5C202301

Water Cooled Screw Chiller

2023

MAKE A BEAUTIFUL TOMORROW

Midea Building Technologies Division

Midea Group

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

Postal code: 528311

mbt.midea.com www.midea-group.com

Quality Assurance ISO 9001

Environmental Management ISO 14001

Occupational Health and Safety Management ISO 45001

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 2022

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

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 TSP 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://tsp.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 (TSP)

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

Website address: https://tsp.midea.com/

My order

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

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 TSP, with the same functions as TSP. 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

Product Lineup

Series \ Capacity (RT)	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	280	300	320	340	350	370	380	390	400	410	430	450	460	470	480	510	600
Inverter, flooded (SCWF***EV) 				√		√		√			√		√			√		√	√	√	√		√		√			√	√	√			√		
Flooded (SCWE***H-B) 	√	√	√		√		√		√			√	√	√	√	√		√		√			√			√			√			√			
Flooded (SCWE***M) 		√			√		√			√		√			√		√			√		√		√			√				√			√	√

Index

Water Cooled Screw Chiller

High Efficiency

Stable and Reliable

Accurate Capacity Adjust

Intelligent Control

Eco-Friendly

Features

AHRI Certified

The full series of products are AHRI certified.

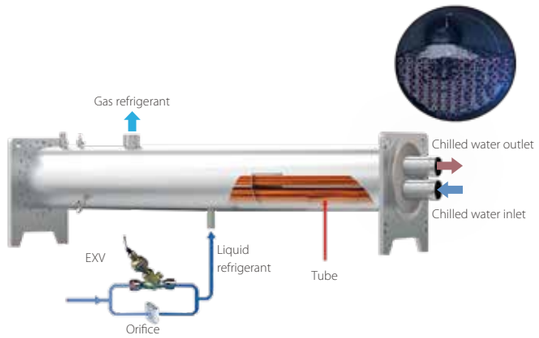
Certified in accoordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 500/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in AHRI Directory at www.ahridirectory.org

Enclosed Motor Design

- The motor is set at the compressor gas inlet and the adopted refrigerant cooling method works together with the unique inlet flow path design to ensure full cooling of the motor. The motor does not send out heat to the equipment room, so the heat dissipation of the chiller does not need to be considered for ventilation of the equipment room.
- The compressor motor adopts large capacity design and the motor directly drives the rotor to achieve very high efficiency.

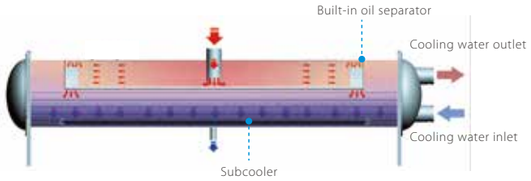
Flooded Evaporator

High efficiency flooded evaporator, high heat exchange efficiency.
The water box at both ends can be disassembled to facilitate maintenance.
Optimized design of the refrigerant distributor can distribute refrigerant evenly, optimize the temperature field and improve the evaporation temperature, so as to improve the operating efficiency.
Optimized design of the baffle plate to avoid the compressor suction with liquid, improving the reliability of the unit.



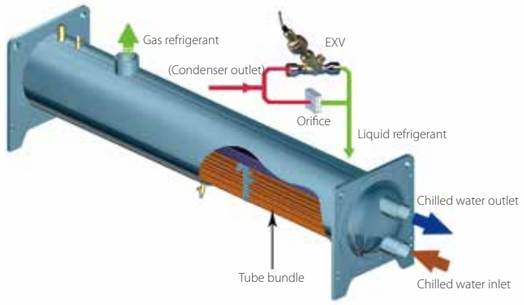
New Condenser

- It adopts the double-side reinforced condenser tube to optimize the tube bundle arrangement design in the condenser.
- The unique design of the built-in oil separator helps address the problem of lubricating oil separation.
- The product optimizes the subcooler design, improves the supercooling temperature and reduces the pressure loss of subcooler, improving heat exchange performance efficiency.
- This product implements uniform gas transmission without any heat transmission blind spots.



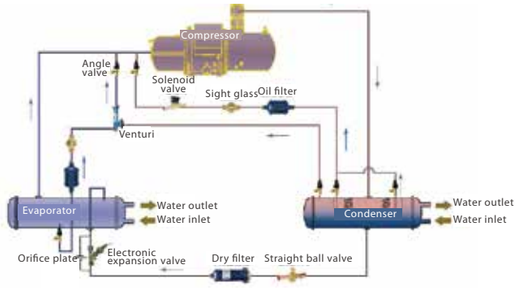
Accurate Cooling Capacity Control

- The unit features an electronic expansion valve and orifice plate to control the refrigerant for the evaporator and the water temperature accurately.
- The electronic expansion valve ischaracterized by quick response, rapid regulation and a large capacity adjust range.



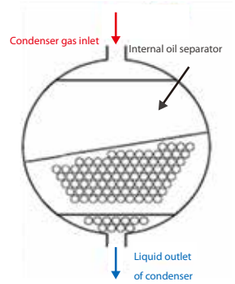
Reliable Oil System

Midea water cooled screw chiller has an oil circuit control system that adopts leading technology, which ensures stable operation of the unit.



Advanced oil control system

Built-in three-stage oil separator for the compressor



Built-in oil separator for the condenser

Oil supply

This system features a differential pressure-type oil supply. All the moving parts in the compressor can stay well lubricated without an external oil pump.

Oil return

- The first oil separation: The compressor is provided with a three-stage oil separator to ensure low oil content.
- The second oil separation: The built-in high efficiency oil separator for the condenser controls the oil separation efficiency to a value above 99.99%, enabling the system to realize normal oil return under both partial load and full load, ensuring reliable and stable operation of the system and increasing the unit operating range.
- Double oil return system: This system adopts oil return through oil separation and Venturi injection. Oil return is implemented through the Venturi tube injection of high pressure gas and oil is not stored in the evaporator. An oil heater is set in the unit. The control system preheats the lubricating oil according to the unit's status to maintain optimal viscosity, optimizing the lubrication function. The external oil filter can be replaced easily.

Multiple Guarantees

Intelligent control of unit safety

The system monitors the unit parameter's changing trends and progressively adjusts the operating status of the unit to ensure safe operation.

Powerful protection function for improved safety

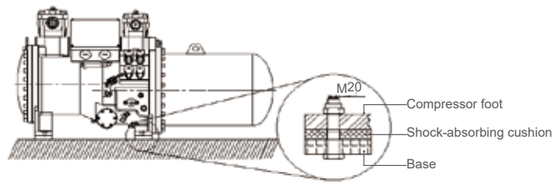
The unit is provided with powerful protection measures to improve operation safety and reliability.

Strict factory test

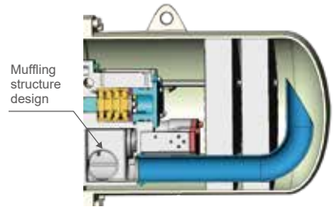
All the units have undergone strict testing before delivery. Only the water pipe and power supply need to be connected during installation.

Quiet Operation

- The sound level is as low as 65 dB(A) when the unit operates with a partial load.
- A standard shock-absorbing cushion is configured between the compressor foot and the metal support, achieving a good damping effect.
- The built-in discharge muffler for the compressor cuts off transmission from the sound source.

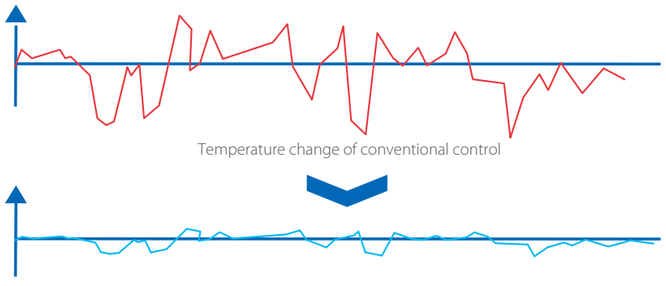


Shock-absorbing cushion installation diagram



Built-in discharge muffler design for compressor

Intelligent Control



- Intelligent load control: Real-time load changes are predicted according to historical data and the real-time load is prospectively revised to avoid frequent fluctuations in the unit water temperature.
- Safe and intelligent unit control: The system monitors the trends of change in the unit's parameters and adjusts the operating status of the unit as necessary to ensure safe operation.
- Intelligent failure response: When the unit fails, in addition to executing the corresponding protective measures, the fault parameters are recorded for manual inspection and troubleshooting.

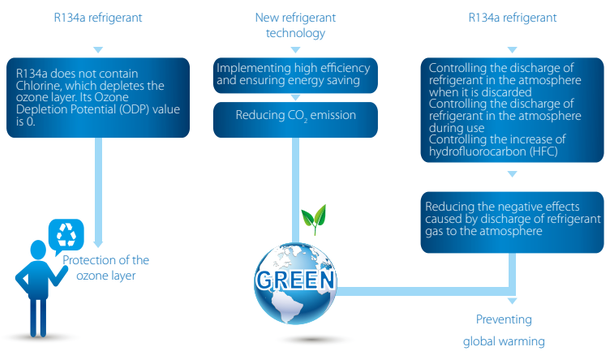
Interface Display

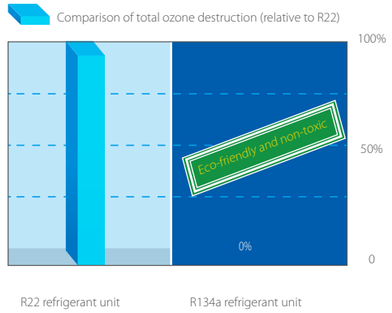
Controller: MIC
Interface display: 7-inch touch screen
Communication interface: RS485
Communication protocol: Modbus-RTU
Protection measures: more than 20 protection measures including the power supply, compressor, pressure and temperature.

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

Eco-Friendly Refrigerant

R134a eco-friendly refrigerant achieves high cooling efficiency, without depleting the ozone layer.
The refrigerant complies with the Montreal Protocol.





Inverter Water Cooled Screw Chiller (SCWF***EV)

AHRI Certified

Enclosed Motor Design

Flooded Evaporator

New Condenser

Accurate Cooling Capacity Control

Reliable Oil System

Multiple Guarantees

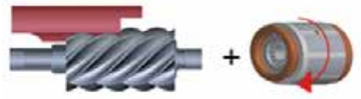
Quiet Operation

Intelligent Control

Eco-Friendly Refrigerant

Vi Optimizing Inverter Technology of Midea's Independently-developed Inverter Twin Screw

Midea's independently-developed volume ratio optimization control technology integrates the characteristic curves of a compressor, inverter, motor and maximizes the performance and reliability of the inverter screw compressor. The maximum isentropic efficiency is 76%, far higher than other adjustment methods.



Start

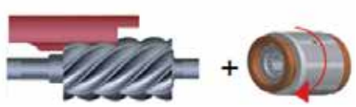
When the motor starts at a low speed, the slide valve rapidly rises to a middle position and the unit does not operate at the low slide valve position.

Loading

The motor speed increases and the slide valve looks for the best Vi position. The built-in algorithm then analyzes the operating parameters online, optimizes to adjust the slide valve position, motor speed and first lifts the slide valve. Then, the motor speed matches the load accurately.

Load reduction

The motor slows and the slide valve looks for the best Vi position. The built-in algorithm then analyzes the operating parameters online, optimizes to adjust the position of the slide valve, motor speed and first lowers the slide valve. Then the slide valve assists in energy regulation.

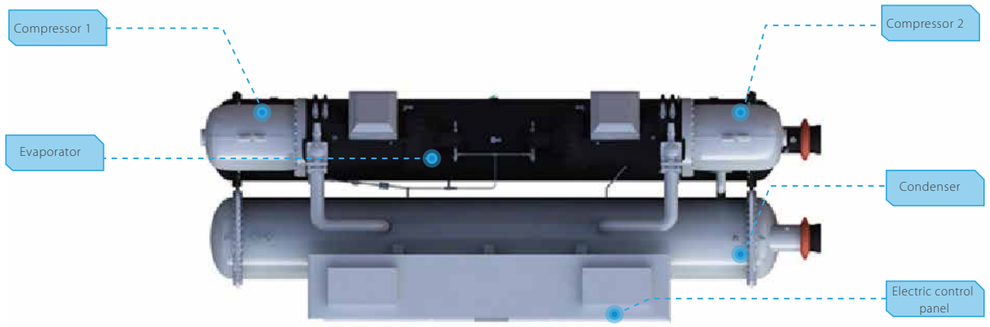


Stop

The motor slows and the slide valve drops to the lowest position. The motor stops after its speed reaches the minimum setting value.

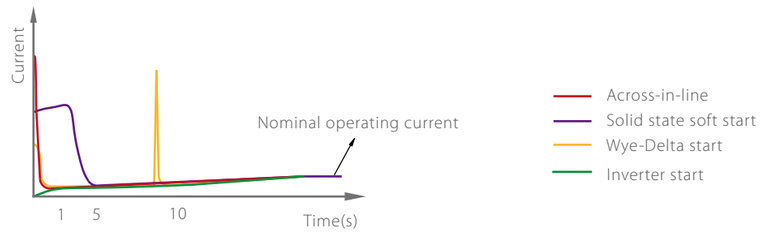
Parallel Dual Compressor Design

The dual-compressor unit is designed with the parallel system of double compressors and the total heat exchange area is used to greatly improve the operation efficiency when the single compressor operates. (Customization of non-parallel system accepted)



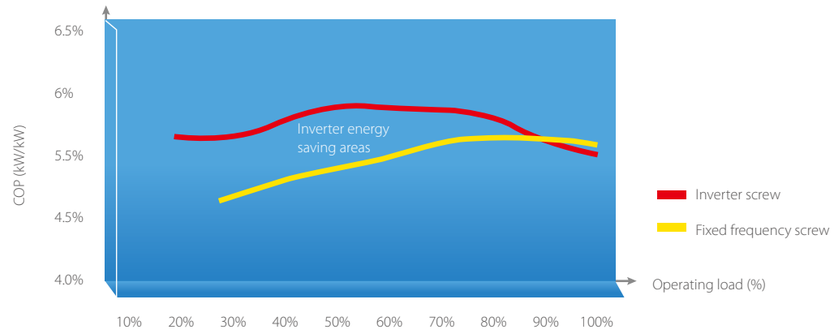
No Impact of the Power Grid

This product utilizes inverter start with a smooth starting current of less than the Wye-Delta starting current, without any current impact, which prolongs the service life of motor.



Energy Saving Principle of Inverter Adjust

The inverter screw unit regulates the cooling capacity by reducing the frequency. The COP of the partial load is better than the fixed frequency unit, which greatly enhances the energy efficiency.

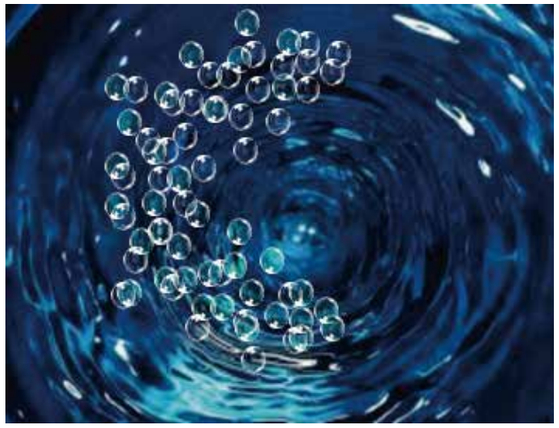


Note: Let's use 7/32°C operating conditions as an example.

Accurate Control

Innovative swirl orifice plate throttling technology:

- The flow resistance increases when the gas content of refrigerant is high before the orifice plate, which greatly improves the cooling capacity attenuation caused by hot gas bypass under the partial load.
- When the condensation pressure is low and the refrigerant in front of the orifice plate is liquid, the liquid flow rate can be accelerated to increase the liquid pply.



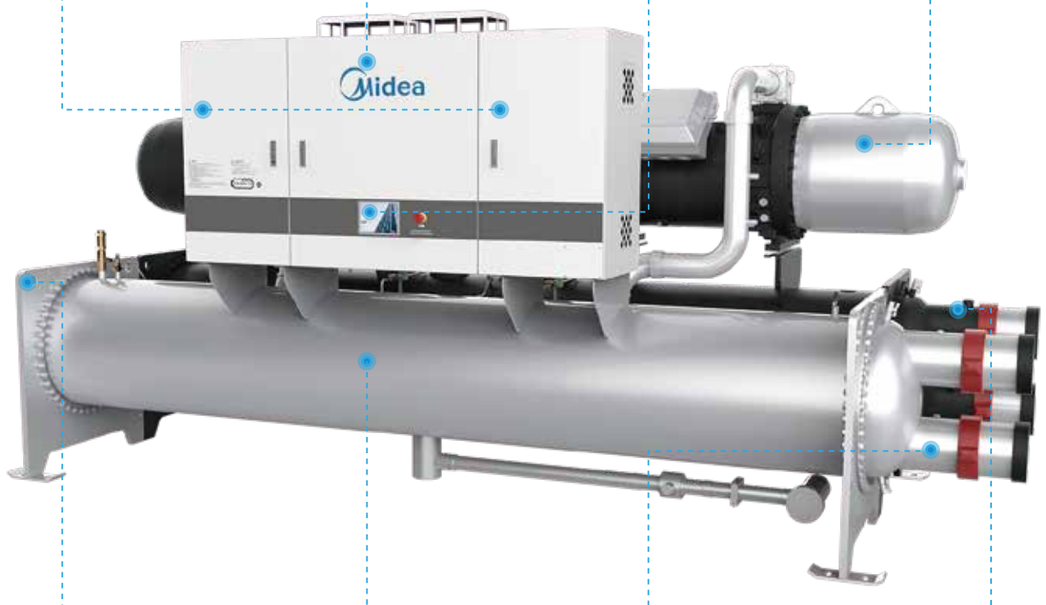
Product Structure

Electric control panel
Flexible sinking design has made a breakthrough in the single plane shape, featuring a lively and futuristic look

Microcomputer control system
Providing auto-diagnosis, adjustment, security protection, remote control and other functions

7-inch colorful touch screen
Easy-to-read unit status; convenient to operate and maintain

Compressor
The compressor screw rotor adopts a new profile. Enclosed motor design and motor is cooled by refrigerant.



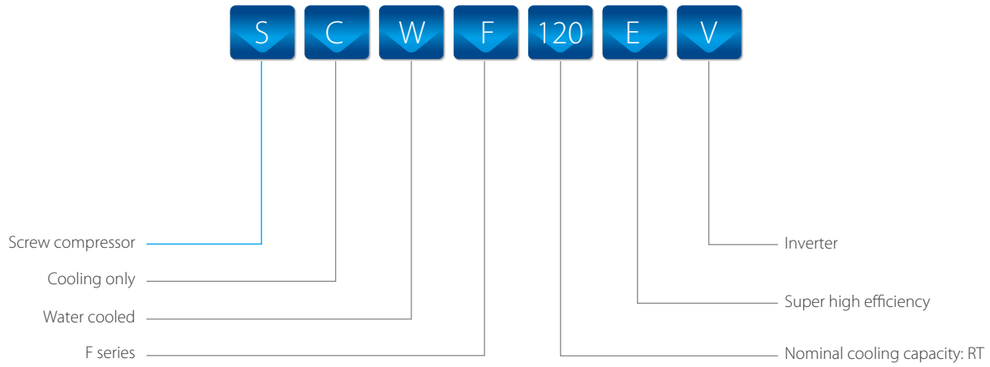
Lifting hole
Lifting hole retained to make handling convenient

Condenser
This product features a double-sided reinforced high-efficiency condenser tube to further improve heat exchange efficiency

Water inlet and outlet located on the same side
Easy installation, cleaning and maintenance

Evaporator
Specially designed liquid equalization plate to optimize the temperature field and achieve optimal heat exchange efficiency

Nomenclature



Specifications

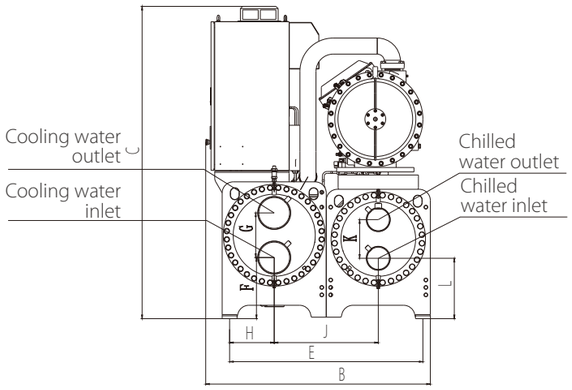
Model			SCWF120EV	SCWF140EV	SCWF160EV	SCWF190EV	SCWF210EV	SCWF240EV	SCWF260EV	SCWF280EV
Cooling capacity		RT	118.9	138.9	158.8	189.7	203.7	236.5	252.3	277.3
		kW	418.2	488.5	558.3	667.2	716.3	831.4	887.1	974.9
Power input		kW	74.53	84.59	92.62	111.1	119.5	138.7	147.0	163
COP		W/W	5.611	5.774	6.028	6.007	5.996	5.996	6.033	5.983
IPLV		W/W	8.672	8.983	9.314	9.043	9.223	9.209	8.868	8.901
Compressor		Qty	1	1	1	1	1	1	2	2
		Type	Semi-hermetic screw compressor							
		Starting method	Inverter							
Capacity adjust range			Single compresser 15%-100%, Dual compressor 8%-100%							
Refrigerant	Type	/	R134a							
	Charge amount	kg	110	120	140	150	160	170	240	245
Power supply			380V-3Ph-50Hz							
Compressor number			1#	1#	1#	1#	1#	1#	1# 2#	1# 2#
Rated current		A	121.8	138.2	151.3	181.5	195.2	226.5	95.6 144.6	106.0 160.2
Max. operating current		A	154.3	206.1	206.1	228.3	245.8	272.6	154.3 228.3	154.3 228.3
Starting current		A	<121.8	<138.2	<151.3	<181.5	<195.2	<226.5	<95.6 <144.6	<106.0 <160.2
Evaporator	Water flow	m^3/h	64.61	75.47	86.25	103.1	110.7	128.5	137.1	150.6
	Pressure drop	kPa	40.0	39.0	41.9	49.5	40.9	40.5	62.7	64.8
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200
Condenser	Water flow	m^3/h	81.52	94.85	107.8	128.9	138.4	160.6	171.2	188.4
	Pressure drop	kPa	50.5	57.8	57.2	60.7	51.2	58.1	37.7	40.2
	Water pipe connection	mm	DN150	DN150	DN150	DN200	DN200	DN200	DN200	DN200
Unit dimension	Length	mm	2713	2713	2713	2738	2970	2970	4430	4430
	Width	mm	1380	1380	1380	1500	1500	1500	1610	1610
	Height	mm	1996	1996	1996	2096	2096	2096	2163	2163
Shipping weight		kg	2470	2952	3007	3270	3331	3472	4910	4945
Running weight		kg	2620	3112	3177	3490	3571	3722	5280	5335

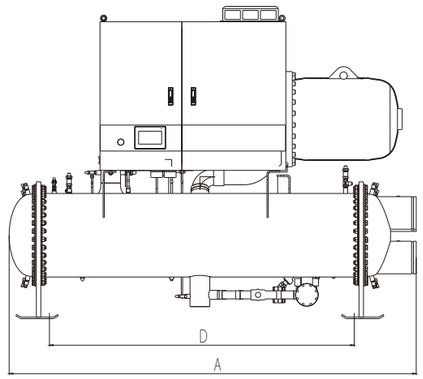
Model			SCWF300EV	SCWF320EV	SCWF350EV	SCWF380EV	SCWF410EV	SCWF430EV	SCWF450EV	SCWF480EV
Cooling capacity		RT	296.5	311.5	342.4	378.5	409.0	429.0	442.8	471.1
		kW	1043	1095	1204	1331	1438	1509	1557	1656
Power input		kW	174.1	180.2	200.5	220.1	239.5	252	257.7	276.6
COP		W/W	5.987	6.076	6.003	6.047	6.004	5.985	6.043	5.988
IPLV		W/W	9.213	9.084	9.513	9.603	9.555	9.509	9.536	9.651
Compressor		Qty	2	2	2	2	2	2	2	2
		Type								
		Starting method	Inverter							
Capacity adjust range			Single compresser 15%-100%, Dual compressor 8%-100%							
Refrigerant	Type	/	R134a							
	Charge amount	kg	250	260	265	280	285	290	300	310
Power supply			380V-3Ph-50Hz							
Compressor number			1# 2#	1# 2#	1# 2#	1# 2#	1# 2#	1# 2#	1# 2#	1# 2#
Rated current		A	171.2 113.3	147.2 147.2	163.8 163.8	179.8 179.8	171.2 220.0	185.7 226.1	210.5 210.5	226.0 226.0
Max. operating current		A	228.3 154.3	228.3 228.3	228.3 228.3	228.3 228.3	228.3 272.6	245.8 272.6	272.6 272.6	272.6 272.6
Starting current		A	<171.2 <113.3	<147.2 <147.2	<163.8 <163.8	<179.8 <179.8	<171.2 <220.0	<185.7 <226.1	<210.5 <210.5	<226.0 <226.0
Evaporator	Water flow		161.1	169.2	186.0	205.6	222.2	233.1	240.6	255.9
	Pressure drop	kPa	68.4	63.7	79.8	76.3	78.7	76.4	76.5	80.0
	Water pipe connection	mm	DN200	DN200	DN200	DN200	DN200	DN200	DN200	DN200
Condenser	Water flow	m^3/h	201.4	211.2	232.5	256.8	277.8	291.5	300.5	320.0
	Pressure drop	kPa	38.3	41.7	57.0	58.4	62.0	61.5	62.6	67.7
	Water pipe connection	mm	DN200	DN200	DN200	DN200	DN200	DN200	DN200	DN200
Unit dimension	Length	mm	4430	4430	4500	4500	4500	4500	4500	4500
	Width	mm	1610	1610	1700	1700	1700	1700	1700	1700
	Height	mm	2163	2163	2198	2198	2198	2198	2198	2198
Shipping weight		kg	4982	5445	5885	5995	6130	6220	6335	6380
Running weight		kg	5392	5865	6375	6515	6680	6800	6915	6980

Note:
1. Performance and efficiency are based on AHRI 550/590-2018.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. 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

Single compressor

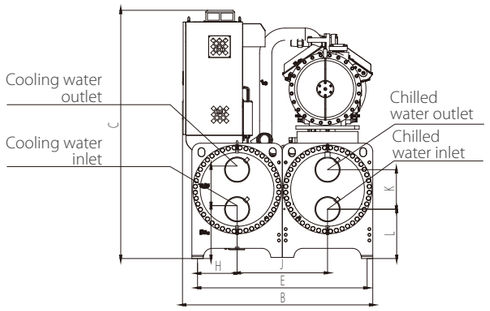


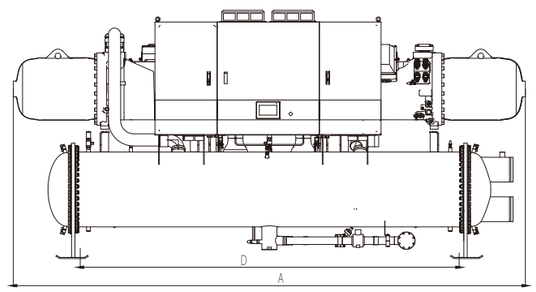


Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWF120EV	2713	1380	1996	2050	1100	381	260	250	600	260	381
SCWF140EV	2713	1380	1996	2050	1100	381	260	250	600	260	381
SCWF160EV	2713	1380	1996	2050	1100	381	260	250	600	260	381
SCWF190EV	2738	1500	2096	2050	1300	411	300	300	700	260	406
SCWF210EV	2970	1500	2096	2050	1300	411	300	300	700	300	411
SCWF240EV	2970	1500	2096	2050	1300	411	300	300	700	300	411

Dual compressor





Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWF260EV	4430	1610	2163	2850	1400	411	350	325	750	350	411
SCWF280EV	4430	1610	2163	2850	1400	411	350	325	750	350	411
SCWF300EV	4430	1610	2163	2850	1400	411	350	325	750	350	411
SCWF320EV	4430	1610	2163	2850	1400	411	350	325	750	350	411
SCWF350EV	4500	1700	2198	3350	1500	436	350	350	800	350	436
SCWF380EV	4500	1700	2198	3350	1500	436	350	350	800	350	436
SCWF410EV	4500	1700	2198	3350	1500	436	350	350	800	350	436
SCWF430EV	4500	1700	2198	3350	1500	436	350	350	800	350	436
SCWF450EV	4500	1700	2198	3350	1500	436	350	350	800	350	436
SCWF480EV	4500	1700	2198	3350	1500	436	350	350	800	350	436

Space Layout

Unit: mm

Model \ Dimensions	S	T	Z	Y
SCWF120EV~SCWF240EV	600	600	3200	1000
SCWF260EV ~SCWF480EV	600	600	4200	1000

Z: Tube removal space for either end.

Flooded Water Cooled Screw Chiller (SCWE***H-B)

AHRI Certified

Enclosed Motor Design

Flooded Evaporator

New Condenser

Accurate Cooling Capacity Control

Reliable Oil System

Multiple Guarantees

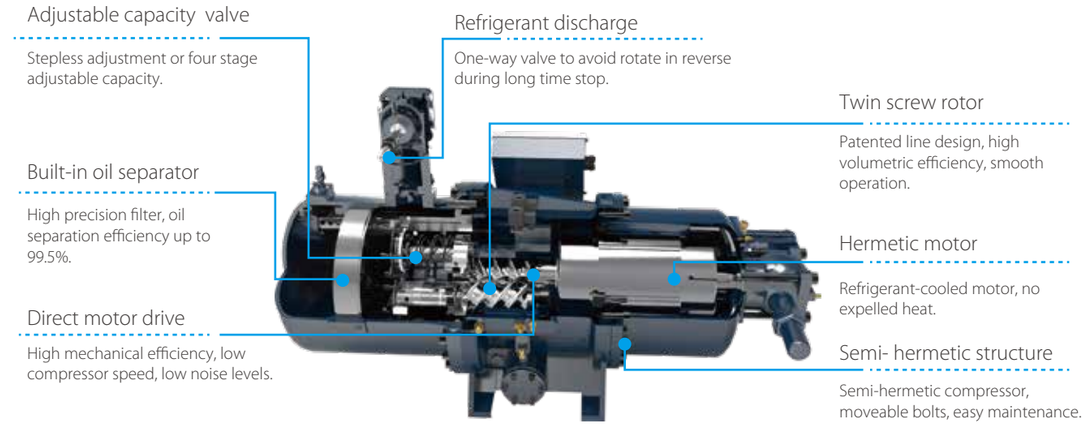
Quiet Operation

Intelligent Control

Eco-Friendly Refrigerant

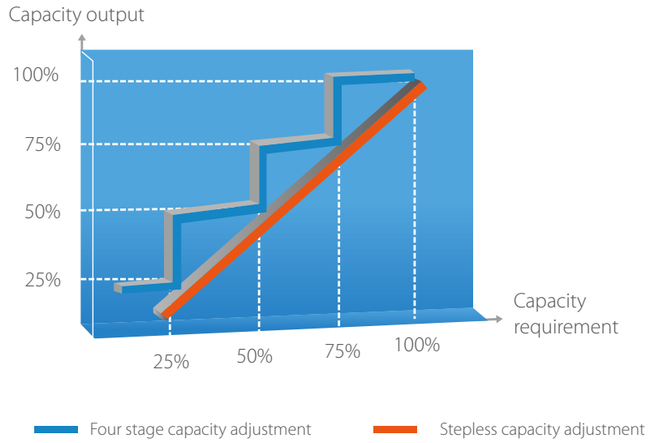
Advanced Twin-rotor Screw Compressor

- The product adopts a semi-hermetic twin-rotor screw compressor. Compared with open structure, it has the advantages of less refrigerant leakage, high transmission efficiency and no heat dissipation in the equipment room.
- The screw rotor adopts the profile design undergoing the optimized compression process to ensure the compressor has excellent volumetric efficiency and low leakage. At the same time, the twin-screw rotor adopts five teeth to six teeth asymmetric design, machining accuracy up to micron level and ensuring stable operation.
- Large capacity motor design, high motor efficiency. Suitable gas passage and clearance design is adopted inside the motor, and the refrigerant is fixed around the motor to ensure full cooling of the motor.
- The compressor adopts the bearing of international famous brand SKF, which has a long service life, ensuring that the continuous operation time of the chiller is at least 50000h.



Stepless Capacity Adjustment

The capacity adjustment system consists of capacity adjust slide valve, solenoid valve and oil pressure piston.



Product Structure

Electric control panel
Flexible sinking design has made a breakthrough in the single plane shape, featuring a lively and futuristic look

Microcomputer control system
Providing auto-diagnosis, adjustment, security protection, remote control and other functions

Compressor
The compressor screw rotor adopts a new profile. Enclosed motor design and motor is cooled by refrigerant

Evaporator
Specially designed liquid equalization plate to optimize the temperature field and achieve optimal heat exchange efficiency

7-inch colorful touch screen
Easy-to-read unit status; convenient to operate and maintain

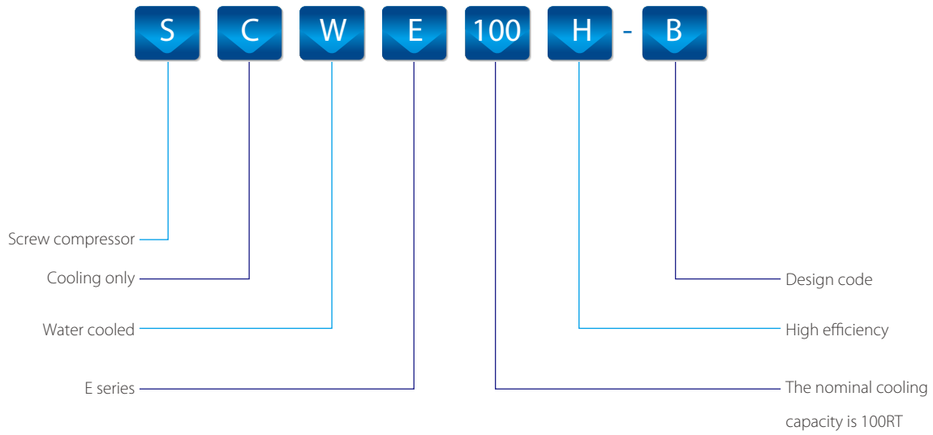
Lifting hole
Lifting hole retained to make handling convenient

Victaulic connection
Simple operation and convenient installation

Water inlet and outlet located on the same side
Easy installation, cleaning and maintenance

EXV
Control the refrigerant and water temperature accurately

Nomenclature



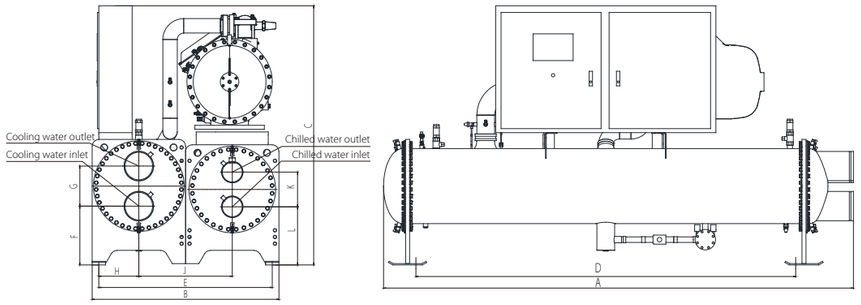
Specifications

Model		SCWE	90H-B	100H-B	110H-B	130H-B	150H-B	170H-B	200H-B	210H-B	230H-B	220H-B	240H-B	260H-B	300H-B	350H-B	390H-B	430H-B	470H-B
Cooling capacity		RT	86.87	94.07	106.9	130.3	148.9	171.1	194.4	213.9	233.3	224.5	243.1	255.8	297.6	343.1	388.5	427.5	466.5
		kW	305.4	330.7	376.0	458.2	523.6	601.6	683.6	752.0	820.4	789.5	854.8	899.4	1046	1206	1366	1503	1640
Power input		kW	52.32	57.20	65.14	79.41	87.65	100.6	114.2	125.2	137.0	132.1	142.9	150.5	174.6	201.3	228.5	248.1	271.3
COP		W/W	5.838	5.783	5.772	5.771	5.974	5.982	5.985	6.006	5.987	5.974	5.980	5.987	5.991	5.995	5.978	6.060	6.045
IPLV		W/W	7.425	7.695	7.689	7.256	7.501	7.720	7.676	8.100	8.186	7.895	7.822	7.872	7.762	7.908	7.994	8.423	8.504
Compressor		Qty	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
		Type	Semi-hermetic screw compressor																
		Starting method	Wye-Delta																
Capacity adjust range			Stepless																
Refrigerant	Type	/	R134a																
	Charge amount	kg	78	82	90	100	120	130	140	155	170	210	230	230	245	282	300	330	350
Power supply			380V-3Ph-50Hz																
Rated current		A	90.3	98.8	112.5	137.1	151.3	173.6	197.2	216.2	236.6	1#: 95.5 2#: 132.7	1#: 95.3 2#: 151.4	1#: 108.5 2#: 151.2	1#: 150.8 2#: 150.8	1#: 150.8 2#: 196.7	1#: 197.3 2#: 197.3	1#: 214.1 2#: 214.1	1#: 234.2 2#: 234.2
Max. operating current		A	136.6	154.6	176.9	208.0	235.0	260.0	301.0	335.0	369.0	1#: 154.6 2#: 208.0	1#: 154.6 2#: 235.0	1#: 176.9 2#: 235.0	1#: 235.0 2#: 235.0	1#: 235.0 2#: 301.0	1#: 301.0 2#: 301.0	1#: 335.0 2#: 335.0	1#: 369.0 2#: 369.0
Starting current		A	258	315	378	415	479	506	650	683	845	1#: 315 2#: 415	1#: 315 2#: 479	1#: 378 2#: 479	1#: 479 2#: 479	1#: 479 2#: 650	1#: 650 2#: 650	1#: 683 2#: 683	1#: 845 2#: 845
Evaporator	Water flow	m^3/h	47.19	51.1	58.09	70.80	80.90	92.95	105.6	116.2	126.8	122.0	132.1	139.0	161.6	186.4	211.0	232.2	253.4
	Pressure drop	kPa	33.2	30.3	38.1	45.8	39.4	50.4	56.1	48.5	56.6	56.6	57.7	63.2	66.4	78.5	78.6	74.6	78.3
	Water pipe connection	mm	DN150									DN200							
Condenser	Water flow	m^3/h	59.22	64.21	73.01	88.99	101.2	116.3	132.1	145.2	158.5	152.6	165.2	178.3	202.1	233.1	264.0	290.0	316.5
	Pressure drop	kPa	43.8	44.4	44.2	56.9	57.3	57.3	55.9	55.5	56.5	29.3	31.1	34.1	34.0	50.4	54.1	53.6	58.4
	Water pipe connection	mm	DN150						DN200										
Unit dimensions	Length	mm	2710	2710	2710	2710	2710	2710	2750	2750	2750	4250	4250	4250	4410	4530	4530	4750	4750
	Width	mm	1200	1200	1200	1200	1200	1200	1400	1400	1400	1500	1500	1500	1500	1600	1600	1600	1600
	Height	mm	1740	1790	1790	1813	1813	1942	1940	2090	2090	2180	2230	2230	2230	2290	2290	2340	2340
Shipping weight		kg	2148	2182	2210	2675	2750	2540	3130	3320	3375	4600	4700	4710	5225	5787	5975	6360	6480
Running weight		kg	2280	2321	2354	2825	2917	2714	3345	3553	3614	4955	5069	5079	5632	6276	6502	6935	7078

Note:
1. Performance and efficiency are based on AHRI 550/590-2018.
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. 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

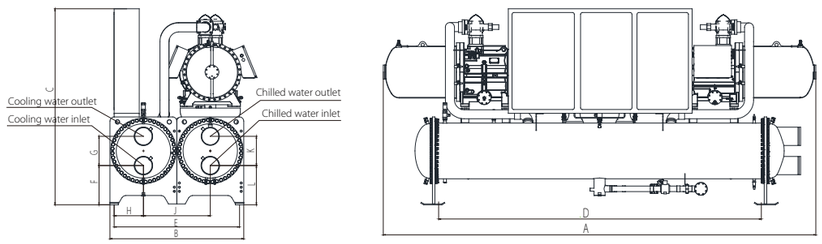
Single compressor



Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWE90H-B	2710	1200	1740	2050	1100	411	260	250	600	260	411
SCWE100H-B	2710	1200	1790	2050	1100	411	260	250	600	260	411
SCWE110H-B	2710	1200	1790	2050	1100	411	260	250	600	260	411
SCWE130H-B	2710	1200	1813	2050	1100	411	260	250	600	260	411
SCWE150H-B	2710	1200	1813	2050	1100	411	260	250	600	260	411
SCWE170H-B	2710	1200	1942	2050	1100	411	260	250	600	260	411
SCWE200H-B	2750	1400	1940	2050	1300	441	300	300	700	260	436
SCWE210H-B	2750	1400	2090	2050	1300	441	300	300	700	260	436
SCWE230H-B	2750	1400	2090	2050	1300	441	300	300	700	260	436

Dual compressor



Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWE220H-B	4250	1500	2180	2850	1400	443	350	325	750	350	443
SCWE240H-B	4250	1500	2230	2850	1400	443	350	325	750	350	443
SCWE260H-B	4250	1500	2230	2850	1400	443	350	325	750	350	443
SCWE300H-B	4410	1500	2230	2850	1400	443	350	325	750	350	443
SCWE350H-B	4530	1600	2290	3350	1500	468	350	350	800	350	468
SCWE390H-B	4530	1600	2290	3350	1500	468	350	350	800	350	468
SCWE430H-B	4750	1600	2340	3350	1500	468	350	350	800	350	468
SCWE470H-B	4750	1600	2340	3350	1500	468	350	350	800	350	468

Space Layout

Unit: mm

Model \ Dimensions	S	T	Z	Y
SCWE90H-B~SCWE230H-B	600	600	2400	1000
SCWE220H-B~SCWE300H-B	600	600	3200	1000
SCWE350H-B~SCWE470H-B	600	600	3700	1000

Z: Tube removal space for either end.

Flooded Water Cooled Screw Chiller (SCWE***M)

AHRI Certified

Enclosed Motor Design

Flooded Evaporator

New Condenser

Accurate Cooling Capacity Control

Reliable Oil System

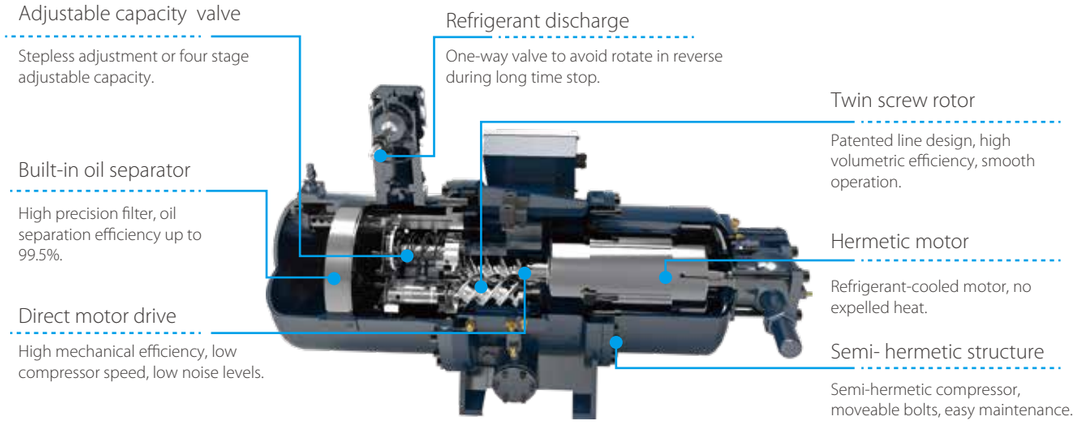
Multiple Guarantees

Quiet Operation

Intelligent Control

Eco-Friendly Refrigerant

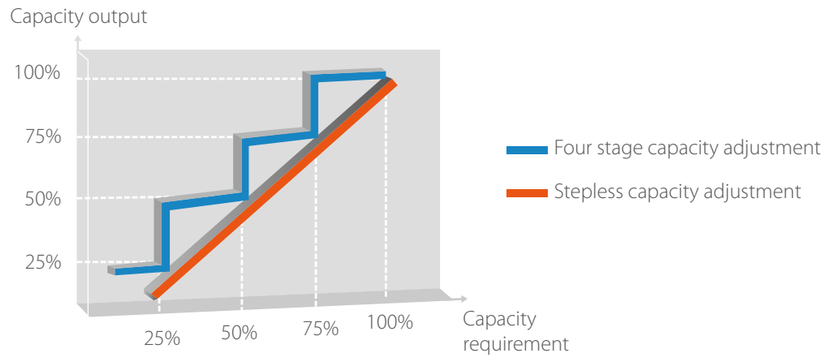
Advanced Twin-rotor Screw Compressor



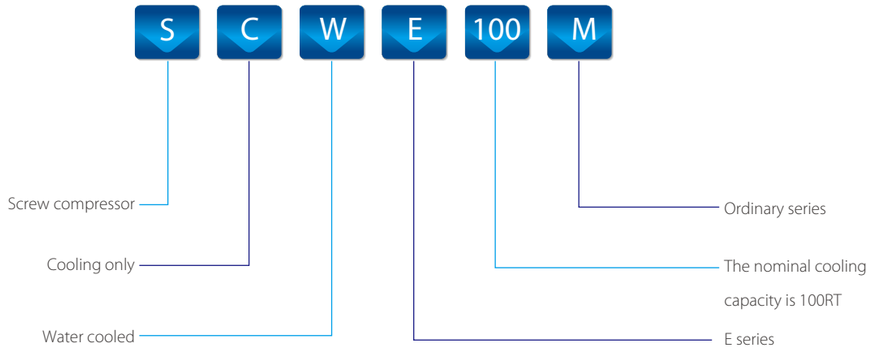
- The product adopts a semi-hermetic twin-rotor screw compressor. Compared with open structure, it has the advantages of less refrigerant leakage, high transmission efficiency and no heat dissipation in the equipment room.
- The screw rotor adopts the profile design undergoing the optimized compression process to ensure the compressor has excellent volumetric efficiency and low leakage. At the same time, the twin-screw rotor adopts five teeth to six teeth asymmetric design, machining accuracy up to micron level and ensuring stable operation.
- Large capacity motor design, high motor efficiency. Suitable gas passage and clearance design is adopted inside the motor, and the refrigerant is fixed around the motor to ensure full cooling of the motor.

Stepless Capacity Adjustment

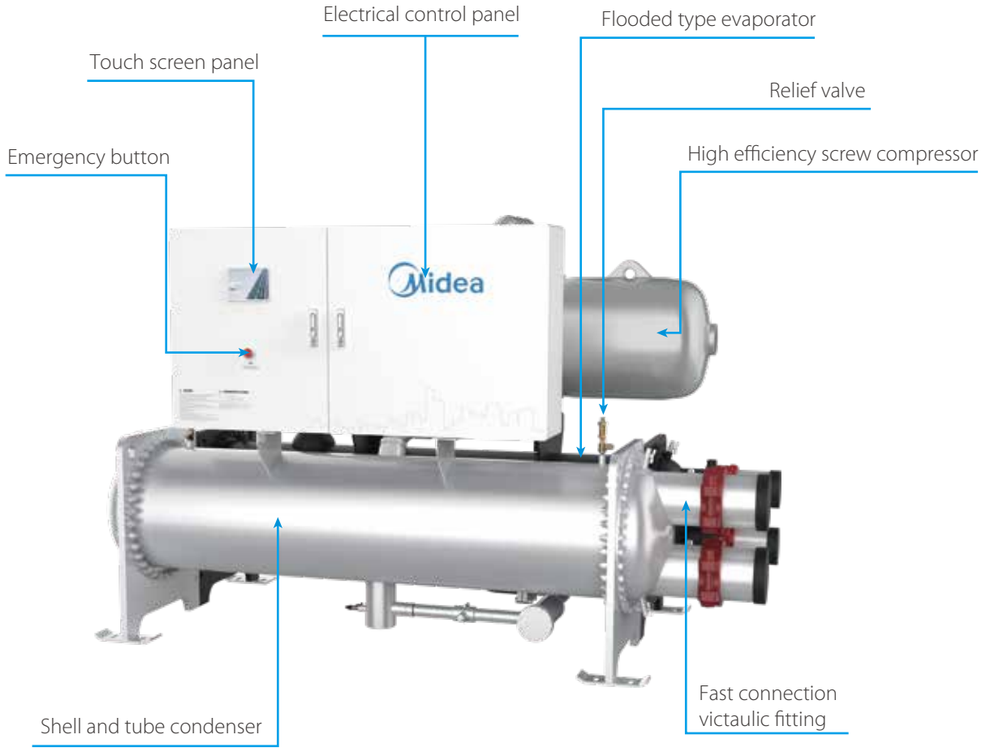
The capacity adjustment system consists of capacity adjust slide valve, solenoid valve and oil pressure piston.



Nomenclature



Product Structure



Specifications

Model			SCWE100M	SCWE130M	SCWE150M	SCWE180M	SCWE200M	SCWE230M	SCWE250M
Cooling capacity		RT	95.85	124.1	152.2	178.5	203.1	227.1	251.1
		kW	337.0	436.3	535.3	627.7	714.1	798.6	882.7
Power input		kW	59.75	76.68	93.61	109.9	126.9	142.3	154.3
COP		W/W	5.640	5.690	5.718	5.710	5.628	5.613	5.720
IPLV		W/W	6.517	6.562	6.953	6.951	7.251	6.847	6.954
Compressor		Qty	1	1	1	1	1	1	1
		Type	Semi-hermetic screw compressor						
		Starting method	Wye-Delta						
Capacity adjust range			Stepless						
Refrigerant	Type	/	R134a						
	Charge amount	kg	100	110	140	140	150	160	170
Power supply			380V-3Ph-50Hz						
Rated current		A	103.2	132.4	161.6	189.8	219.1	245.6	266.5
Max. operating current		A	154.6	208.0	235.0	260.0	301.0	369.0	382.8
Starting current		A	315.0	415.0	479.0	506	650.0	845.0	753.3
Evaporator	Water flow	m³/h	52.07	67.41	82.70	97.0	110.3	123.4	136.4
	Pressure drop	kPa	37.5	43.2	38.9	51.7	55.9	49.6	45.1
	Water pipe connection	mm	150	150	150	150	150	200	200
Condenser	Water flow	m³/h	65.65	84.90	104.1	122.1	139.2	155.7	171.6
	Pressure drop	kPa	53.0	58.3	60.4	62.6	61.7	63.2	65.4
	Water pipe connection	mm	150	150	150	150	200	200	200
Unit dimensions	Length	mm	2713	2713	2713	2713	2738	2970	2970
	Width	mm	1200	1200	1200	1200	1400	1400	1400
	Height	mm	1796	1809	1809	1986	1946	2184	2184
Shipping weight		kg	2170	2190	2780	2660	3140	3341	3452
Running weight		kg	2300	2340	2940	2830	3360	3581	3702

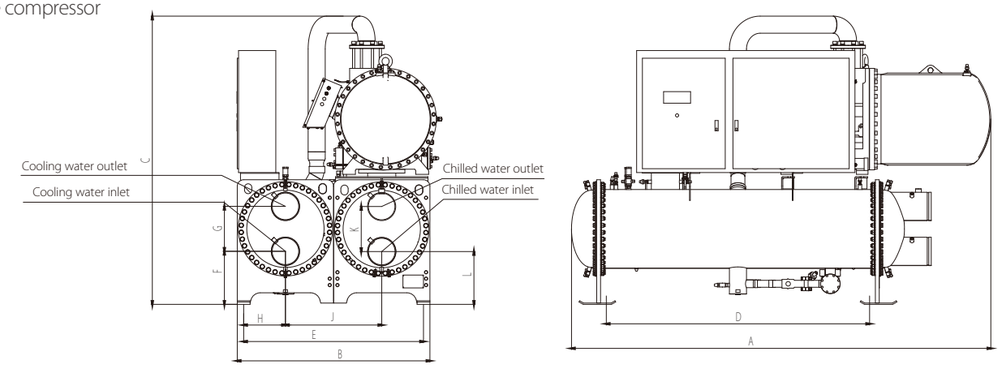
Model			SCWE300M	SCWE340M	SCWE370M	SCWE400M	SCWE460M	SCWE510M	SCWE600M
Cooling capacity		RT	297.6	338.4	366.6	397.4	456.8	502.0	591.6
		kW	1047	1190	1289	1397	1606	1765	2080
Power input		kW	185.8	205.3	221.7	240.8	278.6	304.9	360.9
COP		W/W	5.634	5.796	5.813	5.802	5.793	5.788	5.764
IPLV		W/W	6.912	7.538	7.531	7.628	7.467	7.493	7.429
Compressor		Qty	1	2	2	2	2	2	2
		Type	Semi-hermetic screw compressor						
		Starting method	Wye-Delta						
Capacity adjust range			Stepless						
Refrigerant	Type	/	R134a						
	Charge amount	kg	245	330	330	340	400	400	520
Power supply			380V-3Ph-50Hz						
Rated current		A	320.7	153.8 / 200.6	166.2 / 216.7	207.9 / 207.9	239.3 / 239.3	263.2 / 263.2	311.5 / 311.5
Max. operating current		A	396.8	235.0 / 301.0	235.0 / 301.0	301.0 / 301.0	369.0 / 369.0	382.8 / 382.8	396.8 / 396.8
Starting current		A	888.3	479 / 650	479 / 650	650 / 650	845 / 845	753.3 / 753.3	888.3 / 888.3
Evaporator	Water flow	m³/h	161.7	183.8	199.1	215.9	248.1	272.7	321.4
	Pressure drop	kPa	50.1	64.7	74.7	64.6	74.0	77.6	80.3
	Water pipe connection	mm	200	200	200	200	200	200	250
Condenser	Water flow	m³/h	203.9	230.9	250.1	271.1	311.7	342.6	404.0
	Pressure drop	kPa	68.2	69.0	79.7	77.6	77.1	79.7	79.9
	Water pipe connection	mm	200	200	200	200	200	200	250
Unit dimensions	Length	mm	3265	4650	4650	4650	5180	5180	5950
	Width	mm	1500	1500	1500	1500	1600	1600	2000
	Height	mm	2256	2290	2290	2290	2390	2390	2550
Shipping weight		kg	4266	6232	6232	6415	7075	7318	9326
Running weight		kg	4576	6872	6872	7125	7865	8158	10866

1. Performance and efficiency are based on AHRI 550/590-2018.
   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. 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

380V-3Ph-50Hz

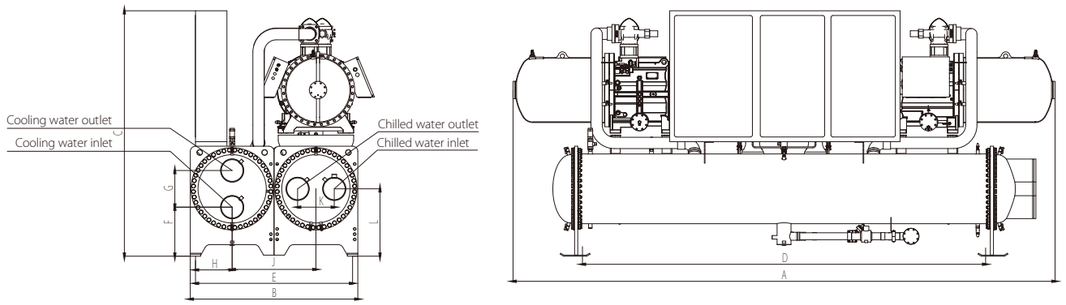
Single compressor



Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWE100M	2713	1200	1796	2050	1100	381	260	250	600	260	381
SCWE130M	2713	1200	1809	2050	1100	381	260	250	600	260	381
SCWE150M	2713	1200	1809	2050	1100	381	260	250	600	260	381
SCWE180M	2713	1200	1986	2050	1100	381	260	250	600	260	381
SCWE200M	2738	1400	1946	2050	1300	461	260	300	700	260	431
SCWE230M	2970	1400	2184	2050	1300	411	300	300	700	260	431
SCWE250M	2970	1400	2184	2050	1300	411	300	300	700	260	431
SCWE300M	3265	1500	2256	2050	1400	413	300	325	750	350	413

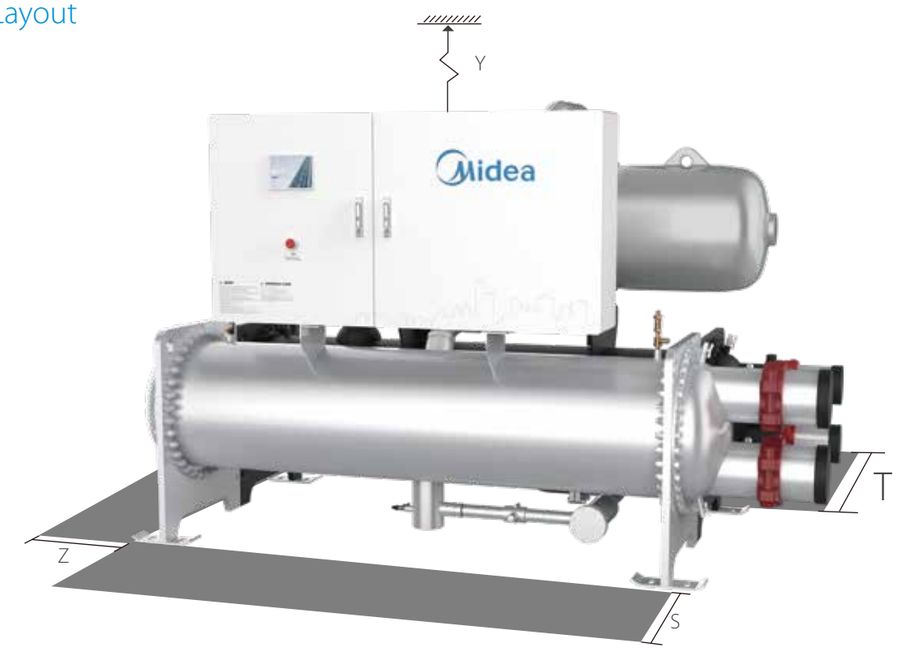
Dual compressor



Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L
SCWE340M	4650	1500	2290	3850	1400	413	300	325	750	350	588
SCWE370M	4650	1500	2290	3850	1400	443	350	325	750	350	588
SCWE400M	4650	1500	2290	3850	1400	443	350	325	750	350	588
SCWE460M	5180	1600	2390	3850	1500	436	350	350	800	350	611
SCWE510M	5180	1600	2390	3850	1500	436	350	350	800	350	611
SCWE600M	5950	2000	2550	3780	1800	498	470	400	1000	400	733

Space Layout



Unit: mm

Model \ Dimensions	S	T	Z	Y
SCWE100M~SCWE300M	600	600	3200	1000
SCWE340M ~SCWE600M	600	600	4200	1000

Z: Tube removal space for either end.

Options

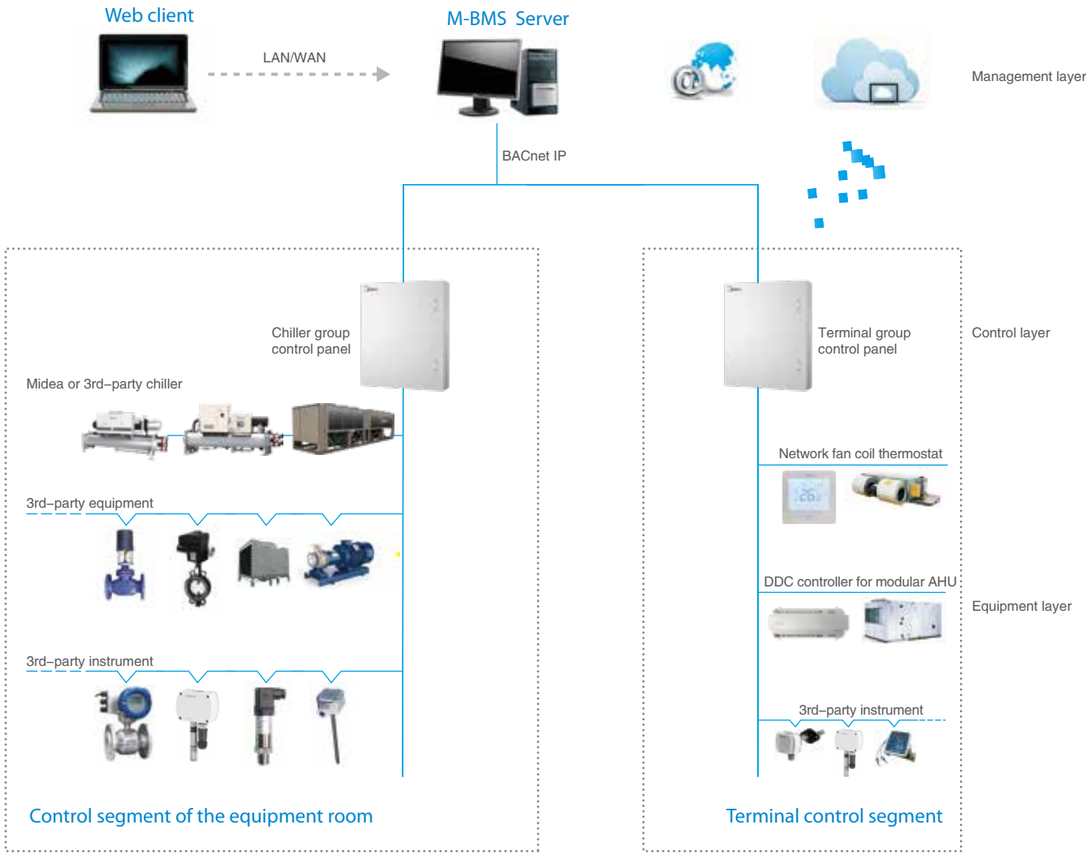
Items	Standard	Optional
Power supply	380V-3Ph-50Hz	400/415V-3Ph-50Hz, 380/440/460V-3Ph-60Hz
Water inlet/outlet connection	Victaulic	Flange
High pressure water box	1.0MPa	1.6MPa, 2.0MPa
Anti-vibration	Rubber pad	Spring isolator
Communication protocol	Modbus-RTU (RS485)	BACnet IP, BACnet MS/TP (RJ-45 port)
High leaving condenser water temperature	45℃	Up to 55℃
Insulation	20mm	40mm
Witness performance testing	×	√
Remote control & monitor panel	×	√
Midea Chiller Plant Control	×	√
Midea Smart Cloud platform	×	√
QuickView	×	√
Tube automatic cleaning system	×	√

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

Intelligent Management

Midea Chiller Plant Control

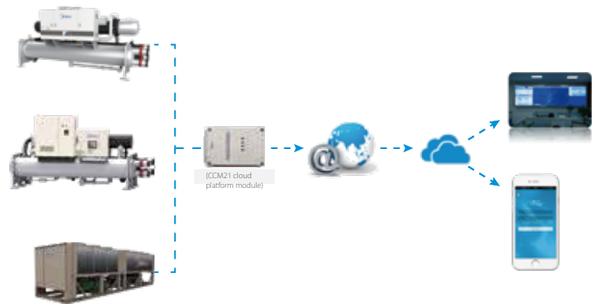
Midea Chiller Plant Control is a group control system for commercial air conditioning that includes air conditioners, water pumps, cooling towers, terminals and related ancillary equipment (including valves, sensors etc.) as the underlying control objects. Based on a powerful control logic program and 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 SmartCloud

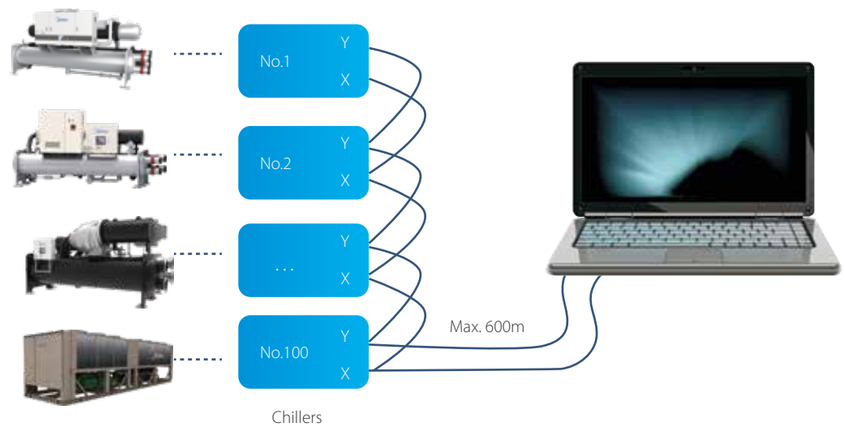
Midea has built a flawless internet-based remote monitoring system, which provides customers with outstanding cloud service via advanced cloud service technologies and the internet. Customers can connect Midea air conditioner to the global remote monitoring system through Midea's IMU smart data acquisition 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.



1. "Midea Smart Cloud" remote Internet monitoring service
2. Cloud data storage
3. Working condition data analysis
4. Quick fault diagnosis
5. Viewing monitoring data through the Web browser

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.

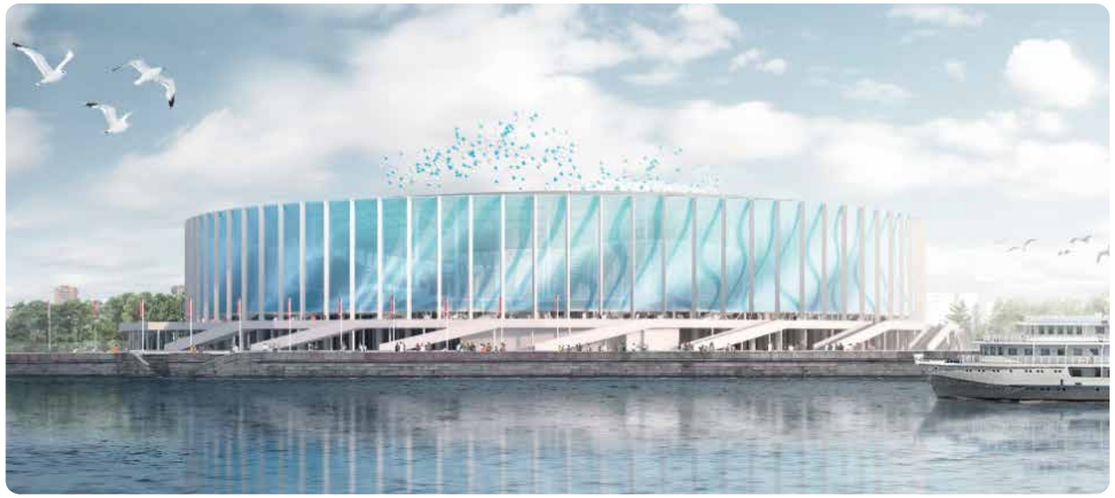


Reference Projects

2018 Russia World Cup Stadiums

Nizhny Novgorod Stadium

City: Nizhny Novgorod
Product: Water Cooled Screw Chiller; Fan Coil Units



Volgograd Arena

City: Volgograd
Product: Water Cooled Screw Chiller; Fan Coil Units

Cosmos Arena

City: Samara
Product: Water Cooled Screw Chiller

The 27th Southeast Asian Games Stadium

Country: Myanmar
City: Nay Pyi Taw
Outdoor Units: Water Cooled Screw Chiller
Indoor Units: MAHU
Total Capacity: 4,000RT

Pullman Hotel & Resort Mandalika (Five Star)

Country: Indonesia
City: Lombok
Outdoor Units: Water Cooled Screw Chiller
Indoor Units: FCU & AHU
Total Capacity: 900RT

Butovo Mall

Country: Russia
City: Moscow
Outdoor Units: Water Cooled Screw Chiller
Total Capacity: 5,000kW
Completion Year: 2015

The Tier 1 Solar Product Manufacturing Plant-Seraphim

- Country: South Africa
- City: Port Elizabeth
- Outdoor Units: Water Cooled Screw Chiller
- Total Capacity: 940RT

The Prime Minister Office Building

- Country: Tajikistan
- City: Dushanbe
- Outdoor Units: Water Cooled Screw Chiller
- Indoor Units: FCU & AHU
- Total Capacity: 2,880kW

Top Glove in Malaysia

- Country: Malaysia
- City: Klang
- Outdoor Units: Water Cooled Screw Chiller
- Indoor Units: FCU & AHU
- Total Capacity: 3,400RT

The University of Georgia

- Country: Georgia
- City: Tbilisi
- Outdoor Units: Water Cooled Screw Chiller
- Indoor Units: FCU
- Total Capacity: 1,200kW