



WORLD STANDARD AIR CONDITIONERS

CWEEV *SERIES*



Inverter Water Cooled Screw Chiller

Features

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.

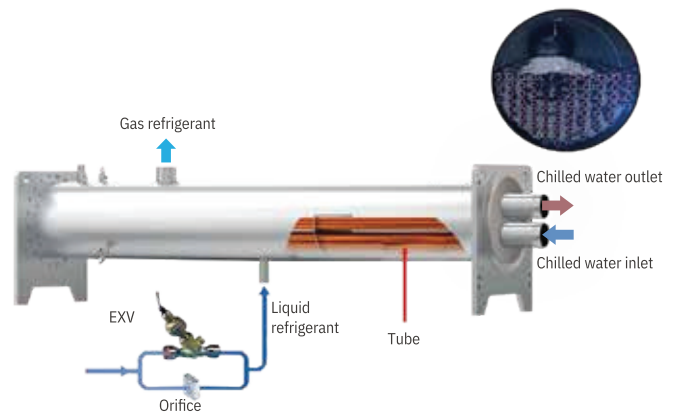
Flooded Evaporator

High efficiency flooded evaporator, high heat exchange efficiency.

The water box at both ends can be disassembled to facilitate maintenance.

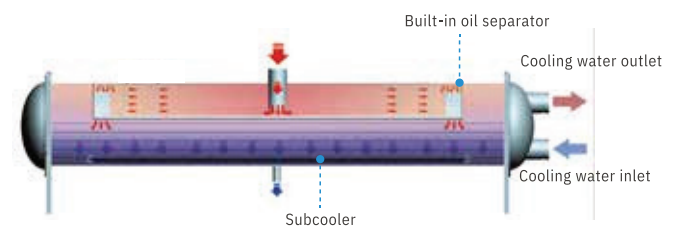
Optimized design of the refrigerant distributor can distribute refrigerant evenly, optimize the temperature field and improve the evaporation temperature, so as to improve the operating efficiency.

Optimized design of the baffle plate to avoid the compressor suction with liquid, improving the reliability of the unit.



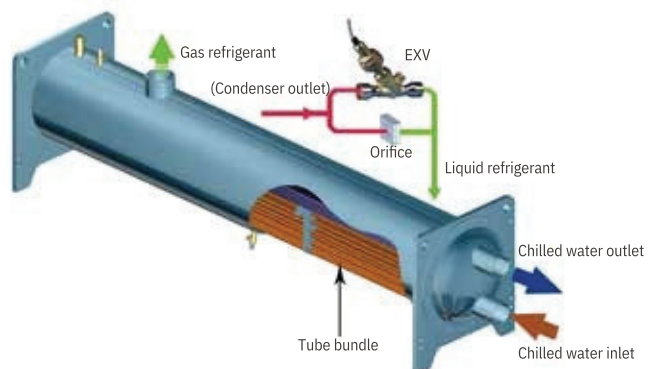
New Condenser

- ❖ 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.



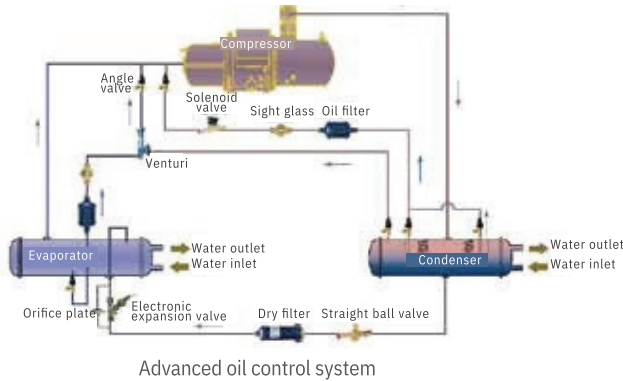
Accurate Cooling Capacity Control

- ❖ 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 is characterized by quick response, rapid regulation and a large capacity adjust range.

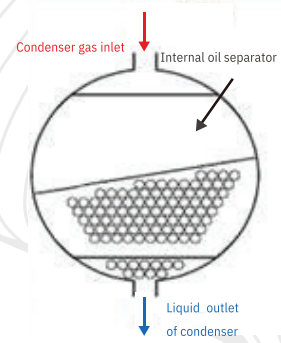


Reliable Oil System

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



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

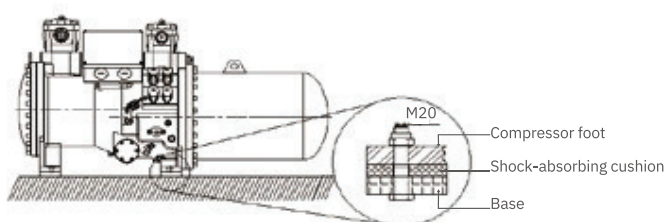
The unit is provided with powerful protection measures to improve operation safety and reliability.

Strict factory test

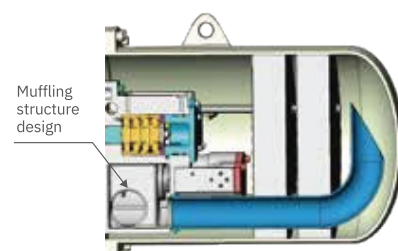
All the units have undergone strict testing before delivery. Only the water pipe and power supply need to be connected during installation.

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.

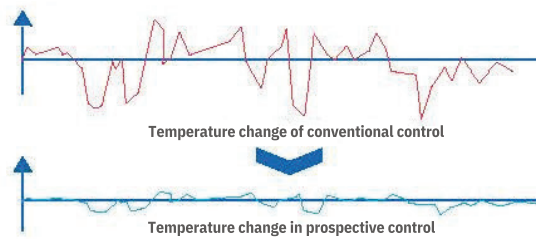


Shock-absorbing cushion installation diagram



Built-in discharge muffler design for compressor

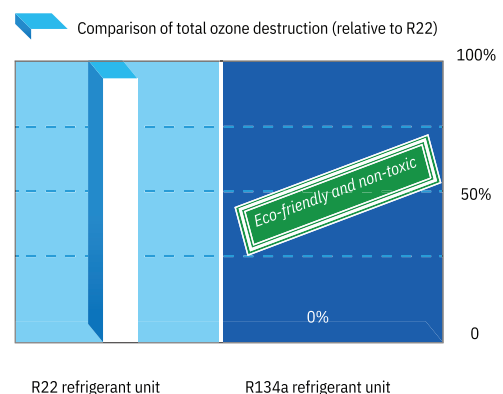
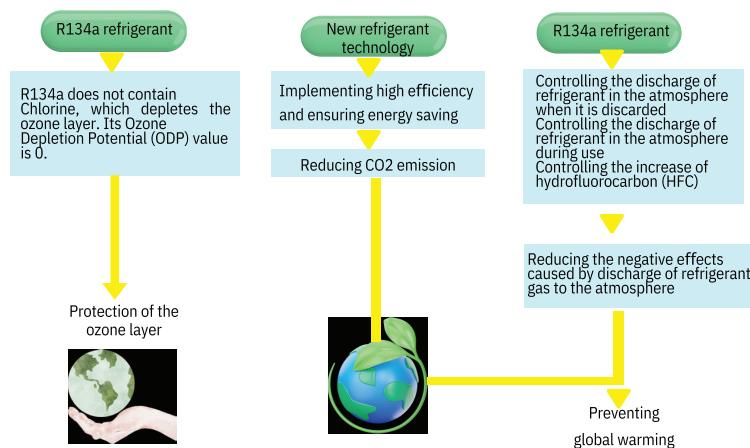
Intelligent Control



- ❖ 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.

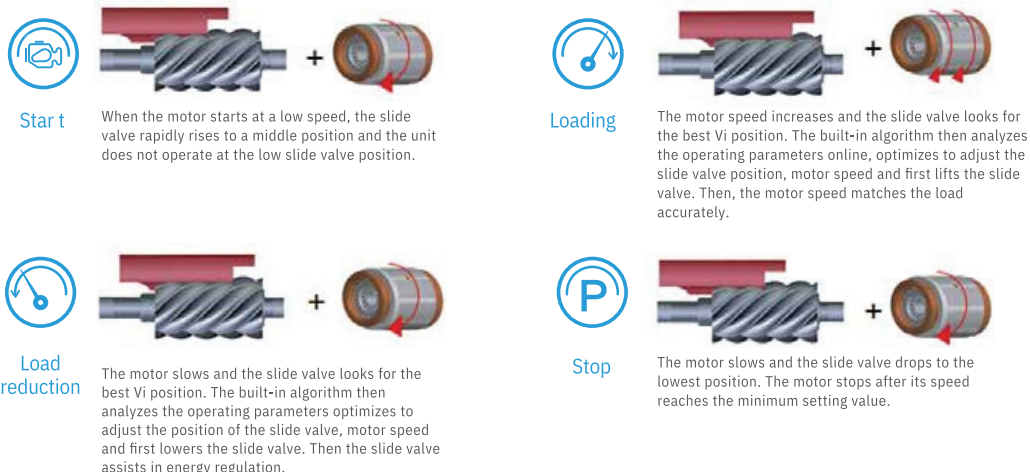
Eco-Friendly Refrigerant

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



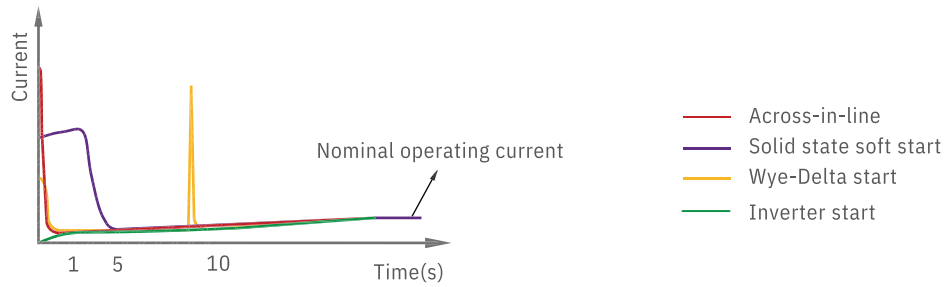
Vi Optimizing Inverter Technology of Independently-developed Inverter Twin Screw

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.



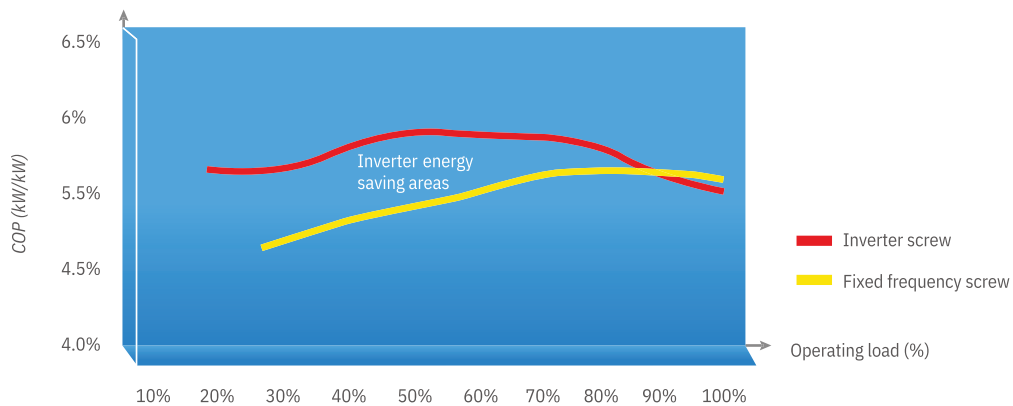
No Impact of the Power Grid

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.



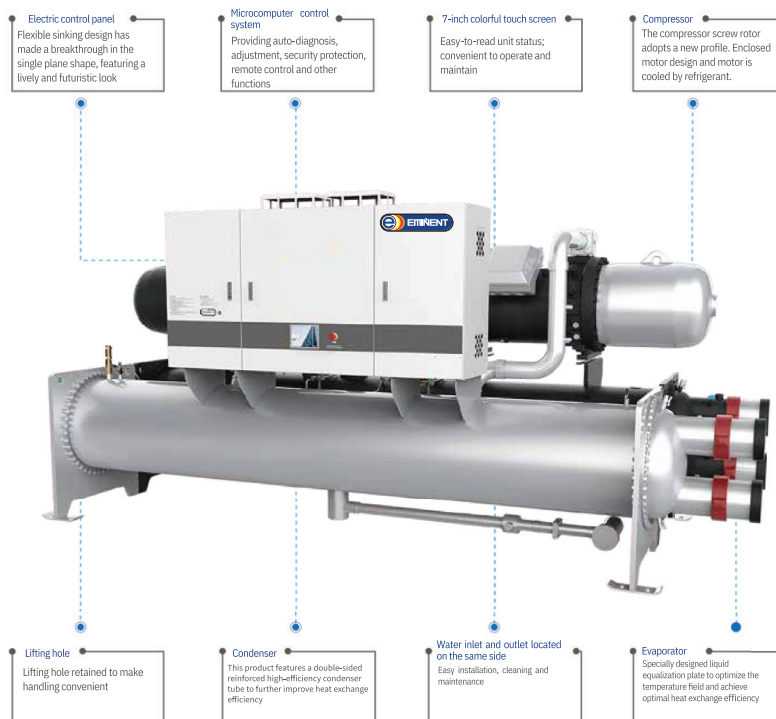
Energy Saving Principle of Inverter Adjust

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.

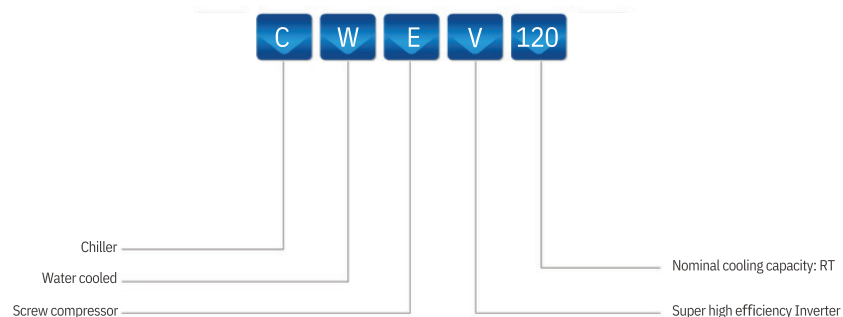


Note: Let's use 7/32°C operating conditions as an example.

Product Structure



Nomenclature



Model		CWEV-120	CWEV-140	CWEV-160	CWEV-190	CWEV-210	CWEV-240	CWEV-260	CWEV-280			
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	6.005	5.994	5.994	6.034	5.980			
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	1	2			
	Type	Semi-hermetic screw compressor										
	Starting method	Inverter										
Capacity adjust range		Single compressor 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	1218	138.2	1513	1815	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	<1218	<138.2	<1513	<1815	<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	815.2	948.5	1078	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		CWEV-300	CWEV-320	CWEV-350	CWEV-380	CWEV-410	CWEV-430	CWEV-450	CWEV-480									
Cooling capacity	RT	296.5	315	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	5.990	6.076	6.004	6.047	6.004	5.988	6.042	5.986									
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	Semi-hermetic screw compressor																
	Starting method	Inverter																
Capacity adjust range		Single compressor 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#							
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	272.6	245.8	272.6	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	m ³ /h	1611	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	2014	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:
- Cooling: chilled water inlet/outlet=12°C/7°C; Outdoor ambient temperature 35°C DB.
 - As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.

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