from escaping.

Bearings

The motor is suitable for journal bearings to handle the radial load, axial load and drive speed. The slide bearing base has an embedded babbitt alloy covering that is softer than the main shaft, which protects the shaft if a fault occurs. The high-tech oil film lubrication design keeps the bearing and shaft minimizing contact, eliminating friction.

Lower Sound Levels and Vibration

The specially engineered gearing, double soundproof gearbox structure, optimized impeller and tunnel design ensure our chillers achieve lower sound levels. A gear-driven compressor runs at higher impeller rotational speeds but tends to have less vibration than the larger, much heavier, direct drive units.

Condenser Baffle

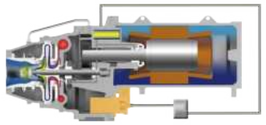
The baffle prevents direct impingement of high velocity compressor gas onto condenser tubes. This eliminates vibration and wears on the tubes and distributes refrigerant flow evenly over the length of the condenser, thus increasing efficiency.

Advanced Capacity Adjustment

The inlet guide vanes work with moveable diffusers , resulting in a stepless capacity range from 10% to 100% and is free of surges. The Inlet Guide Vane (IGV) is controlled by an actuator, which is directly run by the PLC. This technology was awarded a patent by the State Intellectual Property Office of P.R.China. (Patent No.ZL01 2 56824.4).

Reliable Lubrication System

The lubrication system consists of an internal oil sump with oil heaters, positive displacement oil pump, brazed plate oil cooler and oil return line. The high-position oil sump supplies oil to the gear surface for lubrication, preventing gear wear if a sudden power loss occurs.



Marvelous Oil Cooler

A plate-type oil cooler is mounted in the factory on the side of the compressor. An external oil filter and oil cooler simplifies maintenance and filter replacement. Replacing the oil filter or oil cooler can be completed after the isolation valve in the pipe line is closed.

Unmatched Oil Reclaim System

When the chiller unit is running, a small amount of lube may interfuse with the refrigerant. The Midea patented oil reclaim system is designed to return the oil from the heat exchanger back to the oil tank. Improving the refrigerant purity, therefore increasing thermal exchange efficiency and supplying sufficient oil to compressor.

Low Inrush Current

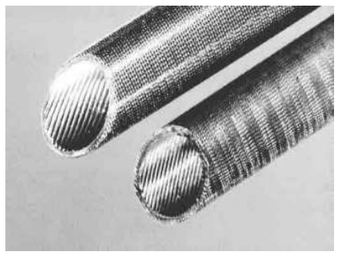
The standard starter for the Midea centrifugal chiller is popular for centrifugal chiller applications; i.e., the wye-delta starter. The motor windings first connect in a “wye” configuration to reduce inrush current to 33.3% of locked rotor amps, producing 33.3% of the normal starting torque. After a brief delay (transition time), the electrical load is momentarily transitioned to resistance, while the motor windings are changed to the “delta” configuration. The resistance minimize the second inrush current when the delta configuration becomes active. The soft start and VFD are also available for various applications.

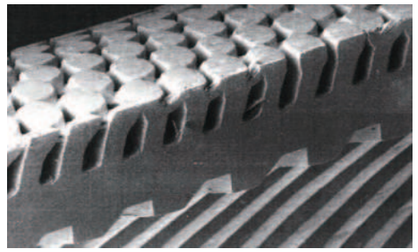
100% Factory Testing

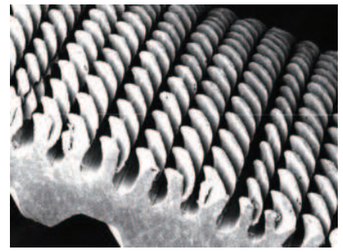
After assembly, the unit will go through a complete performance test in the test center. The benefits of performance testing include verifying performance, preventing operating problems and assurance of smooth start-up. A chiller that has been tested is fully operational and performance proven.

Heat Exchanger Tube

High-efficiency, externally and internally enhanced heat exchanger tubes provide optimum performance. Tubes in both the evaporator and condenser are 1" O.D. with an internal and external surface made from copper alloy. This provides extra wall thickness (up to twice as thick) and non-work hardened copper at the support location, extending the life span of the heat exchanger. Each tube is expanded by roller into the tube sheets, providing a leakproof seal. The tubes are individually replaceable. Copper alloy comes as standard and is 90/10 copper-nickel. 304 stainless steel or titanium can be customized.





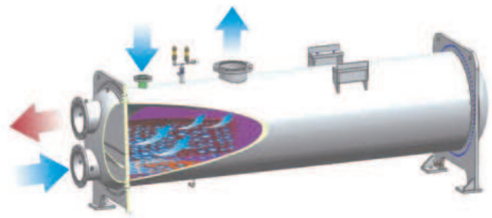


Evaporator

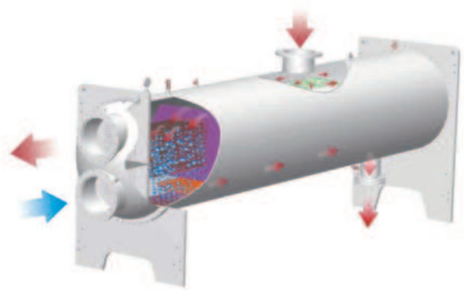
The evaporator is a shell and tube-type heat exchanger. A flow equalizer uniformly distributes refrigerant over the entire tube length to optimize heat transfer. The evaporator shell contains a dual refrigerant relief valve arrangement set at 185 PSIG (1280 kPa) or a single-relief valve arrangement. The intermediate tube support sheets positioned along the shell axis prevent relative tube motion. The waterside is hydraulic tested at 1.25 x the maximum working pressure.

Condenser

The condenser is the shell and tube type that includes a discharge gas baffle for preventing direct high velocity gas impingement on the tubes. The baffle is also used to distribute the refrigerant gas flow properly for the most efficient heat transfer. An integral sub-cooler is located on the bottom of the condenser shell, providing highly effective liquid refrigerant subcooling, giving the highest cycle efficiency. Two-stage compression using the economizer can improve efficiency by 5% to 8%. The condenser contains a refrigerant relief valve sets at 1.6MPa. Standard maximum waterside working pressure is 1.0MPa. The waterside is hydraulic tested at 1.25 x the maximum working pressure.



Evaporator



Condenser

Water Box

The removable water boxes are fabricated from steel. The design working pressure is 150 PSIG (1034 kPa) and the boxes are tested at 187.5 PSIG (1292.5 kPa). Integral steel water baffles are located and welded within the water box to provide the integrity required to pass test conditions. The nozzle connections are suitable for flanges and are capped when shipped. Plugged 1" drain and vent connections are provided in each water box.

Orifice

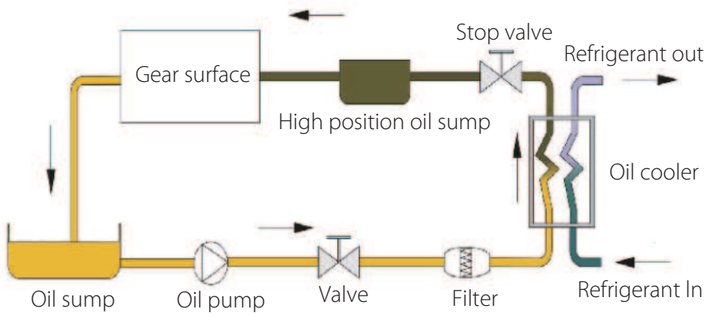
There are three refrigerant control devices used in the industry: electrical expansion valves, fixed orifices and float systems. Midea high efficiency series uses the fixed orifice without any moving parts, increasing reliability. The super high efficiency series is equipped with the orifice as well as liquid level control technology to improve the efficiency of partial loads. These matches ensure that the chiller works stably in any working situation and improves IPLV and NPLV significantly.

Control Panel

Midea adopts the state-of-the-art microprocessor control system with a durable 10.4-inch LCD touch screen. The LCD touch screen features graphical display of chiller parameters, so fast and easy access make operation relatively simple. It also can communicate with the user's PC and enable the remote control of start/stop and the cooling system. More than 30 protection features are used to make the chiller's operations secure and reliable. The latest 10 failure reports can be recorded for querying.

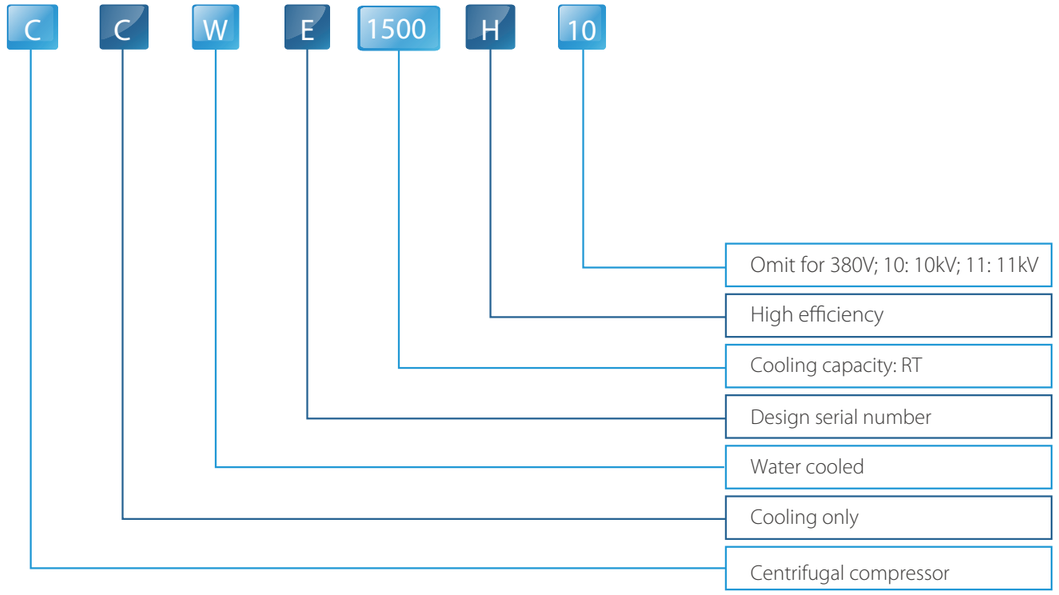
Lubrication System

A separately driven electric oil pump assembly supplies lubricant to the compressor at the correct temperature and pressure. After filtration the oil is sent to the oil cooler after adjusting. After adjusting its pressure, it is transferred to the bearings. Specially designed seals are installed on the inner side of motor bearings at both ends to minimize lubricant from leaking into the main motor and prevent contamination of the R134a in the evaporator. An electric heater is used inside the oil tank to maintain suitable oil temperature all the time. Oil temperature is thus maintained in the event of a compressor shutdown. This prevents R134a gas from entering the oil and decreasing lubrication efficiency. While the compressor is shut down, it is necessary to keep the oil heater on to maintain the oil at a certain temperature. If the compressor falls out of service for an extended period of time, running the oil heater is still required.



High Efficiency Series

Nomenclature



Specifications

Model		CCWE	500H	550H	600H	650H	700H	750H	800H
Cooling capacity		RT	500	550	600	650	700	750	800
		kW	1758	1934	2110	2285	2461	2637	2813
		10^4kcal/h	151.2	166.3	181.4	196.6	211.7	226.8	241.9
Power input		kW	286.2	314.8	343.6	372.0	401.8	430.0	458.7
COP		W/W	6.143	6.142	6.140	6.144	6.126	6.132	6.132
IPLV		W/W	6.718	6.698	6.706	6.739	6.813	7.153	7.092
Motor configuration power		kW	490.0	490.0	490.0	490.0	490.0	490.0	560.0
Rated current		A	496.9	546.7	596.6	645.9	697.6	746.7	796.4
Max. operating current		A	561.1	619.0	673.9	724.6	784.1	839.1	891.1
Locked-rotor current		A	4700	4700	4700	4700	4700	4700	5400
Evaporator	Water flow	m^3/h	271.6	298.8	325.9	353.1	380.3	407.4	434.6
	Pressure drop	kPa	35.8	42.5	39.1	44.7	54.0	55.8	55.9
	Water pipe connection	mm	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Condenser	Water flow	m^3/h	337.5	371.5	405.4	439.2	473.2	507.0	541.0
	Pressure drop	kPa	52.6	62.6	55.4	64.1	66.2	65.4	64.9
	Water pipe connection	mm	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Unit dimensions	Length	mm	4690	4690	4690	4690	4690	4690	4690
	Width	mm	1800	1800	1800	1800	1950	1950	1950
	Height	mm	2410	2410	2410	2410	2410	2410	2410
Shipping weight		kg	10080	10080	10240	10240	11140	11270	11355
Running weight		kg	12020	12020	12180	12180	13159	13350	13564

Model		CCWE	850H	900H	950H	1000H	1100H	1200H	1300H
Cooling capacity		RT	850	900	950	1000	1100	1200	1300
		kW	2989	3164	3340	3516	3868	4219	4571
		10^4kcal/h	257.0	272.1	287.3	302.4	332.6	362.9	393.1
Power input		kW	486.3	512.3	542.8	570.7	624.4	678.4	731.3
COP		W/W	6.145	6.177	6.153	6.161	6.194	6.220	6.251
IPLV		W/W	7.294	7.271	6.978	6.949	6.807	7.015	7.121
Motor configuration power		kW	560.0	630.0	630.0	630.0	695.0	760.0	840.0
Rated current		A	844.5	889.5	942.5	990.9	1084	1178	1270
Max. operating current		A	953.6	993.9	1048.5	1103	1207	1313	1411
Locked-rotor current		A	5400	6100	6100	6100	6800	7400	9200
Evaporator	Water flow	m^3/h	461.7	488.9	516.1	543.2	597.5	651.9	706.2
	Pressure drop	kPa	57.6	59.7	58.1	60.0	59.1	58.4	67.7
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Condenser	Water flow	m^3/h	574.7	608.4	642.5	676.3	743.5	810.8	877.5
	Pressure drop	kPa	66.3	66.2	64.0	68.7	64.3	58.5	64.9
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Unit dimensions	Length	mm	4690	4690	4745	4745	4745	4745	4745
	Width	mm	1950	1950	2260	2260	2260	2260	2260
	Height	mm	2410	2410	2610	2610	2610	2610	2610
Shipping weight		kg	11425	11494	11920	12067	12235	12380	12480
Running weight		kg	13712	13839	14532	14773	15108	15376	15500

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWE	1400H10	1500H10	1600H10	1700H10	1800H10
Cooling capacity		RT	1400	1500	1600	1700	1800
		kW	4922	5274	5626	5977	6329
		10^4kcal/h	423.3	453.6	483.8	514.0	544.3
Power input		kW	793.3	848.5	909.4	965.4	1013
COP		W/W	6.205	6.216	6.186	6.191	6.250
IPLV		W/W	6.616	6.457	6.661	6.596	6.768
Motor configuration power		kW	930.0	990.0	990.0	1100	1100
Rated current		A	52.60	56.30	60.30	64.10	67.20
Max. operating current		A	58.91	62.79	67.52	71.82	74.87
Locked-rotor current		A	380.0	405.0	450.0	450.0	490.0
Evaporator	Water flow	m3/h	760.5	814.8	869.1	923.5	977.8
	Pressure drop	kPa	63.6	60.9	59.3	66.8	70.8
	Water pipe connection	mm	DN400	DN400	DN400	DN400	DN400
Condenser	Water flow	m3/h	946.5	1014	1082	1150	1217
	Pressure drop	kPa	68.0	66.9	64.9	73.2	70.8
	Water pipe connection	mm	DN400	DN400	DN400	DN400	DN400
Unit dimensions	Length	mm	5190	5190	5190	5190	5290
	Width	mm	2700	2700	2700	2700	3150
	Height	mm	3010	3010	3010	3010	3180
Shipping weight		kg	19370	20150	20850	20879	23360
Running weight		kg	22840	23490	24210	24289	27040

Model		CCWE	1900H10	2000H10	2100H10	2200H10
Cooling capacity		RT	1900	2000	2100	2200
		kW	6680	7032	7384	7735
		10^4kcal/h	574.5	604.8	635.0	665.2
Power input		kW	1070	1131	1180	1251
COP		W/W	6.242	6.217	6.259	6.185
IPLV		W/W	6.738	6.681	6.782	6.697
Motor configuration power		kW	1200	1320	1320	1450
Rated current		A	71.00	75.10	78.30	83.00
Max. operating current		A	80.12	84.21	88.31	93.45
Locked-rotor current		A	490.0	540.0	540.0	590.0
Evaporator	Water flow	m3/h	1032	1086	1141	1195
	Pressure drop	kPa	66.0	67.5	67.0	67.1
	Water pipe connection	mm	DN400	DN400	DN400	DN400
Condenser	Water flow	m3/h	1284	1353	1419	1489
	Pressure drop	kPa	67.6	66.6	66.5	67.0
	Water pipe connection	mm	DN400	DN400	DN400	DN400
Unit dimensions	Length	mm	5290	5290	5290	5290
	Width	mm	3150	3150	3150	3150
	Height	mm	3180	3180	3180	3180
Shipping weight		kg	23590	23870	24120	24350
Running weight		kg	27490	27840	28076	28310

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWE	2300H10	2400H10	2500H10	2600H10	2700H10	2800H10	2900H10	3000H10
Cooling capacity		RT	2300	2400	2500	2600	2700	2800	2900	3000
		kW	8087	8438	8790	9142	9493	9845	10196	10548
		10^4kcal/h	695.5	725.8	756.0	786.2	816.5	846.7	877.0	907.2
Power input		kW	1246	1305	1356	1403	1454	1512	1574	1619
COP		W/W	6.492	6.468	6.480	6.517	6.529	6.512	6.477	6.515
IPLV		W/W	7.119	7.113	7.099	7.078	7.052	7.069	7.056	7.053
Motor configuration power		kW	1450	1600	1600	1600	1800	1800	1800	2000
Rated current		A	82.70	86.60	90.00	93.10	96.50	100.3	104.5	107.4
Max. operating current		A	94.29	97.86	102.5	105.9	109.9	114.1	117.0	121.2
Locked-rotor current		A	574.0	648.0	648.0	648.0	725.0	725.0	725.0	800.0
Evaporator	Water flow	m^3/h	1249	1304	1358	1412	1467	1521	1575	1630
	Pressure drop	kPa	75.5	74.8	74.8	74.4	74.2	74.2	73.9	72.9
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Condenser	Water flow	m^3/h	1547	1616	1683	1749	1816	1884	1952	2018
	Pressure drop	kPa	70.3	71.3	71.9	72.7	72.6	73.7	71.8	72.2
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Unit dimensions	Length	mm	5900	5900	5900	5900	5900	5900	5900	5900
	Width	mm	3360	3360	3360	3360	3360	3360	3360	3360
	Height	mm	3650	3650	3650	3650	3650	3650	3650	3650
Refrigerant charge		kg	2150	2200	2250	2300	2350	2400	2450	2500
Shipping weight (non-marine water box)		kg	27015	27215	27415	27605	27845	28035	28225	28500
Running weight (non-marine water box)		kg	34210	34580	34950	35310	35720	36080	36485	36930

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWE	2300H11	2400H11	2500H11	2600H11	2700H11	2800H11	2900H11	3000H11
Cooling capacity		RT	2300	2400	2500	2600	2700	2800	2900	3000
		kW	8087	8438	8790	9142	9493	9845	10196	10548
		10^4kcal/h	695.5	725.8	756.0	786.2	816.5	846.7	877.0	907.2
Power input		kW	1537	1602	1671	1744	1804	1870	1926	1998
COP		W/W	5.263	5.267	5.260	5.241	5.262	5.264	5.294	5.279
Motor configuration power		kW	1800	1800	1800	2000	2000	2000	2150	2150
Rated current		A	92.70	96.70	100.8	105.2	108.8	112.8	116.2	120.5
Max. operating current		A	97.34	101.5	105.8	110.5	114.2	118.4	122.0	126.5
Locked-rotor current		A	690.0	690.0	690.0	790.0	790.0	790.0	791.0	791.0
Evaporator	Water flow	m^3/h	784.7	818.8	853.0	887.1	921.2	955.3	989.4	1024
	Pressure drop	kPa	32.5	32.2	32.2	32.0	31.9	31.9	31.7	31.3
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Condenser	Water flow	m^3/h	1649	1720	1792	1865	1935	2007	2077	2150
	Pressure drop	kPa	77.2	78.3	79.0	80.0	79.9	81.1	78.9	79.5
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Unit dimensions (non-marine water box)	Length	mm	5900	5900	5900	5900	5900	5900	5900	5900
	Width	mm	3360	3360	3360	3360	3360	3360	3360	3360
	Height	mm	3650	3650	3650	3650	3650	3650	3650	3650
Shipping weight (non-marine water box)		kg	27015	27215	27415	27605	27845	28035	28225	28500
Running weight (non-marine water box)		kg	34210	34580	34950	35310	35720	36080	36485	36930

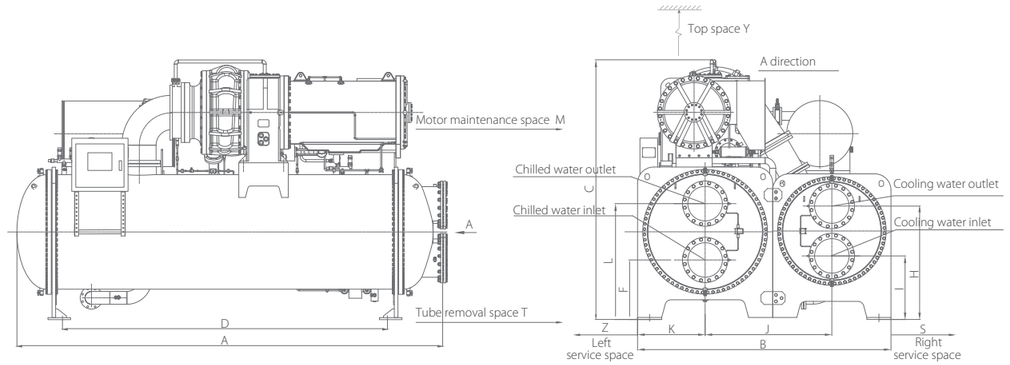
Note:
1. The parameters in the above table are given according to the working conditions in the Middle East: chilled water inlet/outlet temperature 14.40/5.55°C,
cooling water inlet/outlet temperature 34.40/39.40°C; the fouling factor on the chilled water side is 0.0176m²·°C/kW and the fouling factor on the cooling water side is 0.0440m²·°C/kW.
Chilled water flow and cooling water flow are calculated based on operating conditions.
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

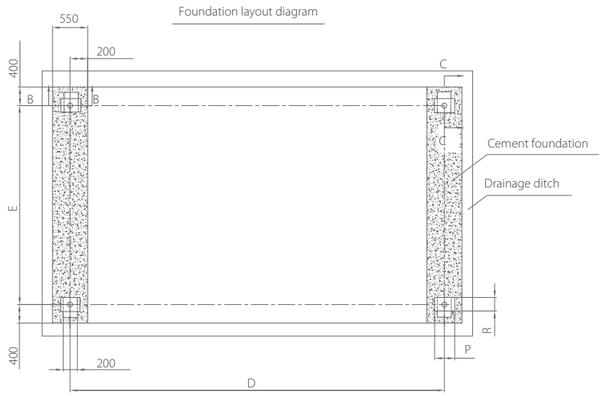
Model (series counterflow)		CCWE	4600H11		4800H11		5000H11		5200H11	
Total cooling capacity		RT	4600		4800		5000		5200	
		/	Upstream unit	Downstream unit	Upstream unit	Downstream unit	Upstream unit	Downstream unit	Upstream unit	Downstream unit
Cooling capacity		RT	2415	2185	2520	2280	2625	2375	2730	2470
		kW	8491	7682	8860	8016	9230	8351	9599	8685
		10^4kcal/h	730.3	660.7	762.0	689.4	793.8	718.2	825.5	746.9
Power input		kW	1571.9	1475.4	1636.3	1529.3	1702.1	1597.4	1765.6	1652.6
COP		W/W	5.308		5.331		5.328		5.349	
Motor configuration power		kW	2000	2000	2000	2000	2000	2000	2000	2000
Rated current		A	94.80	89.00	98.70	92.30	102.7	96.40	106.5	99.70
Max. operating current		A	99.54	99.54	103.6	103.6	107.8	107.8	111.8	111.8
Locked-rotor current		A	790.0	790.0	790.0	790.0	790.0	790.0	790.0	790.0
Evaporator	Water flow	m^3/h	1563	1563	1631	1631	1699	1699	1767	1767
	Pressure drop	kPa	34.0	35.1	34.1	35.2	34.0	35.0	35.1	36.2
	Water pipe connection	mm	DN600	DN600	DN600	DN600	DN600	DN600	DN600	DN600
Condenser	Water flow	m^3/h	2530	2530	2639	2639	2748	2748	2857	2857
	Pressure drop	kPa	47.5	48.0	48.2	48.7	49.0	49.6	48.9	49.5
	Water pipe connection	mm	DN700	DN700	DN700	DN700	DN700	DN700	DN700	DN700
Unit dimensions (non-marine water box)	Length	mm	6100	6100	6100	6100	6100	6100	6100	6100
	Width	mm	3360	3360	3360	3360	3360	3360	3360	3360
	Height	mm	3650	3650	3650	3650	3650	3650	3650	3650
Shipping weight (non-marine water box)		kg	27590	27590	27890	27890	27990	27990	28240	28240
Running weight (non-marine water box)		kg	35150	35150	35520	35520	35890	35890	36350	36350

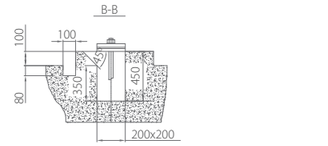
Model (series counterflow)		CCWE	5400H11		5600H11		5800H11		6000H11	
Total cooling capacity		RT	5400		5600		5800		6000	
		/	Upstream unit	Downstream unit	Upstream unit	Downstream unit	Upstream unit	Downstream unit	Upstream unit	Downstream unit
Cooling capacity		RT	2835	2565	2940	2660	3045	2755	3150	2850
		kW	9968	9019	10337	9353	10706	9687	11075	10021
		10^4kcal/h	857.3	775.6	889.0	804.4	920.8	833.1	952.5	861.8
Power input		kW	1827.3	1703.5	1901.2	1764.9	1976.0	1826.6	2049.1	1899.5
COP		W/W	5.377		5.371		5.363		5.343	
Motor configuration power		kW	2150	2150	2150	2150	2150	2150	2150	2150
Rated current		A	110.2	102.8	114.7	106.5	119.2	110.2	123.6	114.6
Max. operating current		A	115.7	115.7	120.4	120.4	125.2	125.2	129.8	129.8
Locked-rotor current		A	791.0	791.0	791.0	791.0	791.0	791.0	791.0	791.0
Evaporator	Water flow	m^3/h	1835	1835	1903	1903	1971	1971	2039	2039
	Pressure drop	kPa	34.9	36.0	34.7	35.7	34.6	35.6	35.1	36.1
	Water pipe connection	mm	DN600	DN600	DN600	DN600	DN600	DN600	DN600	DN600
Condenser	Water flow	m^3/h	2967	2967	3078	3078	3189	3189	3300	3300
	Pressure drop	kPa	49.1	49.6	49.7	50.3	50.4	50.9	51.2	51.8
	Water pipe connection	mm	DN700	DN700	DN700	DN700	DN700	DN700	DN700	DN700
Unit dimensions (non-marine water box)	Length	mm	6100	6100	6100	6100	6100	6100	6100	6100
	Width	mm	3360	3360	3360	3360	3360	3360	3360	3360
	Height	mm	3650	3650	3650	3650	3650	3650	3650	3650
Shipping weight (non-marine water box)		kg	28480	28480	28670	28670	28860	28860	29140	29140
Running weight (non-marine water box)		kg	36760	36760	37120	37120	37530	37530	37970	37970

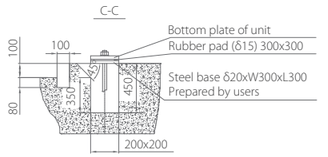
Note:
1. The parameters in the above table are given according to the working conditions in the Middle East: chilled water inlet/outlet temperature 13.30/4.44℃, cooling water inlet/outlet temperature 35/41.5℃; the fouling factor on the chilled water side is 0.0176m^2·℃/kW and the fouling factor on the cooling water side is 0.0440m^2·℃/kW. Chilled water flow and cooling water flow are calculated based on operating conditions.
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.
5. Cooling capacity lager than 3000RT is beyond the scope of AHRI certification.

Dimensions







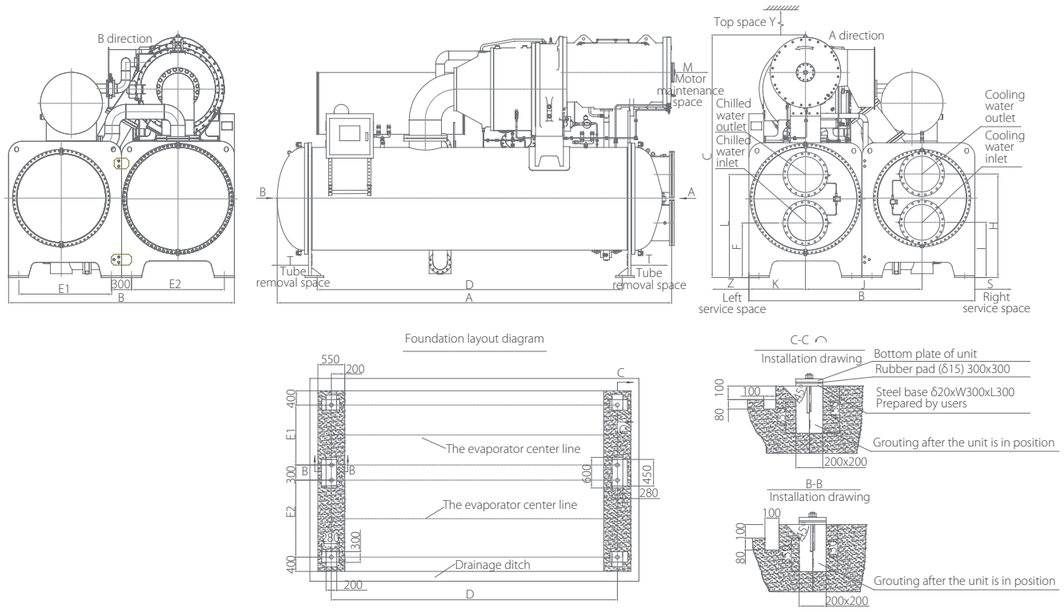


Model	Dimensions			Support				Pipe locate position							
	Length (A)	Width (B)	Height (C)	D	E	P	R	F	L	K	I	H	J	Evaporator pipe diameter	Condenser pipe diameter
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE500H	4690	1800	2410	3780	1600	240	200	537.5	982.5	450	537.5	982.5	900	DN250	DN250
CCWE550H															
CCWE600H															
CCWE650H															
CCWE700H	4690	1950	2410	3780	1750	240	200	530	990	500	580	1040	975	DN300	DN300
CCWE750H															
CCWE800H															
CCWE850H															
CCWE900H															
CCWE950H	4745	2260	2610	3780	2060	240	200	585	1085	592.5	650	1120	1130	DN300	DN300
CCWE1000H															
CCWE1100H															
CCWE1200H															
CCWE1300H															
CCWE1400H10	5190	2700	3010	4040	2400	280	300	640	1240	725	650	1250	1350	DN400	DN400
CCWE1500H10															
CCWE1600H10															
CCWE1700H10															
CCWE1800H10	5290	3150	3180	4040	2850	280	300	740	1440	840	790	1410	1575	DN400	DN400
CCWE1900H10															
CCWE2000H10															
CCWE2100H10															
CCWE2200H10															

Model	Maintenance space size (mm)				
	M	T	Y	Z	S
CCWE500H~CCWE1300H	1500	4200	1300	1300	1000
CCWE1400H10~CCWE2200H10	1600	4500	1300	1800	1000

T: Tube removal space for either end.

CCWE2300H10~CCWE3000H10 (non-marine water box)
CCWE2300H11~CCWE3000H11 (non-marine water box)

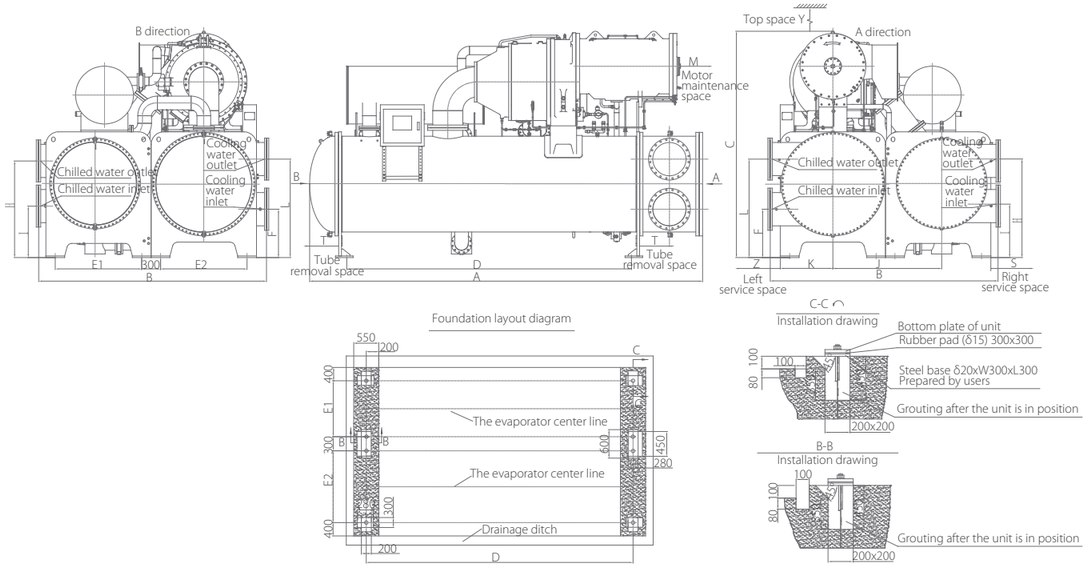


Model	Dimensions			Support			Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	D	E1	E2	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE2300H10	5900	3360	3650	4540	1380	1380	820	1520	840	830	1530	1735	DN500	DN500
CCWE2300H11														
CCWE2400H10														
CCWE2400H11														
CCWE2500H10														
CCWE2500H11														
CCWE2600H10														
CCWE2600H11														
CCWE2700H10														
CCWE2700H11														
CCWE2800H10														
CCWE2800H11														
CCWE2900H10														
CCWE2900H11														
CCWE3000H10														
CCWE3000H11														

Model	Maintenance space (mm)				
	M	T	Y	Z	S
CCWE2300H10~CCWE3000H10	2000	5000	1600	2000	1000
CCWE2300H11~CCWE3000H11					

T: Tube removal space for either end.

CCWE2300H11~CCWE3000H11 (marine water box)

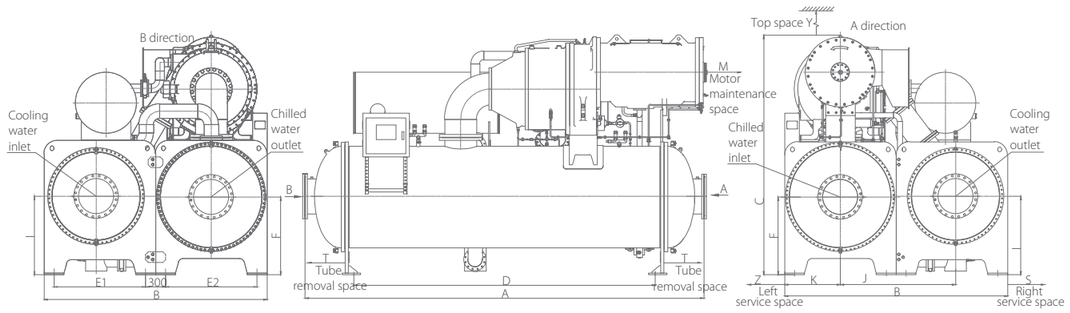


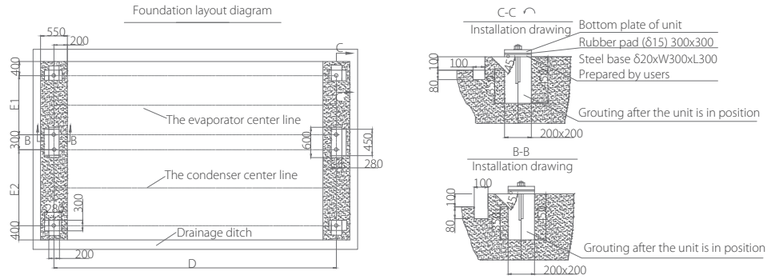
Model	Dimensions			Support			Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	D	E1	E2	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE2300H11	6300	3650	3650	4540	1380	1380	810	1530	840	820	1540	1735	DN500	DN500
CCWE2400H11														
CCWE2500H11														
CCWE2600H11														
CCWE2700H11														
CCWE2800H11														
CCWE2900H11														
CCWE3000H11														

Model	Maintenance space (mm)				
	M	T	Y	Z	S
CCWE2300H11~CCWE3000H11	2000	5000	1600	2000	1000

T: Tube removal space for either end.

Series counterflow (non-marine water box)



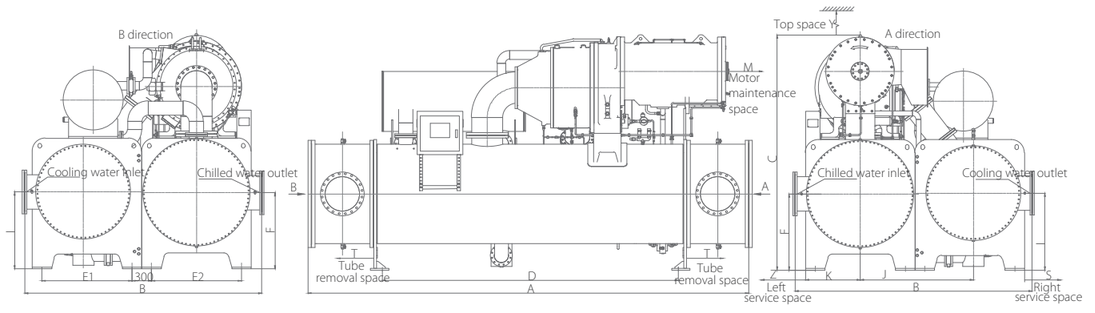


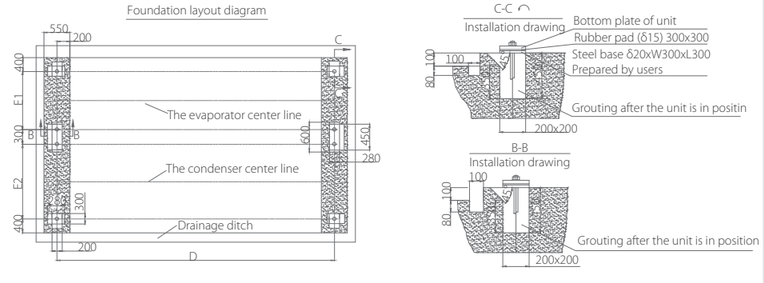
Model	Dimensions			Support			Pipe locate position							
	Length (A)	Width (B)	Height (C)	D	E1	E2	F	L	K	I	H	J	Evaporator pipe diameter	Condenser pipe diameter
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE2300H11 Upstream unit/ Downstream unit	6100	3360	3650	4540	1380	1380	1170	/	840	1180	/	1735	DN600	DN700
CCWE2400H11 Upstream unit/ Downstream unit														
CCWE2500H11 Upstream unit/ Downstream unit														
CCWE2600H11 Upstream unit/ Downstream unit														
CCWE2700H11 Upstream unit/ Downstream unit														
CCWE2800H11 Upstream unit/ Downstream unit														
CCWE2900H11 Upstream unit/ Downstream unit														
CCWE3000H11 Upstream unit/ Downstream unit														

Model	Maintenance space(mm)				
	M	T	Y	Z	S
CCWE2300H11~CCWE3000H11 Upstream unit/ Downstream unit	2000	5000	1600	2000	1000

T: Tube removal space for either end.

Series counterflow (marine water box)





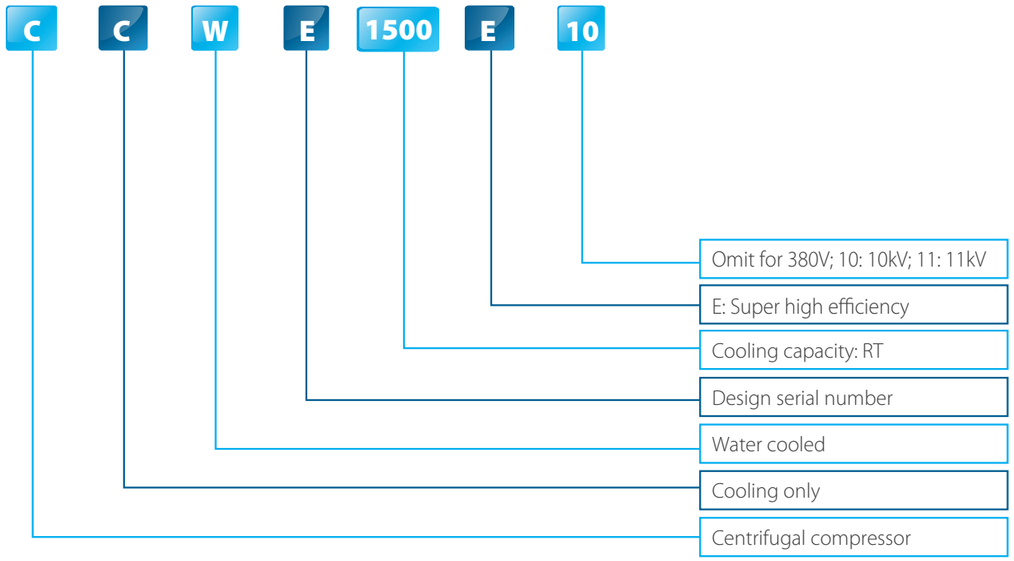
Model	Dimensions			Support			Pipe locate position							
	Length (A)	Width (B)	Height (C)	D	E1	E2	F	L	K	I	H	J	Evaporator pipe diameter	Condenser pipe diameter
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE2300H11 Upstream unit/ Downstream unit	7000	3650	3650	4540	1380	1380	1170	/	840	1180	/	1735	DN600	DN700
CCWE2400H11 Upstream unit/ Downstream unit														
CCWE2500H11 Upstream unit/ Downstream unit														
CCWE2600H11 Upstream unit/ Downstream unit														
CCWE2700H11 Upstream unit/ Downstream unit														
CCWE2800H11 Upstream unit/ Downstream unit														
CCWE2900H11 Upstream unit/ Downstream unit														
CCWE3000H11 Upstream unit/ Downstream unit														

Model	Maintenance space(mm)				
	M	T	Y	Z	S
CCWE2300H11~CCWE3000H11 Upstream unit/ Downstream unit	2000	5000	1600	2000	1000

T: Tube removal space for either end.

Super High Efficiency Series

Nomenclature



Specifications

Model		CCWE	500E	550E	600E	650E	700E	750E	800E
Cooling capacity		RT	500.0	550.0	600.0	650.0	700.0	750.0	800.0
		kW	1758	1934	2110	2285	2461	2637	2813
		10^4kcal/h	151.2	166.3	181.4	196.5	211.7	226.8	241.9
Power input		kW	284.6	311.7	336.0	363.4	392.6	418.6	443.9
COP		W/W	6.178	6.205	6.279	6.288	6.269	6.300	6.337
IPLV		W/W	6.833	6.834	6.890	6.918	6.954	7.233	7.250
Motor configuration power		kW	490.0	490.0	490.0	490.0	490.0	490.0	560.0
Rated current		A	494.1	541.2	583.4	631.1	681.7	726.8	770.8
Max. operating current		A	557.2	611.0	656.9	706.8	764.1	816.0	862.2
Locked-rotor current		A	4700	4700	4700	4700	4700	4700	5400
Evaporator	Water flow	m^3/h	271.6	298.8	325.9	353.1	380.3	407.4	434.6
	Pressure drop	kPa	70.0	72.1	73.0	76.8	46.7	49.0	48.9
	Water pipe connection	mm	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Condenser	Water flow	m^3/h	337.3	371.0	404.2	437.9	471.8	505.2	538.8
	Pressure drop	kPa	67.4	70.5	69.6	70.5	59.0	59.1	58.6
	Water pipe connection	mm	DN250	DN250	DN250	DN250	DN300	DN300	DN300
Unit dimensions	Length	mm	5020	5020	5020	5020	5020	5020	5020
	Width	mm	1800	1800	1800	1800	2100	2100	2100
	Height	mm	2410	2410	2410	2410	2510	2510	2510
Shipping weight		kg	10400	10550	10700	10820	12260	12460	12580
Running weight		kg	12340	12490	12640	12760	14479	14740	14989

Model		CCWE	850E	900E	950E	1000E	1100E	1200E	1300E
Cooling capacity		RT	850.0	900.0	950.0	1000	1100	1200	1300
		kW	2989	3164	3340	3516	3868	4219	4571
		10^4kcal/h	257.0	272.1	287.3	302.4	332.6	362.9	393.1
Power input		kW	470.9	501.0	522.8	552.0	608.3	661.1	715.1
COP		W/W	6.346	6.316	6.389	6.369	6.358	6.382	6.392
IPLV		W/W	7.293	7.361	7.148	7.165	7.110	7.182	7.181
Motor configuration power		kW	560.0	630.0	630.0	630.0	695.0	760.0	840.0
Rated current		A	817.7	870.0	907.9	958.5	1056	1148	1242
Max. operating current		A	922.0	971.8	1010.4	1068	1176	1280	1381
Locked-rotor current		A	5400	6100	6100	6100	6800	7400	9200
Evaporator	Water flow	m^3/h	461.7	488.9	516.1	543.2	597.5	651.9	706.2
	Pressure drop	kPa	51.2	52.6	50.4	52.1	52.3	52.1	60.1
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Condenser	Water flow	m^3/h	572.3	606.7	639.5	673.4	741.1	808.1	875.0
	Pressure drop	kPa	55.7	61.9	57.4	61.5	57.3	55.0	63.5
	Water pipe connection	mm	DN300	DN300	DN300	DN300	DN300	DN300	DN300
Unit dimensions	Length	mm	5020	5020	5045	5045	5045	5045	5045
	Width	mm	2100	2100	2260	2260	2260	2260	2260
	Height	mm	2510	2510	2610	2610	2610	2610	2610
Shipping weight		kg	12720	12850	13560	13730	13950	14250	14250
Running weight		kg	15207	15395	16372	16636	17023	17446	17446

Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Model		CCWE	1400E10	1500E10	1600E10	1700E10	1800E10
Cooling capacity		RT	1400	1500	1600	1700	1800
		kW	4922	5274	5626	5977	6329
		10^4kcal/h	423.3	453.6	483.8	514.0	544.3
Power input		kW	772.9	827.9	878.7	905.8	956.3
COP		W/W	6.369	6.370	6.402	6.599	6.618
IPLV		W/W	6.881	6.887	6.901	7.076	7.211
Motor configuration power		kW	930.0	990.0	990.0	1100	1100
Rated current		A	51.30	54.90	58.30	60.10	63.50
Max. operating current		A	57.33	61.22	65.00	67.20	70.56
Locked-rotor current		A	380.0	405.0	450.0	450.0	490.0
Evaporator	Water flow	m^3/h	760.5	814.8	869.1	923.5	977.8
	Pressure drop	kPa	59.8	56.8	55.4	60.3	62.9
	Water pipe connection	mm	DN400	DN400	DN400	DN400	DN400
Condenser	Water flow	m^3/h	943.3	1011	1078	1141	1208
	Pressure drop	kPa	59.9	65.1	62.2	71.9	68.2
	Water pipe connection	mm	DN400	DN400	DN400	DN400	DN400
Unit dimensions	Length	mm	5690	5690	5690	5690	5790
	Width	mm	2800	2800	2800	2800	3150
	Height	mm	3010	3010	3010	3010	3180
Shipping weight		kg	22324	22515	24030	24817	25312
Running weight		kg	25944	26055	27640	28727	28992

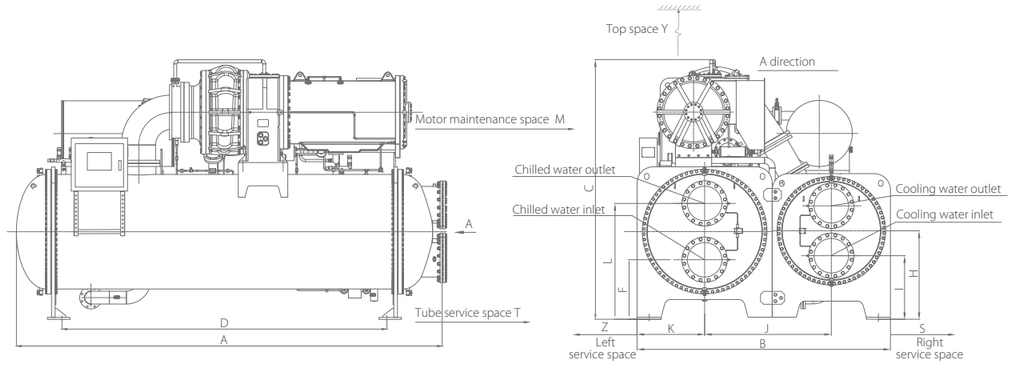
Model		CCWE	1900E10	2000E10	2100E10	2200E10
Cooling capacity		RT	1900	2000	2100	2200
		kW	6680	7032	7384	7735
		10^4kcal/h	574.5	604.8	635.0	665.2
Power input		kW	1002	1072	1133	1205
COP		W/W	6.666	6.557	6.517	6.418
IPLV		W/W	7.266	7.220	7.221	7.003
Motor configuration power		kW	1200	1320	1320	1450
Rated current		A	66.50	71.20	75.20	80.00
Max. operating current		A	74.66	79.49	84.21	89.57
Locked-rotor current		A	490.0	540.0	540.0	590.0
Evaporator	Water flow	m^3/h	1032	1086	1141	1195
	Pressure drop	kPa	59.4	60.3	60.3	61.3
	Water pipe connection	mm	DN400	DN400	DN400	DN400
Condenser	Water flow	m^3/h	1274	1344	1412	1482
	Pressure drop	kPa	65.8	58.8	59.4	64.9
	Water pipe connection	mm	DN400	DN400	DN400	DN400
Unit dimensions	Length	mm	5790	5790	5790	5790
	Width	mm	3150	3150	3150	3150
	Height	mm	3180	3180	3180	3180
Shipping weight		kg	25543	25949	26250	26314
Running weight		kg	29443	30019	30306	30374

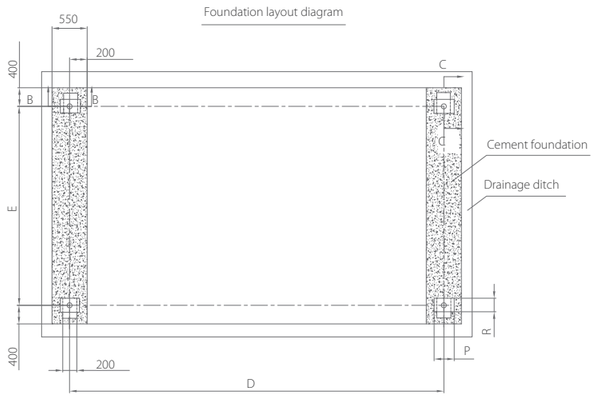
Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

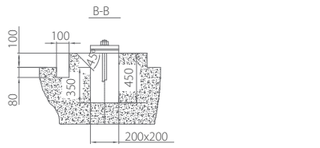
Model		CCWE	2300E10	2400E10	2500E10	2600E10	2700E10	2800E10	2900E10	3000E10
Cooling capacity		RT	2300	2400	2500	2600	2700	2800	2900	3000
		kW	8087	8438	8790	9142	9493	9845	10196	10548
		10^4kcal/h	695.5	725.8	756.0	786.2	816.5	846.7	877.0	907.2
Power input		kW	1185	1245	1299	1347	1401	1459	1523	1568
COP		W/W	6.825	6.780	6.768	6.785	6.778	6.749	6.696	6.725
IPLV		W/W	7.172	7.162	7.146	7.123	7.094	7.109	7.095	7.090
Motor configuration power		kW	1450	1450	1600	1600	1800	1800	1800	2000
Rated current		A	78.60	82.60	86.20	89.40	93.00	96.80	101.1	104.1
Max. operating current		A	90.72	94.82	98.49	101.6	105.2	109.3	113.6	116.7
Locked-rotor current		A	574.0	574.0	648.0	648.0	725.0	725.0	725.0	800.0
Evaporator	Water flow	m^3/h	1249	1304	1358	1412	1467	1521	1575	1630
	Pressure drop	kPa	75.6	74.9	74.9	74.6	74.4	74.3	74.0	73.0
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Condenser	Water flow	m^3/h	1538	1606	1674	1740	1807	1875	1944	2010
	Pressure drop	kPa	70.8	71.8	72.5	73.3	73.3	74.4	72.6	72.9
	Water pipe connection	mm	DN500	DN500	DN500	DN500	DN500	DN500	DN500	DN500
Unit dimensions	Length	mm	5900	5900	5900	5900	5900	5900	5900	5900
	Width	mm	3360	3360	3360	3360	3360	3360	3360	3360
	Height	mm	3650	3650	3650	3650	3650	3650	3650	3650
Shipping weight (non-marine water box)		kg	27590	27890	27990	28240	28480	28670	28860	29140
Running weight (non-marine water box)		kg	35150	35520	35890	36350	36760	37120	37530	37970

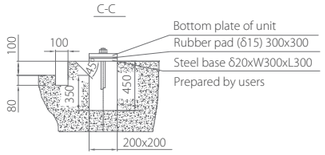
Note:
1. Performance and efficiency are based on AHRI 550/590.
Evaporator conditions: water inlet=54°F (12.22°C), water outlet=44°F (6.67°C), fouling factor=0.00010h-ft²-°F/Btu (0.0176m². °C/kW);
Condenser conditions: water inlet=85°F (29.44°C), water outlet=94.3°F (34.61°C), fouling factor=0.00025h-ft²-°F/Btu (0.0440m². °C/kW).
2. The design's max working pressure for both the evaporator and condenser are 1.0MPa, but higher pressure can be customized if required.
3. The model in the selection software is CCW****#. # is the production serial number and the actual product shall prevail.
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the software selection and the actual product.

Dimensions





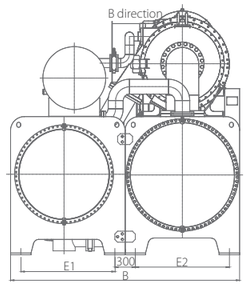


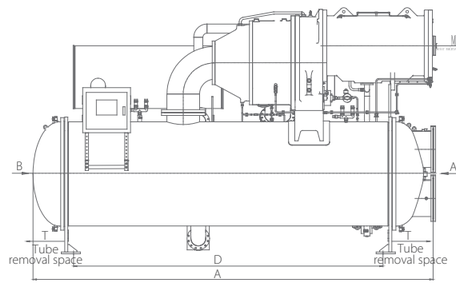


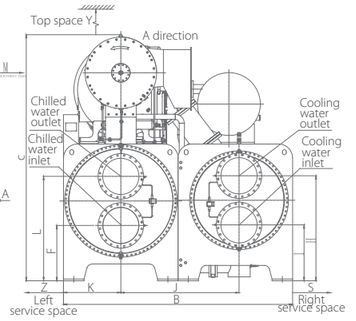
Model	Dimensions			Support				Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	D	E	P	R	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE500E	5020	1800	2410	4080	1600	240	200	537.5	982.5	450	537.5	982.5	900	DN250	DN250
CCWE550E															
CCWE600E															
CCWE650E															
CCWE700E	5020	2100	2510	4080	1900	240	200	550	1020	550	605	1065	1050	DN300	DN300
CCWE750E															
CCWE800E															
CCWE850E															
CCWE900E															
CCWE950E	5045	2260	2610	4080	2060	240	200	585	1085	592.5	650	1120	1130	DN300	DN300
CCWE1000E															
CCWE1100E															
CCWE1200E															
CCWE1300E															
CCWE1400E10	5690	2800	3010	4540	2400	280	300	640	1240	725	650	1250	1350	DN400	DN400
CCWE1500E10															
CCWE1600E10															
CCWE1700E10															
CCWE1800E10	5790	3150	3180	4540	2850	280	300	740	1440	840	790	1410	1575	DN400	DN400
CCWE1900E10															
CCWE2000E10															
CCWE2100E10															
CCWE2200E10															

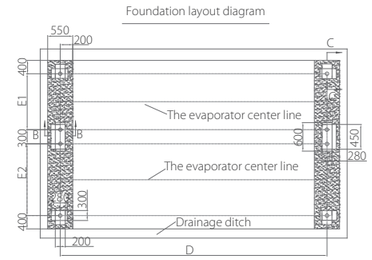
Model	Maintenance space size (mm)				
	M	T	Y	Z	S
CCWE500E~CCWE1300E	1500	4200	1300	1300	1000
CCWE1400E10~CCWE2200E10	1600	4500	1300	1800	1000

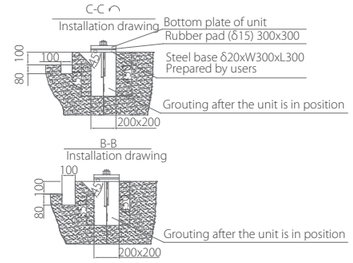
T: Tube removal space for either end.











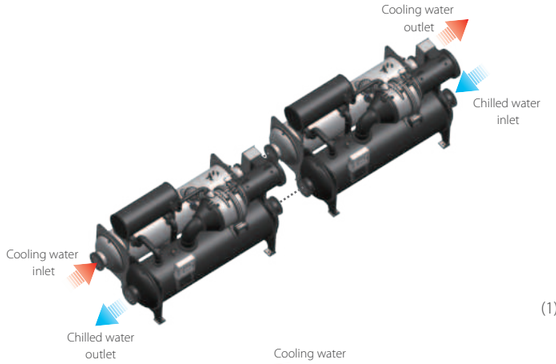
Model	Dimensions			Support			Pipe locate position						Evaporator pipe diameter	Condenser pipe diameter
	Length (A)	Width (B)	Height (C)	D	E1	E2	F	L	K	I	H	J		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
CCWE2300E10	5900	3360	3650	4540	1380	1380	820	1520	840	830	1530	1735	DN500	DN500
CCWE2400E10														
CCWE2500E10														
CCWE2600E10														
CCWE2700E10														
CCWE2800E10														
CCWE2900E10														
CCWE3000E10														

Model	Maintenance space (mm)				
	M	T	Y	Z	S
CCWE2300E10~CCWE3000E10	2000	5000	1600	2000	1000

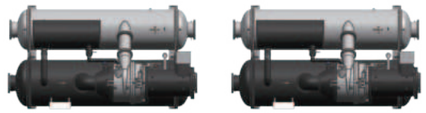
T: Tube removal space for either end.

Series Counterflow Layout Diagram

Non-marine water box



(1)



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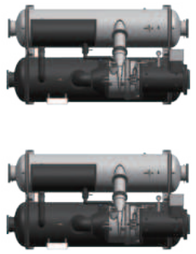
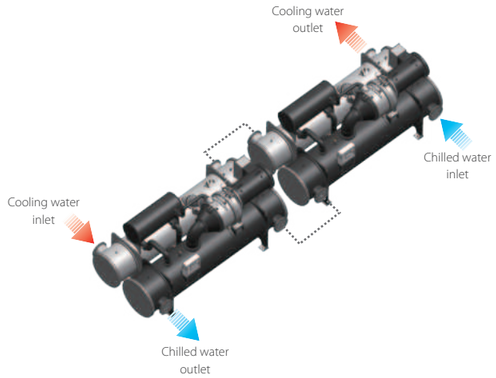
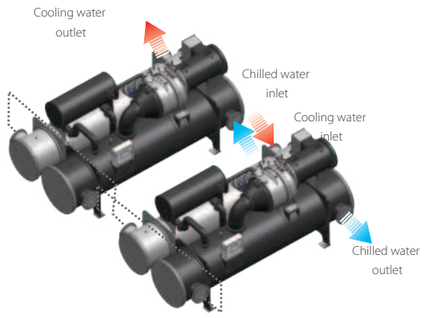


Marine water box



(1)



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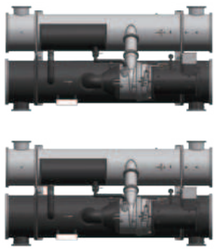
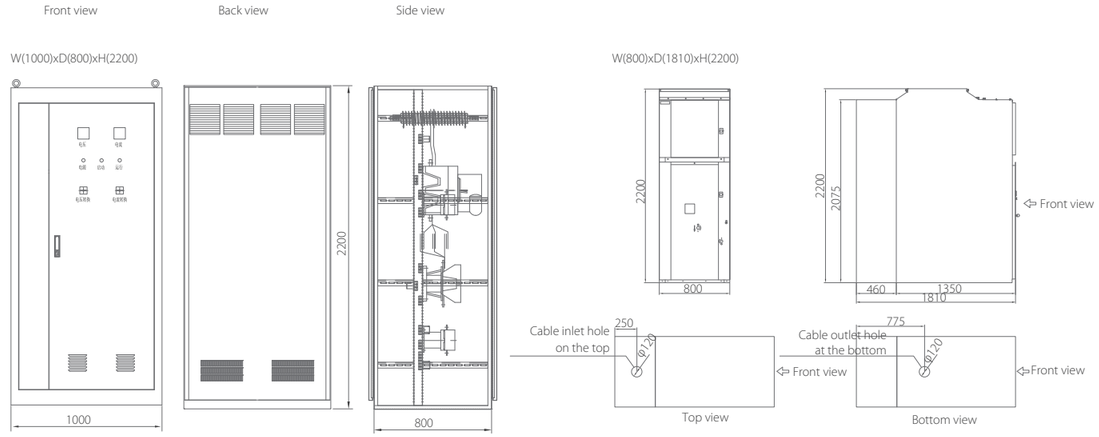
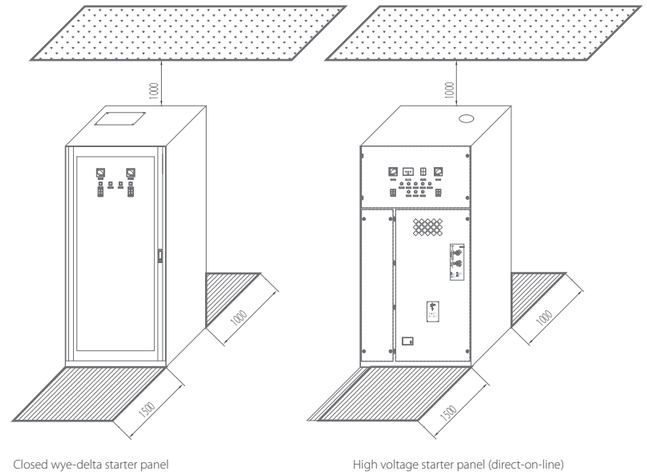


Starter Panel Dimensions



Closed wye-delta starter panel

High voltage starter panel (direct-on-line)



Closed wye-delta starter panel

High voltage starter panel (direct-on-line)

Starter panel space layout

Options

Items	Standard	Optional
Power supply (500RT-1300RT)	380V-3Ph-50Hz	50Hz: 400V, 415V, 440V, 460V, 3kV, 3.3kV, 6kV, 6.6kV, 10kV, 11kV 60Hz: 380V, 400V, 415V, 440V, 460V, 3kV, 3.3kV, 6kV, 6.6kV, 10kV, 11kV
Power supply (1400RT-2200RT)	10kV-3Ph-50Hz	50Hz: 3kV, 3.3kV, 6kV, 6.6kV, 11kV
Power supply (2300RT-3000RT)	11kV-3Ph-50Hz	10kV-3Ph-50Hz
Chiller starter (500RT-1300RT)	Wye-delta	VFD, Solid soft starter, Direct-on-line (DOL) for high voltage (3kV-11kV)
Chiller starter (1400RT-3000RT)	Direct-on-line (DOL)	VFD, soft starter, auto transformer
High pressure water box	1.0MPa	1.6MPa, 2.0MPa
Marine water box	×	Marine
Insulation	20mm	40mm
Anti-vibration	Rubber pad	Spring isolator
Refrigerant isolation valve	×	√
Vessel code	GB	ASME, PED
Heat recovery	×	√
Chilled water Delta T	5℃	6℃-11℃
Centrifugal heat pump	×	Hot water temperature up to 45℃
Water storage or ice storage	×	√
Hot gas bypass	×	√
Communication protocol	Modbus-RTU (RS485 port)	BACnet IP, BACnet MS/TP (RJ-45 port)
Flow switch	Differential pressure	×
Knockdown shipment	×	√
Midea Smart Cloud platform	×	√
QuickView	×	√
Midea Chiller Plant Control	×	√
Tube automatic cleaning system	×	√
Witness performance testing	×	√

Note: For other options, please contact with our engineers.

Operating and Control System

Colorful touch screen

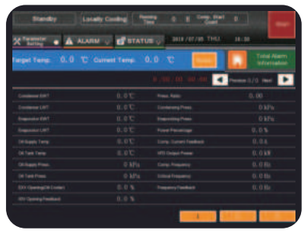
The perfect operating and control system of centrifugal chiller integrates a series of control and monitoring functions including intelligent operations, safety protection and interlocking control to achieve reliable start, high efficiency operations and internal control of chiller.

Interface display

- 10-inch true color graphic display interface
- Full screen touch operation experience
- Visual display of unit operating status
- Multi-level password protection
- Unit operation data display
- Pre-alarm/alarm display and recording
- Operation log display

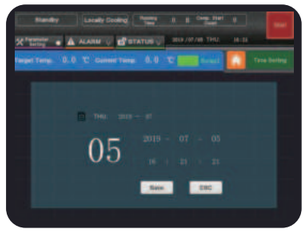
Operation control

- Freely select the inlet/outlet water control mode
- Target temperature settings
- Auto loading/unloading and soft loading
- Automatic optimization control function
- Quick start and startup after power restoration (optional)
- Independent start/stop function
- Remote and timed power-on/off functions
- Detailed unit status query



Interlocking control

- Frequency and guide vane control
- Water system bypass control
- Chilled water and cooling water pump interlocking control
- Cooling tower fan interlocking control
- Reserved upper computer interface control
- Reserved alarm interlocking control
- Pre-startup safety interlocking control



Safety protection

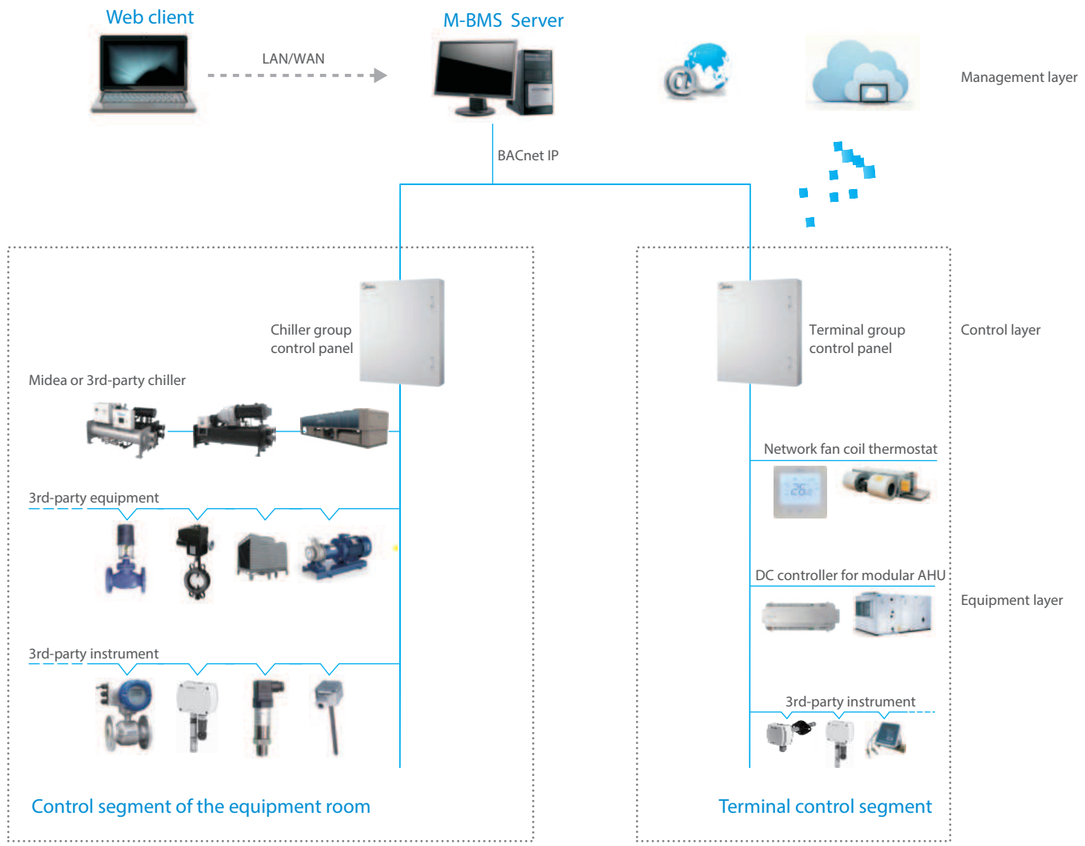
- Compressor current protection
- Anti-surge Protection
- Condensing pressure high/too high protection
- Evaporation pressure low/too low protection
- Water outage protection
- Operating anti-freeze protection
- VFD panel fault protection

Note:
The control interface and display content vary with each model. Please refer to the actual product.

Intelligent Management

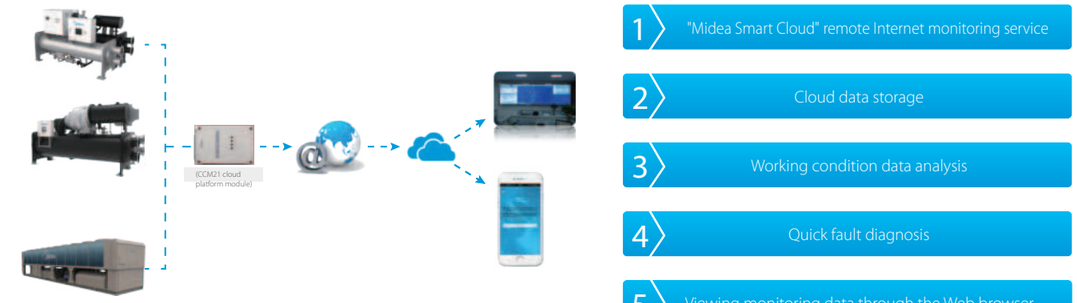
Midea Chiller Plant Control

Midea Chiller Plant Control is a group control system for commercial air conditioning that includes air conditioners, water pumps, cooling towers, terminals and related ancillary equipment (including valves, sensors etc.) as the underlying control objects. Based on a powerful control logic program and communication network, it establishes a 3-layer control framework that integrates the equipment, control and management layers. Midea Chiller Plant Control contains a unique operation module from Midea that is designed to save energy, so in addition to automated stable operations for the various devices, this product also improves and optimizes user management capabilities, reduces labour costs, boosts operational efficiency and lowers the overall energy consumption for commercial air conditioning.



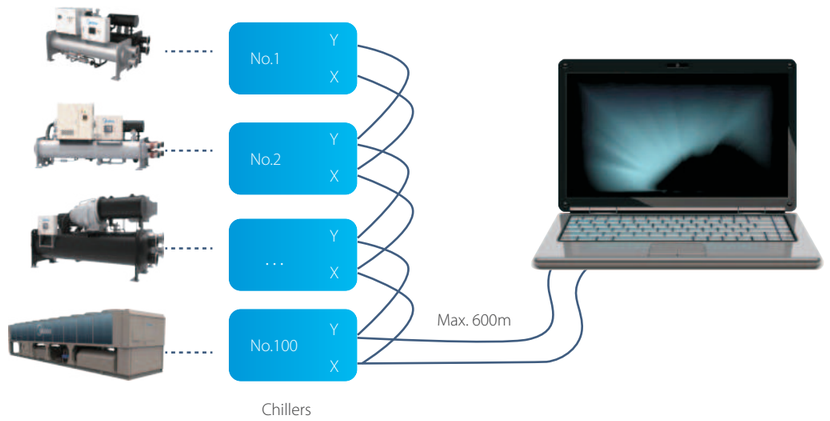
Midea Smart Cloud platform

Midea has built a flawless internet-based remote monitoring system, which provides customers with outstanding cloud service via advanced cloud service technologies and the internet. Customers can connect Midea air conditioner to the global remote monitoring system through Midea's IMU smart data acquisition terminal, so that professionals can help the customer to implement remote fault diagnosis, analysis and receive early warning alarms for failures, ensuring the equipment's optimal operation. Customers authorized by Midea can use a Web browser to view the real-time monitoring data of the air conditioning system.



QuickView

Midea's QuickView smart software control system is a type of smart software specially developed by Midea. It features high real-time efficiency, stability, reliability, a high degree of visualization and strong scalability. It can implement a wide variety of scenarios such as real-time data monitoring of units, unit equipment management, remote control, curve display, data storage, alarm query, fault diagnosis, uploading data to the cloud and external data analysis, greatly improving the unit's operation management efficiency and reducing the human input and operation and maintenance costs.



Reference Projects

Guangzhou Baiyun International Airport T2 Terminal

- Country: China
- City: Guangzhou
- Outdoor Units: Centrifugal chiller
- Indoor Units: FCU & AHU
- Total Capacity: 35,680RT

Dalma Mall

- Country: UAE
- City: Abu Dhabi
- Outdoor Units: Centrifugal chiller
- Total Capacity: 10,000RT
- Completion Year: 2014

Hartono Lifestyle Mall

- Country: Indonesia
- City: Yogyakarta
- Outdoor Units: Centrifugal chiller
- Indoor Units: FCU & AHU
- Total Capacity: 5,000RT

Federal Security Service

- Country: Russia
- City: Moscow
- Outdoor Units: Centrifugal chiller
- Total Capacity: 5,000RT
- Completion Year: 2015

Harran University

- Country: Turkey
- City: Sanliurfa
- Outdoor Units: Centrifugal chiller
- Indoor Units: FCU & AHU
- Total Capacity: 3,000RT

Osmaniye Hospital

- Country: Turkey
- City: Osmaniye
- Outdoor Units: Inverter direct-drive centrifugal chiller
- Total Capacity: 3,750RT

Don Mueang International Airport

- Country: Thailand
- City: Bangkok
- Outdoor Units: Inverter direct-drive centrifugal chiller
- Total Capacity: 4,000RT

Boulevard Shopping Mall Bintulu

- Country: Malaysia
- City: Bintulu, Sarawak
- Outdoor Units: Inverter direct-drive centrifugal chiller
- Total Capacity: 4,200RT

JA Solar

Country: Vietnam
City: Bac Giang
Outdoor Units: Centrifugal chiller & Inverter direct-drive centrifugal chiller
Total Capacity: 12,000RT

Manufacturing Plant of QDOS Flexcircuits Sdn Bhd

Country: Philippines
Outdoor Units: Magnetic bearing centrifugal chiller
Total Capacity: 2,900RT

Taipei City Government

Country: China
City: Taiwan
Outdoor Units: Magnetic bearing centrifugal chiller
Total Capacity: 500RT
Completion Year: 2017

MENARA KPJ Healthcare

Country: Malaysia
City: Kuala Lumpur
Outdoor Units: Magnetic bearing centrifugal chiller
Total Capacity: 800RT
Completion Year: 2018