



# OIL FREE CENTRIFUGAL CHILLER



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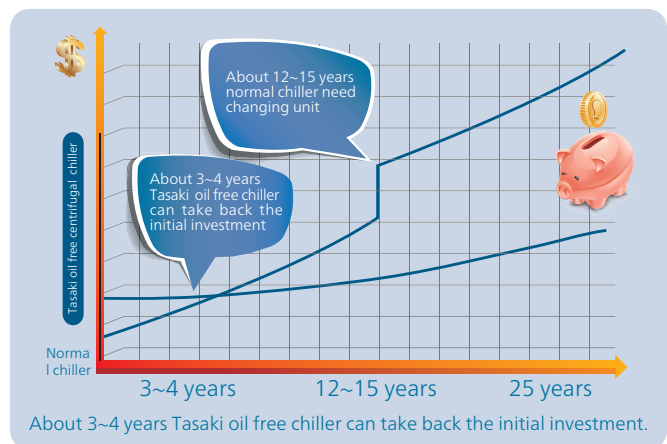


## High Efficiency

### Energy saving and high efficiency

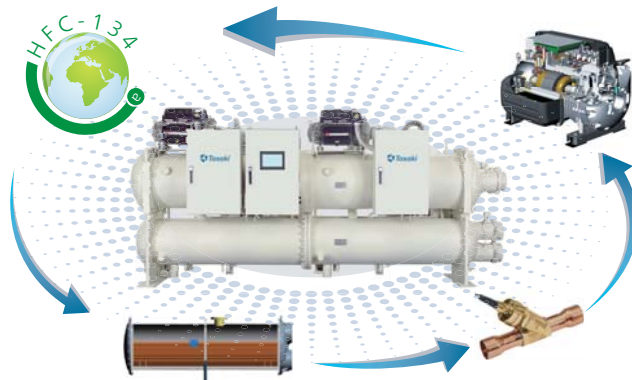
The unit adopts the turbo inverter compressor technology and frictionless technology, which will enhance the energy efficiency greatly. Water cooled series IPLV(integrated part-load value AHRI standards) can be 11.98(Air-cooled series IPLV is 6.0). Comparing with normal centrifugal chiller, Haier centrifugal IPLV is 50% higher.

OIL FREE CENTRIFUGAL CHILLER



## High efficient refrigeration cycle system design

### High efficient environment friendly refrigerant R134a



### High efficient Compressor

Designed for HFC-134a  
Oil free  
DC conversion synchronous motor  
Twin-stage centrifugal

### Electronic expansion valve

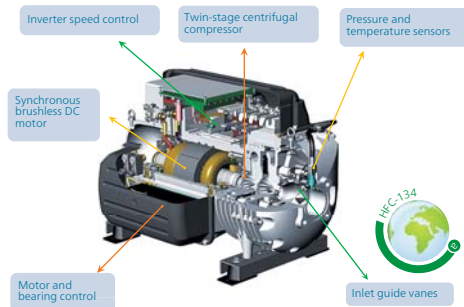
It will control the liquid refrigerant spraying into the evaporator precisely control the compressor, evaporator and condenser running at the optimum efficiency

### High efficient flooded evaporators

High efficiency heat transfer, convenient maintenance

## Turbocor compressor technology

The chillers either water-cooled or air-cooled, are designed to optimize the performance of the high efficient danfoss turbocor oil-free centrifugal compressor technology.



## Permanent-magnet motor and Landing bearing

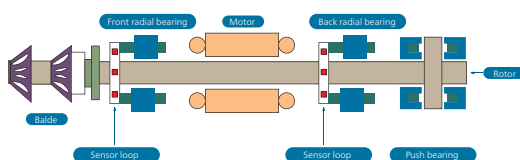
The compressor motor is magnetic permanently, which is supplied voltage by PWM (pulse width management) to realize variable speed running. The landing bearing will go upward before the unit starts up, which will keep a certain distance automatically and ensure no friction.

The radial bearing is to bear the axis after the compressor is powered down, to avoid the touch between the axis and the other metal surface.



## Magnetic bearing technology

Magnetic bearing and orientation sensor: Two radial bearings and one axial bearing compose the digital magnetic bearing system. The movement parts are made of permanent magnet and electric magnet will suspend on the magnet and move without friction. The orientation sensor will confirm the precise position of the rotor at max. 6,000,000 times per minute.



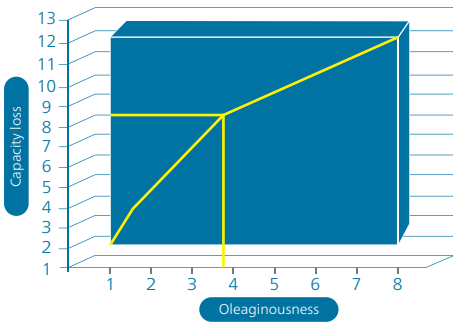
# OIL FREE CENTRIFUGAL CHILLER

## High Efficiency

### Frictionless system

The movement parts of magnetic bearing system centrifugal compressor are composed of two radial magnetic bearings and one axial magnetic bearing. so the digital magnetic bearing system will be suspended when compressor is running. the movement parts do not need oil, which avoid that oil film in the heat exchanger lays on the pipe to reduce the heat exchanging efficiency. thus it will ensure the product has the consistent excellent performance in its operation period.

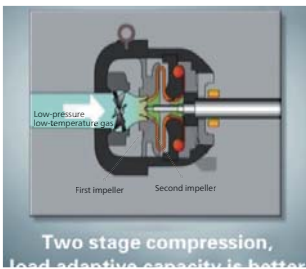
The oil content of old type chiller is 9% on average, which will reduce the efficiency up to 15% to 20%. Tasaki's magnetic bearing system inverter centrifugal chiller can enhance efficiency over 15% because of oil-free lubrication system.



### Inverter driving

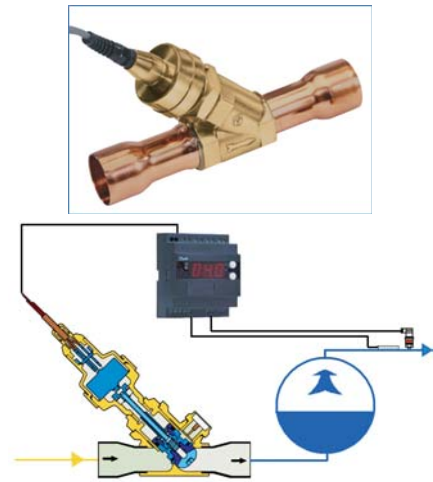
The inverter centrifugal compressor adopts the integrated driving module. on the condition of condensing temperature decreasing or load reducing, lower the compressor revolution, then optimum the compressor energy efficiency with 5%~100% of rated load.

Optional: digital load balancing valve, compressor even can work normally even when the load almost closes to 0.



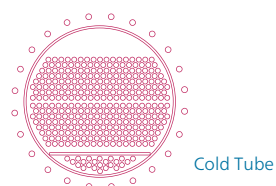
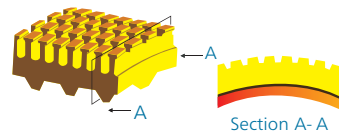
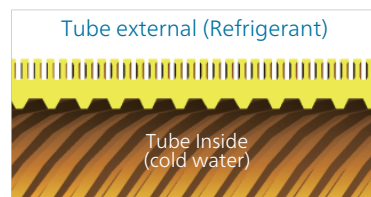
### EEV (electronic expansion valve)

Adopt electronic expansion valve. It will control the volume of liquid refrigerant spraying into the evaporator precisely. Adopt the special electronic expansion valve driving module, which will control the stepping motor operation due to the different load, adjust valve open angle, control refrigerant flow volume, and control the compressor, evaporator and condenser running at the optimum efficiency.



### High efficiency heat exchange tube design technology

- The new design adopt high efficiency heat exchange tube.
- The tube adopt special layout make refrigerant flow improvement in the evaporator.



## AHRI certificate

All models are qualified for AHRI certificate, so the products capacity and EER are guaranteed.



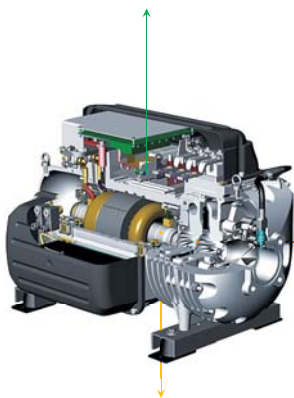
## High Reliability

### Long life

Compressor is made from the aerial class aluminum mold and the high strength thermal plastic electronic case, which can keep the compressor long-time and high efficient running.

Aerospace materials and technology, ensure 25 years reliable efficient operation.

The moving parts adopt aviation alloy material, which ensure unit reliability and the life above 25 years.

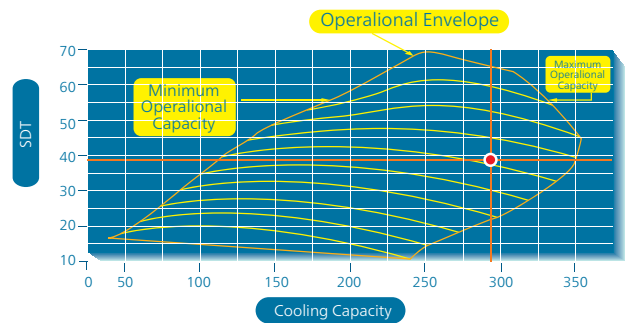


Aeroengine turbine design technology.

Aerospace equipment Intelligent multilevel reliability control which ensure unit can automatic processing the problems in the operation in any case, such as the case of pow failure etc...

## Compressor safe operation

Compressor control module will supply the performance curves and according to the curves, adjust the running speed in time to ensure the compressor running safely.



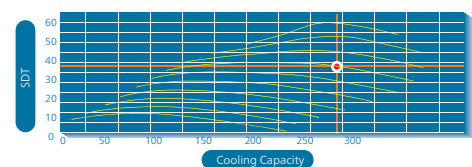
## Safety operation

In the case of a power outage, the compressor is fully protected. Motor becomes a generator and charge capacitors. There is 60 seconds of power reserved in capacitors. Touchdown bearings are used as a back up bearing system for catastrophic failure.

## Comfort

### Flexible capacity adjustment

When condensing temperature goes down or the heat load is decrease, the compressor speed will reduce, the system control the refrigerant output from 2%~100% of the rated load freely, optimize the compressor energy.



## Silence and less vibration, more comfortable

Fully frictionless operation, The device vibration is close to 0. Low running noise. Lower than \*70dB(A), while the normal chiller's is higher than 85dB(A). Haier chiller doesn't need the anti-vibration parts.

\*For water-cooled model [air-cooled model is 75dB(A)]

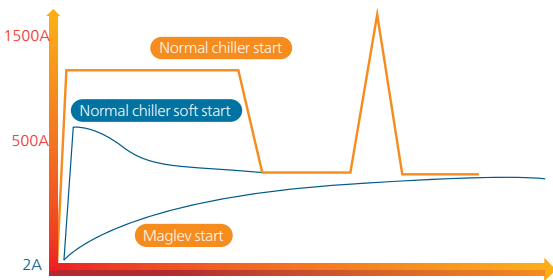
# OIL FREE CENTRIFUGAL CHILLER

## Low Cost

### Low installation and maintenance costs

#### Low start current

Because the bearing adopt magnetic bearing system technology, when the system start up, only 2A current is necessary to suspend the axis, low starting torque, which results in low interference for electricity net. Only 2A start current for single compressor unit. The normal chiller start current can reach 1500A. Because the unit adopt Low start current, the installed don't need soft starter which will save US 80,000 costs.



#### High applicability and low installation costs

The unit adopts 380V power supply, then 10KV power supply is not required. It will be much safer since the examination and approval process are not required either.

Haier chiller adopt 380V power supply without approval procedure

Without approval procedure

Ordinary screw adopt 10KV power supply need more approval procedures

More approval procedures

**Risk of Electric**

Safety Electricity

High-voltage Dangerous

VS

Restricted Areas (staff only)

#### Oil-free system, low maintenance costs

The unit adopts no oil in the chiller means no oil contamination over time, so design efficiency is maintained effortlessly. This design can save as much as US 60,000 maintenance costs during the life cycle.



## Convenience

### Advanced control system and convenient operation

Big LCD touch screen. Chinese and English are selectable  
Calendar

Fault inquires

Water system equipment interlocking

Remote control

Unit operation parameters quick inquiry



Chiller Parameter		Water inlet	Water outlet
Compressor Parameter	Evaporator	0.0	0.0
	Water Temperature (°C)	Water inlet	Water outlet
Condenser		0.0	0.0
Operation Curve	Domestic Water	Water inlet	Water outlet
		0.0	0.0
History Curve			

### BMS function

The unit can realize BMS function; meanwhile, remote control function can be combined with interlock function and timer running function, to realize non-person control.

## Easy Installation

### Easy to transport

Because the modular oil free centrifugal chiller is compact, so it is easy to transport by the elevator.

The normal oil free chiller



The modular oil free chiller

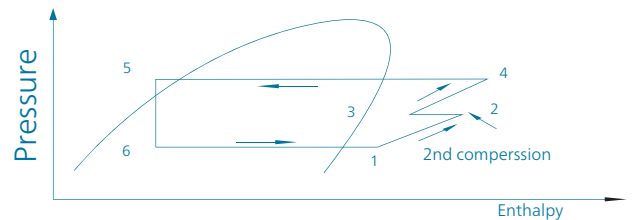


Transport by the elevator

## Equipment Principle

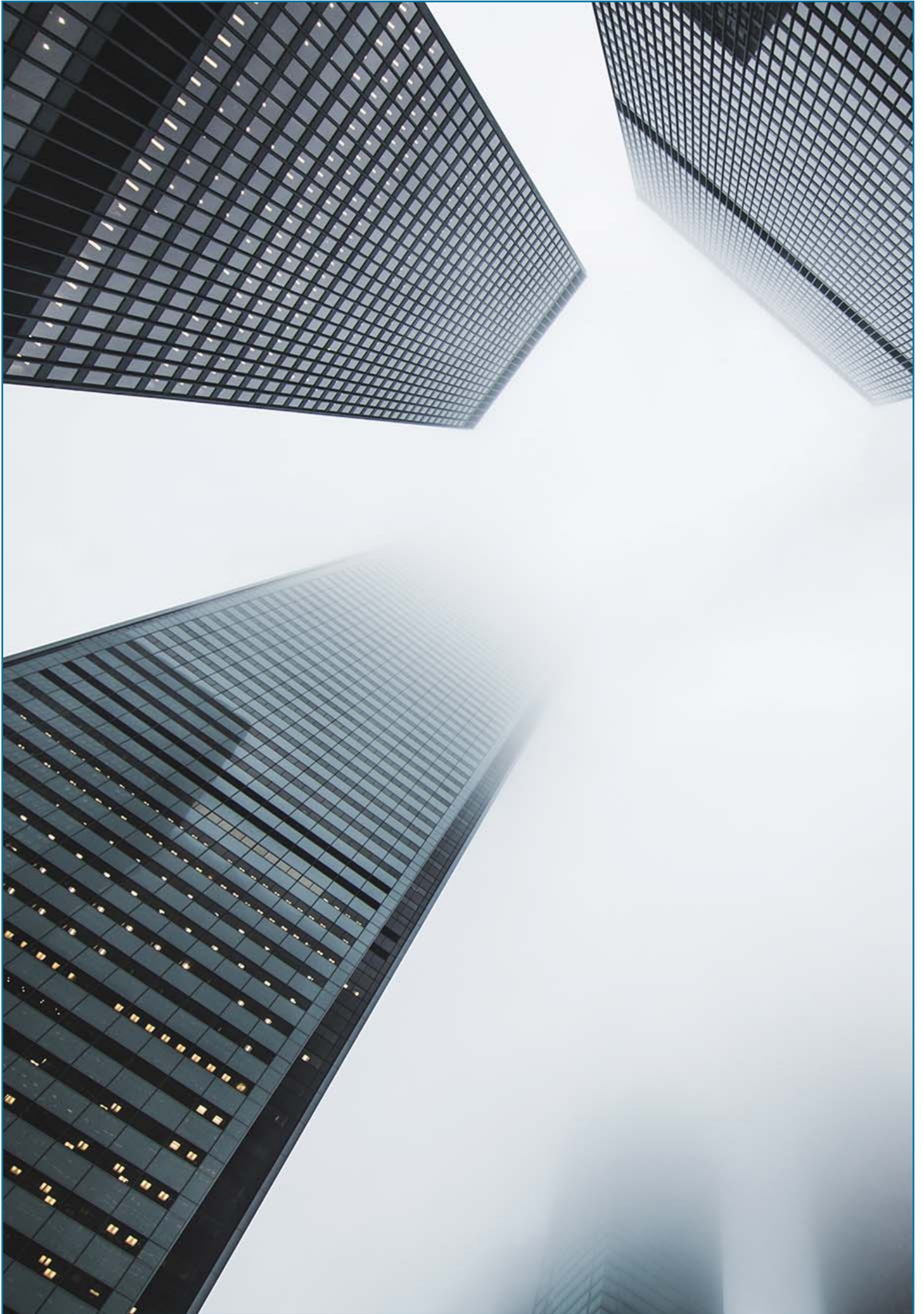
### Twin-stage compression

The high temperature and high pressure refrigerant will be discharged from the compressor (No.4), and enter the condenser, releasing the heat energy to the cooling water in pipe, then change into the medium temperature and high pressure gas (No.5). After passing by the throttle valve, refrigerant turns into the low temperature and low pressure gas. Next it enters the evaporator, turning into gas with low temperature and low pressure (No.1) by absorbing the energy from the chilled water (12/7°C) flowing by the pipe in evaporator. After that the gas will be compressed in compressor to turn to high temperature and high pressure liquid and be discharged again.



### System control principle

The unit will count the air return overheat state due to the air return temperature, then send signal to the control module. The control module will send directly to the centrifugal compressor and the electronic expansion valve. So the centrifugal compressor will adjust the revolution rate, and the electronic expansion valve will adjust the flowing volume. The load control can be adjusted at random, saving energy greatly.





# OIL FREE CENTRIFUGAL CHILLER



\*Picture is based on single compressor model

Model		CC0350PANI	CC0440PANI	CC0700PANI	CC0790PANI	CC0880PANI	
Combination		A	B	2*A	A+B	2*B	
Cooling capacity	kW	350	440	700	790	880	
Total Power input	KW	102	125	203	226	246.5	
EER	KW/kW	3.43	3.52	3.45	3.5	3.57	
Starting current(Compressor)	A	2	2	2	2	2	
Max. running current	A	250	280	500	530	560	
Max. power input	KW	148	166	296	314	332	
Power supply	Ph/V/Hz	3N/380V/50Hz					
Refrigerant throttle type		Electronic expansion valve					
Capacity control		5%~100%					
Safe protection		compressor overload protection, safe protection, low water flow protection, antifreezing protection, fan motor overload protection, lack of phase protection					
Compressor	Type	Magnetic bearing compressor					
	Quantity	1	1	2	2	2	
Refrigerant	Type	R134a					
	Charge	kg	220	255	440	475	510
Air side heat exchanger	Type	High efficiency copper tube+hydroponic aluminum foil					
	Fan typ	Axial fan with low noise					
	Fan quantity	6	8	12	14	16	
Water side heat exchanger	Type	Flood type					
	Rated water flow	m <sup>3</sup> /h	60	76	120	136	151
	Inlet/outlet pipe	DN	150	150	150	150	150
	Water dirt coefficient	m <sup>2</sup> .°C/kW	0.0172				
	Standard pressure	MPa	1				
	Water side resistance	KPa	85	88	86	89	90
External dimension	Unit length	mm	4060	5260	7690	8890	10090
	Unit width	mm	2200	2200	2200	2200	2200
	Unit height	mm	2720	2700	2700	2700	2700
Weight	Net weight	kg	3400	3985	6840	7425	8010
	Gross weight	kg	3450	4050	6940	7540	8140
	Operation weight	kg	3500	4230	7080	7810	8540

Note: 1. Above parameters is based on the standard products;  
 2. Above products standard pressure is 1.0 Mpa, if pressure higher than 1.0Mpa, should contact with haier technology engineer;  
 3. Operating ambient temperature range : 15~43 C ;  
 4. Except CC0350PANI/CC0440PANI model, other models are combination ,also separately transport;  
 5. Due to our policy of innovation some specifications maybe changed without notification;"

# OIL FREE CENTRIFUGAL CHILLER



\*Picture is based on single compressor model

Model		CC1050PANI	CC1140PANI	CC1230PANI	CC1320PANI	
Combination		3*A	2*A+B	A+2*B	3*B	
Cooling capacity	KW	1050	1140	1230	1320	
Total Power input	KW	303	325.5	348.5	364.6	
EER	KW/kW	3.47	3.5	3.53	3.62	
Starting current(Compressor)	A	2	2	2	2	
Max. running current	A	750	780	810	840	
Max. power input	KW	444	462	480	498	
Power supply	Ph/V/Hz	3N/380V/50Hz				
Refrigerant throttle type		Electronic expansion valve				
Capacity control		5%~100%				
Safe protection		compressor overload protection, safe protection, low water flow protection, antifreezing protection,fan motor overload protection,lack of phase protection				
Compressor	Type	Magnetic bearing compressor				
	Quantity	3	3	3	3	
Refrigerant	Type	R134a				
	Charge	kg	660	695	730	765
Air side heat exchanger	Type	High efficiency copper tube+hydroponic aluminum foil				
	Fan typ	Axial fan with low noise				
	Fan quantity	18	20	22	24	
Water side heat exchanger	Type	Flood type				
	Rated water flow	m <sup>3</sup> /h	181	196	212	227
	Inlet/outlet pipe	DN	250	250	250	250
	Water dirt coefficient	m <sup>2</sup> .°C/kW	0.0172			
	Standard pressure	MPa	1			
	Water side resistance	KPa	40	42	43	45
External dimension	Unit length	mm	11320	12520	13720	14920
	Unit width	mm	2200	2200	2200	2200
	Unit height	mm	2700	2700	2700	2700
Weight	Net weight	kg	10280	10865	11450	12035
	Gross weight	kg	10430	11030	11630	12230
	Operation weight	kg	10660	11390	12120	12850

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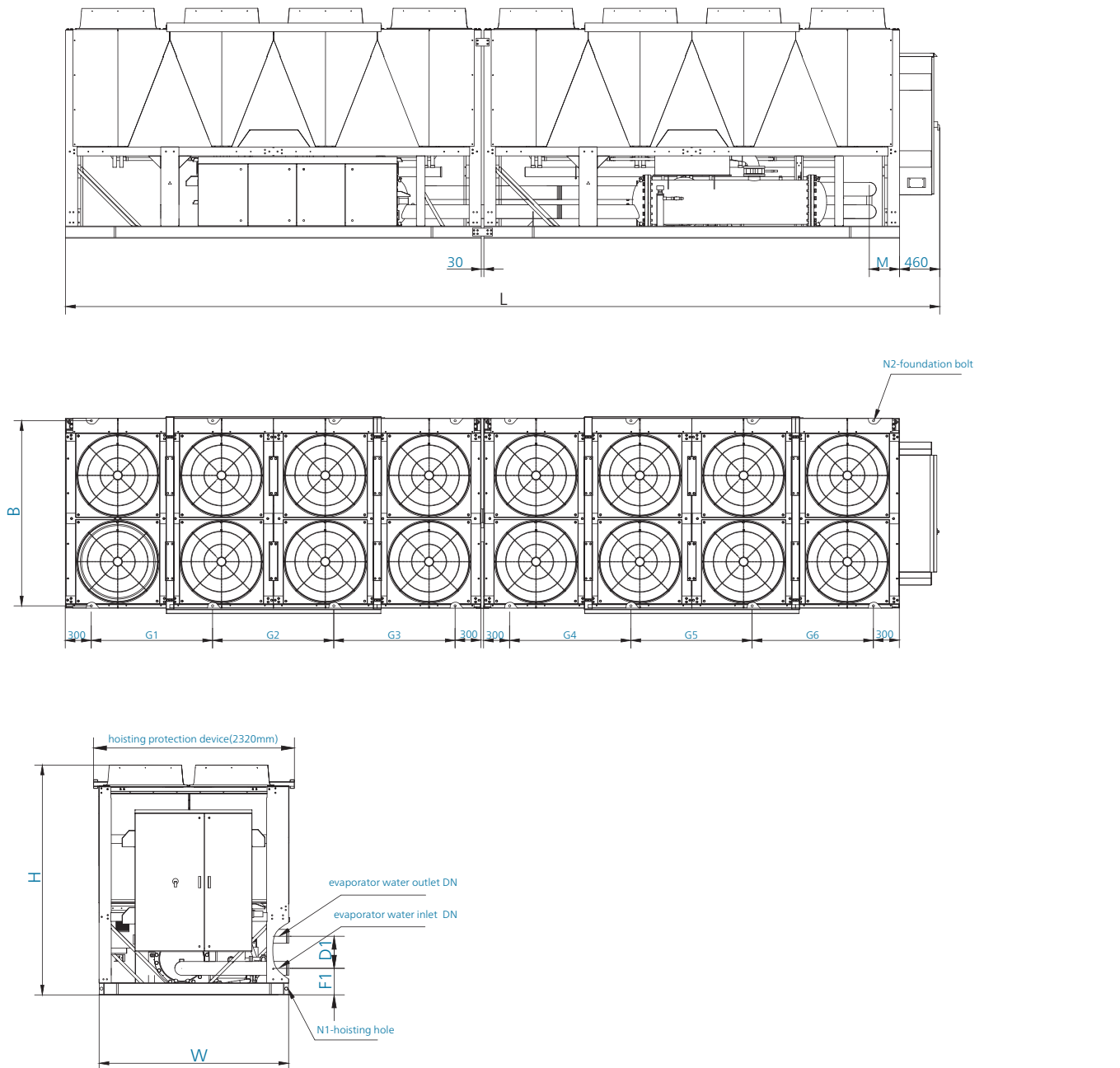
Model		CC1400PANI	CC1490PANI	CC1580PANI	CC1670PANI	CC1760PANI	
Combination		4A	3*A+B	2*A+2*B	A+3*B	4B	
Cooling capacity	kW	1400	1490	1580	1670	1760	
Total Power input	KW	400	423.8	445	462.6	482.2	
EER	KW/kW	3.5	3.52	3.55	3.61	3.65	
Starting current(Compressor)	A	2	2	2	2	2	
Max. running current	A	1000	1030	1060	1090	1120	
Max. power input	KW	592	610	628	646	664	
Power supply	Ph/V/Hz	3N/380V/50Hz					
Refrigerant throttle type		Electronic expansion valve					
Capacity control		5%~100%					
Safe protection		compressor overload protection, safe protection, low water flow protection, antifreezing protection,fan motor overload protection,lack of phase protection					
Compressor	Type	Magnetic bearing compressor					
	Quantity	4	4	4	4	4	
Refrigerant	Type	R134a					
	Charge	kg	880	915	950	985	1020
Air side heat exchanger	Type	High efficiency copper tube+hydroponic aluminum foil					
	Fan typ	Axial fan with low noise					
	Fan quantity	24	26	28	30	32	
Water side heat exchanger	Type	Flood type					
	Rated water flow	m <sup>3</sup> /h	241	256	272	287	303
	Inlet/outlet pipe	DN	250	250	250	250	250
	Water dirt coefficient	m <sup>2</sup> .°C/kW	0.0172				
	Standard pressure	MPa	1				
External dimension	Water side resistance	KPa	75	78	80	86	90
	Unit length	mm	14950	16150	17350	18550	19750
	Unit width	mm	2200	2200	2200	2200	2200
Weight	Unit height	mm	2700	2700	2700	2700	2700
	Net weight	kg	13800	14385	14970	15555	16140
	Gross weight	kg	14000	14600	15200	15800	16400
	Operation weight	kg	14300	15030	15760	16490	17220

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## Unit Dimension Diagram

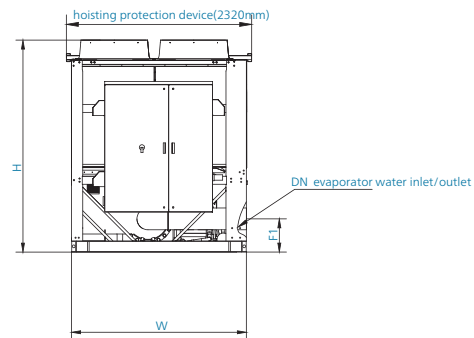
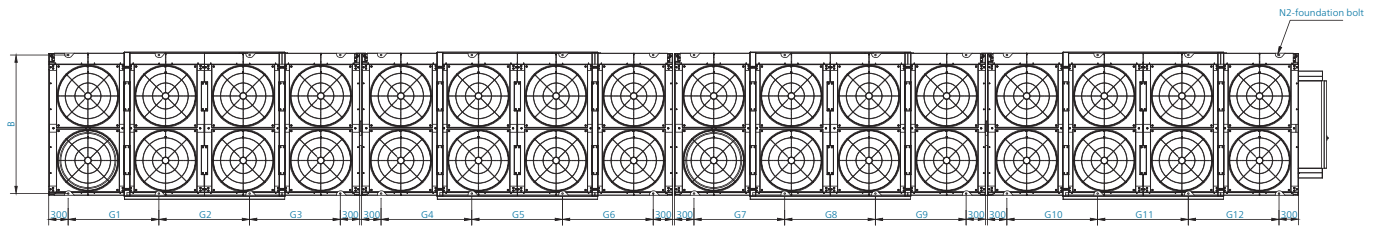
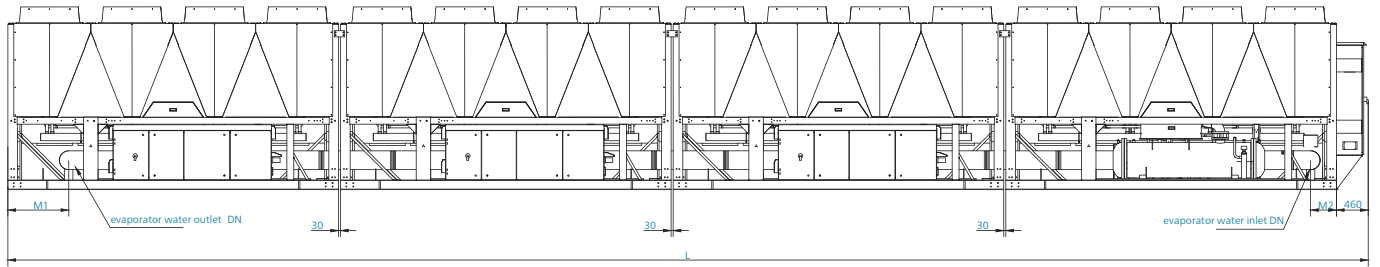
•Air cooled oil free centrifugal chiller dimension diagram



Model	dimension mm			installation dimension mm							pipe connection dimension mm			hoisting	foundation	
	L	W	H	B	G1	G2	G3	G4	G5	G6	D1	F1	M	DN	hole number	bolt number
CC0700PANI	7690	2200	2700	2138	1500	1500	1500	1500	1500	1500	260	304	350	DN150	8	12
CC0790PANI	8890	2200	2700	2138	1500	1500	1400	1400	1400	1400	260	304	350	DN150	8	14
CC0880PANI	10090	2200	2700	2138	1400	1400	1400	1400	1400	1400	260	304	350	DN150	8	16

# Unit Dimension Diagram

- Air cooled oil free centrifugal chiller dimension diagram

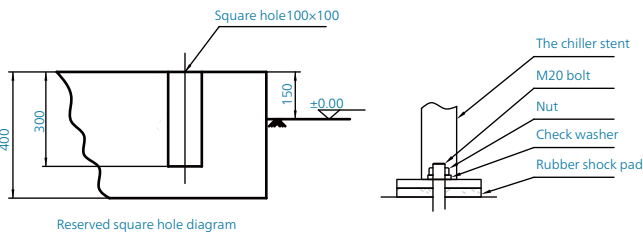
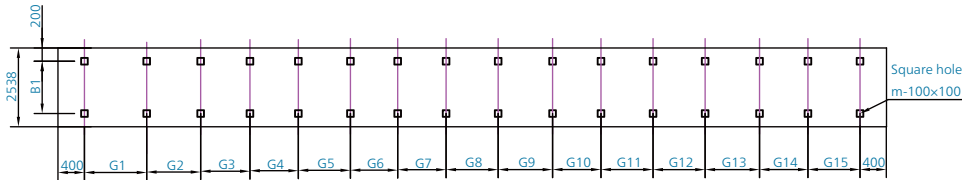


Model	dimension mm				installation dimension mm												pipe connection dimension mm			hoisting hole number		foundation bolt number	
	L	W	H	B	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	F1	M1	M2	DNe	N1	N2	
CC1050PANI	11320	2200	2700	2138	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	426	885	375	DN250	12	18	
CC1140PANI	12520	2200	2700	2138	1500	1500	1500	1500	1500	1500	1400	1400	1400	1400	1400	1400	426	885	375	DN250	12	20	
CC1230PANI	13720	2200	2700	2138	1500	1500	1500	1500	1500	1400	1400	1400	1400	1400	1400	1400	426	885	375	DN250	12	22	
CC1320PANI	14920	2200	2700	2138	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	426	885	375	DN250	12	24	
CC1400PANI	14950	2200	2700	2138	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	426	885	375	DN250	16	24	
CC1490PANI	16150	2200	2700	2138	1500	1500	1500	1500	1500	1500	1500	1500	1500	1400	1400	1400	426	885	375	DN250	16	26	
CC1580PANI	17350	2200	2700	2138	1500	1500	1500	1500	1500	1500	1400	1400	1400	1400	1400	1400	426	885	375	DN250	16	28	
CC1670PANI	18550	2200	2700	2138	1500	1500	1500	1500	1400	1400	1400	1400	1400	1400	1400	1400	426	885	375	DN250	16	30	
CC1760PANI	19750	2200	2700	2138	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	426	885	375	DN250	16	32	

# OIL FREE CENTRIFUGAL CHILLER

## The Unit Installation Foundation Drawing

• Air-cooled oil free centrifugal chiller installed base



Model	B1(mm)	G1(mm)	G2(mm)	G3(mm)	G4(mm)	G5(mm)	G6(mm)	G7(mm)	G8(mm)	G9(mm)	G10(mm)	G11(mm)	G12(mm)	G13(mm)	G14(mm)	G15(mm)	m
CC0350PANI	2138	1500	1500														6
CC0440PANI	2138	1400	1400	1400													8
CC0700PANI	2138	1500	1500	630	1500	1500											12
CC0790PANI	2138	1500	1500	630	1400	1400	1400										14
CC0880PANI	2138	1400	1400	1400	630	1400	1400	1400									16
CC1050PANI	2138	1500	1500	630	1500	1500	630	1500	1500								18
CC1140PANI	2138	1500	1500	630	1500	1500	630	1400	1400	1400							20
CC1230PANI	2138	1500	1500	630	1400	1400	1400	630	1400	1400	1400						22
CC1320PANI	2138	1400	1400	1400	630	1400	1400	1400	630	1400	1400	1400					24
CC1400PANI	2138	1500	1500	630	1500	1500	630	1500	1500	630	1500	1500					24
CC1490PANI	2138	1500	1500	630	1500	1500	630	1500	1500	630	1400	1400	1400				26
CC1580PANI	2138	1500	1500	630	1500	1500	630	1400	1400	1400	630	1400	1400	1400			28
CC1670PANI	2138	1500	1500	630	1400	1400	1400	630	1400	1400	1400	630	1400	1400	1400		30
CC1760PANI	2138	1400	1400	1400	630	1400	1400	1400	630	1400	1400	1400	630	1400	1400	1400	32

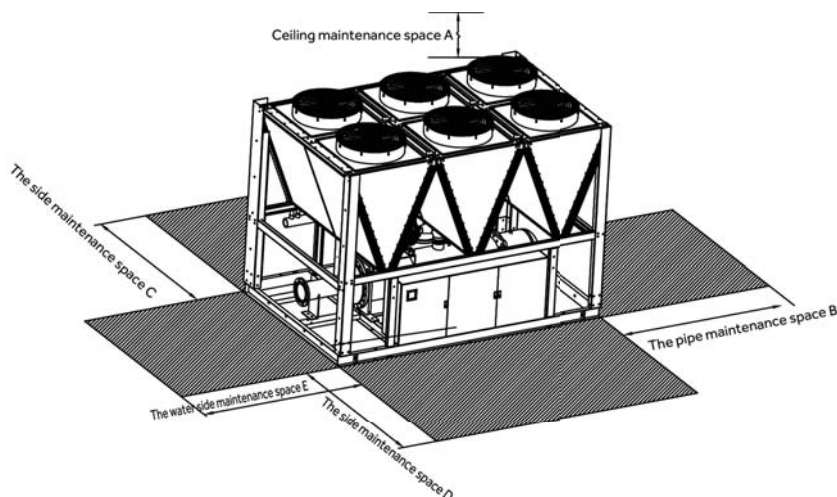
## Installation Space Diagram

• Air-cooled oil free centrifugal chiller installation space diagram

mm

Model	A	B	C	D	E
CC0350~0440PANI	2000	2000	1500	2000	1500
CC0700~1760PANI	3000	2000	1500	2000	1500

Note: above data is minimum dimension



## Performance Table

- Air-cooled oil free centrifugal chiller performace table

Chilled water outlet temp. (°C)	Ambient temperature (°C)													
	14		18		23		26		30		35		38	
	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input
5	0.91	0.55	0.96	0.68	1.01	0.82	1.00	0.87	0.96	0.93	0.93	1.02	0.92	1.03
7	0.91	0.52	0.99	0.67	1.06	0.84	1.05	0.90	1.03	1.05	1.00	1.00	1.00	1.05
9	0.92	0.48	1.01	0.63	1.08	0.83	1.08	0.90	1.10	1.01	1.04	1.05	1.01	1.05
10	0.91	0.45	1.02	0.61	1.10	0.83	1.10	0.90	1.13	1.03	1.06	1.06	1.03	1.06
11	0.90	0.42	1.03	0.59	1.13	0.83	1.13	0.91	1.16	1.05	1.07	1.06	1.05	1.06
12	0.88	0.40	1.04	0.57	1.14	0.83	1.16	0.91	1.19	1.05	1.11	1.06	1.07	1.06
13	0.87	0.38	1.05	0.55	1.16	0.82	1.18	0.91	1.22	1.06	1.15	1.06	1.09	1.06
15	0.87	0.33	1.03	0.52	1.19	0.80	1.23	1.01	1.26	1.07	1.19	1.06	1.14	1.06



# WATER-COOLED OIL FREE CENTRIFUGAL CHILLER



\*Picture is based on double compressor model

MODEL		CC0440PWNI	CC0530PWNI	CC0880PWNI	
Cooling capacity	RT	125	150	250	
	kW	440	528	879	
Power input	kW	74.7	87.9	146.5	
EER	kW/kW	5.89	6.01	6.00	
Starting current	A	2	2	2	
Max. running current	A	178	180	356	
Safe protection		High/low pressure protection, safety protection, low water flow protection, antifreezing protection, compressor overload, lack of phase protection			
Compressor	Type	Magnetic bearing compressor			
	Starting mode	Soft start			
	Quantity	1	1	2	
Power supply	Ph/V/Hz	3N/380V/50Hz			
Refrigerant throttle type		Electronic expansion valve			
Capacity control		5%-100%			
Controller type		PLC control			
Refrigerant	Type	R134a			
	Charge	kg	180	200	360
Evaporator	Type	Flood type			
	Water inlet/outlet temp	12°C/7°C			
	Inlet/outlet pipe	DN	150	150	200
	Rated water flow	m <sup>3</sup> /h	76	91	151
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
Condenser	Water side resistance	KPa	75	73	68
	Type	Shell & Tube heat exchanger			
	Water inlet/outlet temp	30°C/35°C			
	Inlet/outlet pipe	DN	150	150	200
	Rated water flow	m <sup>3</sup> /h	89	106	176
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.044		
External dimension	Standard pressure	MPa	1.0		
	Water side resistance	KPa	70	68	65
	Unit length	mm	2495	2495	4385
	Unit width	mm	1170	1170	1170
Package dimension	Unit height	mm	2100	2100	2100
	Unit length	mm	2550	2550	4450
	Unit width	mm	1435	1435	1435
Weight	Unit height	mm	2200	2200	2200
	Net weight	kg	2370	2480	3800
	Gross weight	kg	2410	2520	3850
Operation weight	kg	2670	2830	4300	

- Note: 1. Above parameters is based on the standard products;  
 2. Above products standard pressure is 1.0 Mpa,if pressure higher than 1.0Mpa,should contact with haier technology engineer;  
 3. Except above standard models, haier also can be customized products according to customers' requirements ;  
 4. Due to our policy of innovation some specifications maybe changed without notification;"  
 5. Model CC1330PWNI-CC2810PWNI is split type chiller , the installer need to combine the chiller on site;





\*Picture is based on double compressor model

MODEL			CC1100PWNI	CC1330PWNI	CC1400PWNI
Cooling capacity	RT		300	375	400
	kW		1055	1319	1407
Power input	kW		174.7	217.6	230.7
EER	kW/kW		6.04	6.06	6.10
Starting current	A		2	2	2
Max. running current	A		360	534	534
Safe protection			High/low pressure protection, safety protection, low water flow protection, antifreezing protection, compressor overload, lack of phase protection		
Compressor	Type		Magnetic bearing compressor		
	Starting mode		Soft start		
	Quantity		2	3	3
Power supply	Ph/V/Hz		3N/380V/50Hz		
Refrigerant throttle type			Electronic expansion valve		
Capacity control			5%-100%		
Controller type			PLC control		
Refrigerant	Type		R134a		
	Charge	kg	400	540	560
Evaporator	Type		Flood type		
	Water inlet/outlet temp		12°C/7°C		
	Inlet/outlet pipe	DN	200	250	250
	Rated water flow	m <sup>3</sup> /h	189	227	242
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
Condenser	Water side resistance	KPa	70	33	30
	Type		Shell & Tube heat exchanger		
	Water inlet/outlet temp		30°C/35°C		
	Inlet/outlet pipe	DN	200	250	250
	Rated water flow	m <sup>3</sup> /h	212	264	282
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.044		
External dimension	Standard pressure	MPa	1.0		
	Water side resistance	KPa	65	30	30
	Unit length	mm	4385	4780	4780
	Unit width	mm	1170	2220	2220
Package dimension	Unit height	mm	2100	2100	2100
	Unit length	mm	4450	5000	5000
	Unit width	mm	1435	2600	2600
Weight	Unit height	mm	2200	2200	2200
	Net weight	kg	4190	6130	6430
	Gross weight	kg	4190	6200	6500
	Operation weight	kg	4740	6880	7230

Note: 1. Above parameters is based on the standard products;

2. Above products standard pressure is 1.0 Mpa,if pressure higher than 1.0Mpa,should contact with haier technology engineer;

3. Except above standard models, haier also can be customized products according to customers' requirements ;

4. Due to our policy of innovation some specifications maybe changed without notification;"

5. Model CC1330PWNI-CC2810PWNI is split type chiller , the installer need to combine the chiller on site;

# WATER-COOLED OIL FREE CENTRIFUGAL CHILLER



\*Picture is based on double compressor model

MODEL			CC1580PWNI	CC1760PWNI	CC1930PWNI
Cooling capacity	RT		450	500	550
	kW		1583	1759	1934
Power input	kW		259.5	287.9	316.5
EER	kW/kW		6.10	6.11	6.11
Starting current	A		2	2	2
Max. running current	A		540	712	716
Safe protection			High/low pressure protection, safety protection, low water flow protection, antifreezing protection, compressor overload, lack of phase protection		
Compressor	Type		Magnetic bearing compressor		
	Starting mode		Soft start		
	Quantity		3	4	4
Power supply	Ph/V/Hz		3N/380V/50Hz		
Refrigerant throttle type			Electronic expansion valve		
Capacity control			5%-100%		
Controller type			PLC control		
Refrigerant	Type		R134a		
	Charge	kg	600	720	760
Evaporator	Type		Flood type		
	Water inlet/outlet temp		12°C/7°C		
	Inlet/outlet pipe	DN	250	250	250
	Rated water flow	m <sup>3</sup> /h	272	303	333
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
Condenser	Water side resistance	KPa	32	68	68
	Type		Shell & Tube heat exchanger		
	Water inlet/outlet temp		30°C/35°C		
	Inlet/outlet pipe	DN	250	250	250
	Rated water flow	m <sup>3</sup> /h	317	352	387
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.044		
External dimension	Standard pressure	MPa	1.0		
	Water side resistance	KPa	30	65	65
	Unit length	mm	4780	4780	4780
	Unit width	mm	2220	2220	2220
Package dimension	Unit height	mm	2100	2100	2100
	Unit length	mm	5000	5000	5000
	Unit width	mm	2600	2600	2600
Weight	Unit height	mm	2200	2200	2200
	Net weight	kg	6460	8200	8300
	Gross weight	kg	6530	8280	8380
	Operation weight	kg	7260	9200	9400

- Note: 1. Above parameters is based on the standard products;  
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 4. Due to our policy of innovation some specifications maybe changed without notification;"  
 5. Model CC1330PWNI-CC2810PWNI is split type chiller , the installer need to combine the chiller on site;



\*Picture is based on double compressor model

MODEL		CC2110PWNI	CC2460PWNI	CC2810PWNI	
Cooling capacity	RT	600	700	800	
	kW	2110	2462	2814	
Power input	kW	344.2	402.3	457.6	
EER	kW/kW	6.13	6.12	6.15	
Starting current	A	2	2	2	
Max. running current	A	720	894	900	
Safe protection		High/low pressure protection, safety protection, low water flow protection, antifreezing protection, compressor overload, lack of phase protection			
Compressor	Type	Magnetic bearing compressor			
	Starting mode	Soft start			
	Quantity	4	5	5	
Power supply	Ph/V/Hz	3N/380V/50Hz			
Refrigerant throttle type		Electronic expansion valve			
Capacity control		5%-100%			
Controller type		PLC control			
Refrigerant	Type	R134a			
	Charge	kg	800	900	1000
Evaporator	Type	Flood type			
	Water inlet/outlet temp	12°C/7°C			
	Inlet/outlet pipe	DN	250	300	300
	Rated water flow	m <sup>3</sup> /h	363	423	484
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
Condenser	Water side resistance	KPa	66	99	99
	Type	Shell & Tube heat exchanger			
	Water inlet/outlet temp	30°C/35°C			
	Inlet/outlet pipe	DN	250	300	300
	Rated water flow	m <sup>3</sup> /h	422	493	563
	Water dirt coefficient	(m <sup>2</sup> .°C/kW)	0.044		
External dimension	Standard pressure	MPa	1.0		
	Water side resistance	KPa	62	99	95
	Unit length	mm	4780	6450	6450
	Unit width	mm	2220	2420	2420
Package dimension	Unit height	mm	2100	2100	2100
	Unit length	mm	5000	6550	6550
	Unit width	mm	2600	2600	2600
Weight	Unit height	mm	2200	2200	2200
	Net weight	kg	8350	11150	11350
	Gross weight	kg	8430	11300	11500
Operation weight	kg	9450	12350	12650	

Note: 1. Above parameters is based on the standard products;

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3. Except above standard models, haier also can be customized products according to customers' requirements ;

4. Due to our policy of innovation some specifications maybe changed without notification;"

5. Model CC1330PWNI-CC2810PWNI is split type chiller , the installer need to combine the chiller on site;

# WATER-COOLED OIL FREE CENTRIFUGAL CHILLER



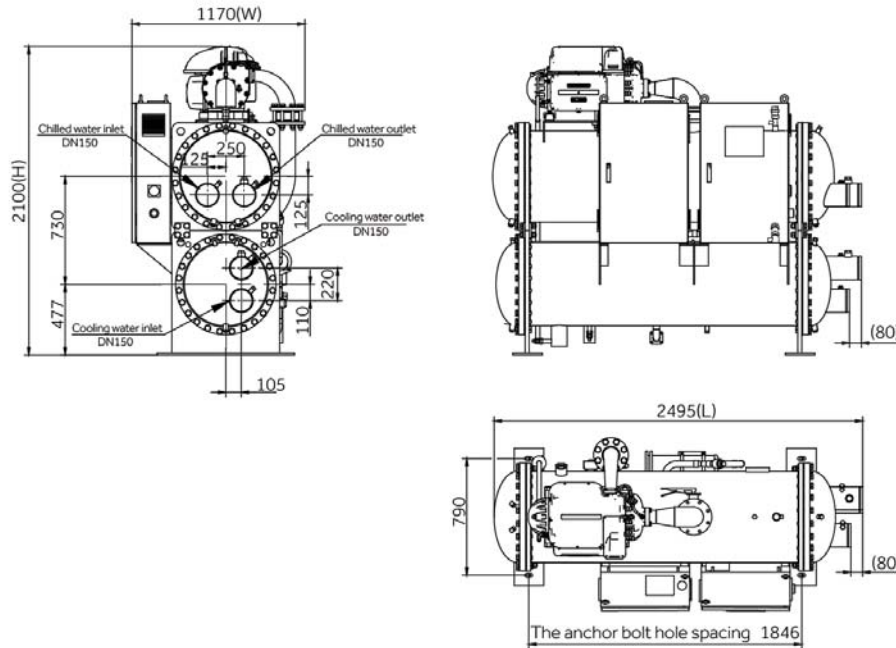
\*Picture is based on double compressor model

MODEL		CC3170PWNI	CC4220PWNI	CC6330PWNI	
Cooling capacity	RT	900	1200	1800	
	kW	3165	4220	6330.6	
Power input	kW	518.0	689.5	1029.4	
EER	kW/kW	6.11	6.12	6.15	
Starting current	A	2	2	2	
Max. running current	A	975	1440	2160	
Safe protection		High/low pressure protection, safety protection, low water flow protection, antifreezing protection, compressor overload, lack of phase protection			
Compressor	Type	Magnetic bearing compressor			
	Starting mode	Soft start			
	Quantity	6	8	12	
Power supply	Ph/V/Hz	3N/380V/50Hz			
Refrigerant throttle type		Electronic expansion valve			
Capacity control		5%-100%			
Controller type		PLC control			
Refrigerant	Type	R134a			
	Charge	kg	1200	1600	2400
Evaporator	Type	Flood type			
	Water inlet/outlet temp	12°C/7°C			
	Inlet/outlet pipe	DN	350	350	450
	Rated water flow	m³/h	544	725.9	1088.9
	Water dirt coefficient	(m².°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
Condenser	Water side resistance	KPa	99	97	97
	Type	Shell & Tube heat exchanger			
	Water inlet/outlet temp	30°C/35°C			
	Inlet/outlet pipe	DN	350	350	450
	Rated water flow	m³/h	633	844	1266
	Water dirt coefficient	(m².°C/kW)	0.044		
External dimension	Standard pressure	MPa	1.0		
	Water side resistance	KPa	99	95	96
	Unit length	mm	4300	5100	7700
	Unit width	mm	3200	3050	3500
Package dimension	Unit height	mm	2400	2560	2500
	Unit length	mm	4500	5200	7800
	Unit width	mm	3500	3500	3650
Weight	Unit height	mm	2400	2660	2660
	Net weight	kg	11950	15350	25310
	Gross weight	kg	12100	15500	25460
Operation weight	kg	15450	19350	29810	

- Note: 1. Above parameters is based on the standard products;  
 2. Above products standard pressure is 1.0 Mpa, if pressure higher than 1.0Mpa, should contact with haier technology engineer;  
 3. Except above standard models, haier also can be customized products according to customers' requirements;  
 4. Due to our policy of innovation some specifications maybe changed without notification;"  
 5. Model CC1330PWNI-CC2810PWNI is split type chiller, the installer need to combine the chiller on site;

## Unit Dimension Diagram

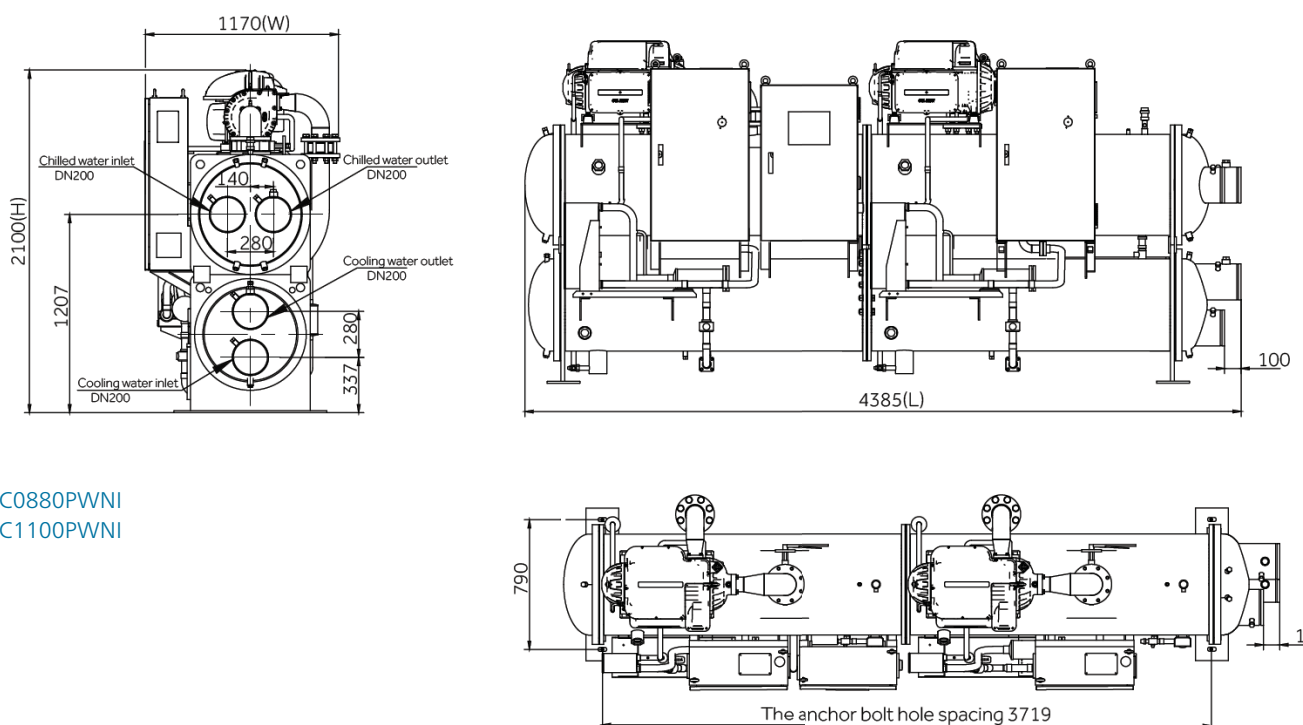
- Water-cooled oil free centrifugal chiller dimension diagram
- Single compressor unit dimension diagram



CC0440PWN1  
CC0530PWN1

The double compressors chiller series connection standard, parallel connection is optional, below is unit dimension diagram

- Twin-compressor series connection unit dimension diagram



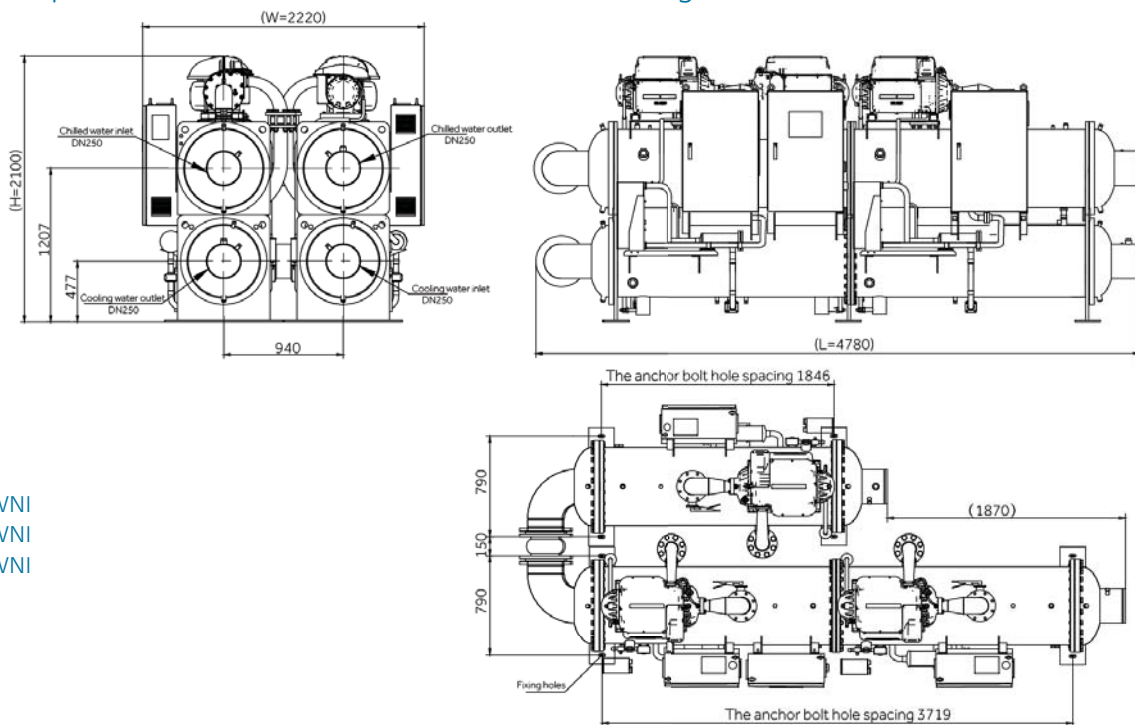
CC0880PWN1  
CC1100PWN1

# WATER-COOLED OIL FREE CENTRIFUGAL CHILLER

## Unit Dimension Diagram

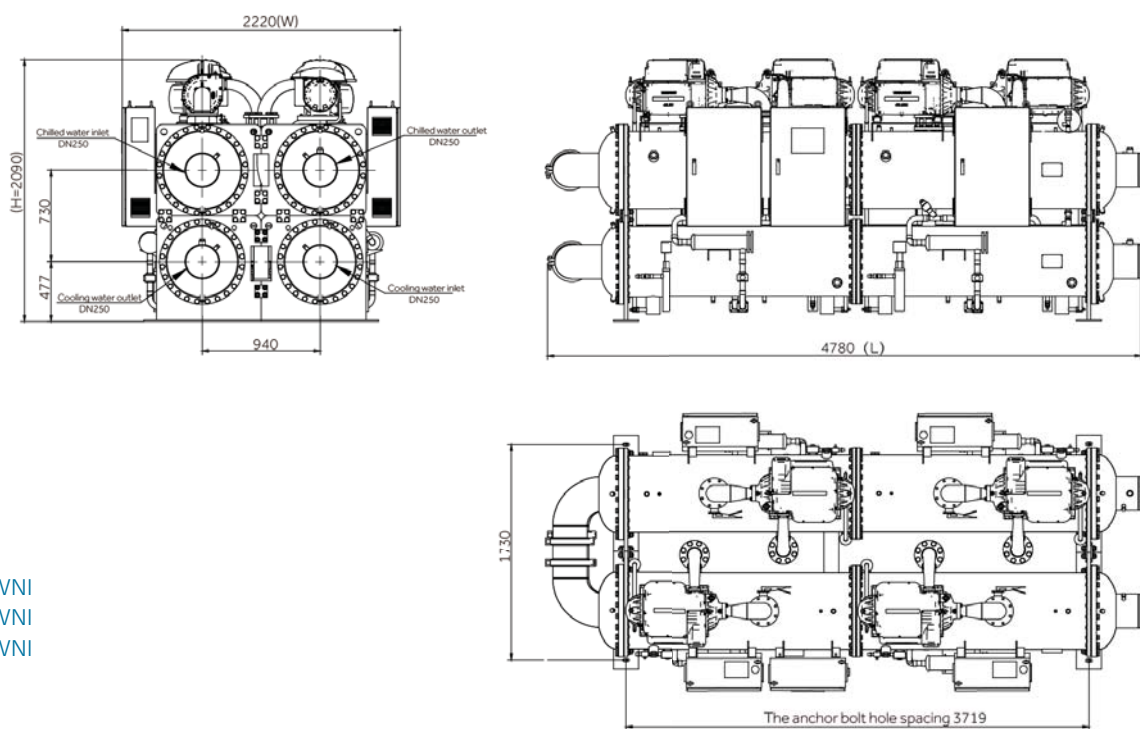
The chiller with three compressor is parallel connection, and also can realize series connection for special requirements. This is the unit dimension diagram

### •Three compressores series connection unit dimension diagram



CC1330PWNI  
CC1400PWNI  
CC1580PWNI

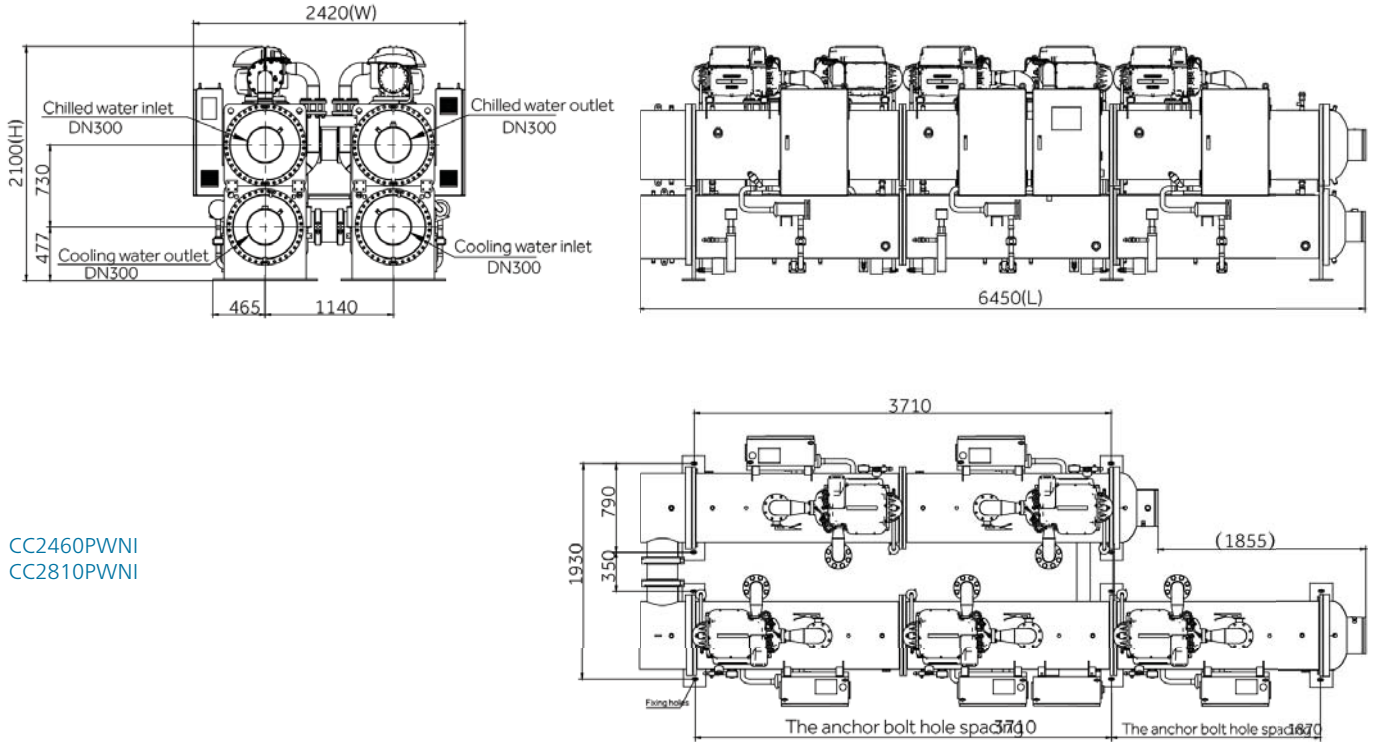
### •Four compressores parallel connection unit dimension diagram



CC1760PWNI  
CC1930PWNI  
CC2110PWNI

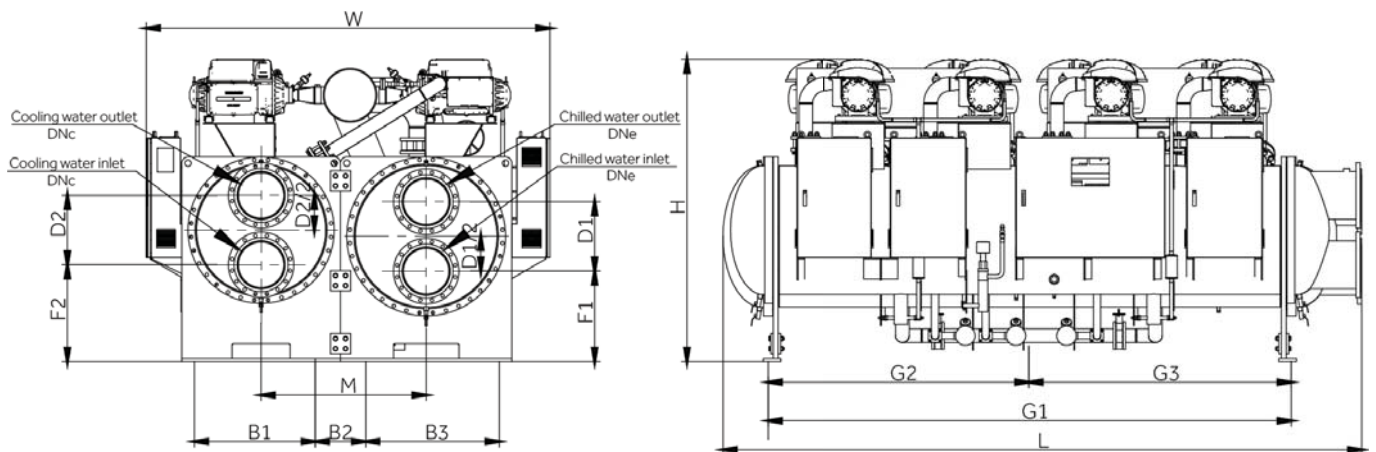
## Unit Dimension Diagram

- Five compressores parallel connection unit dimension diagram



CC2460PWNI  
CC2810PWNI

- Big capacity oil free centrifugal chiller series(for example the model with six compressor)



CC3170PWNI  
CC4220PWNI  
CC6330PWNI

Model	Dimension mm			Installation Dimension mm						Pipe Connection Dimension mm						
	L	W	H	B1	B2	B3	G1	G2	G3	D1	D2	F1	F2	M	DNe	DNc
CC3170PWNI	4300	3200	2400	960	400	1060	3348			550	550	715	765	1310	DN350	DN350
CC4220PWNI	5100	3200	2400	960	400	1060	4148			550	550	715	765	1310	DN350	DN350
CC6330PWNI	7700	3500	2500	1160	400	1160		3390	3230	620	620	730	730	1460	DN450	DN450

Notes:

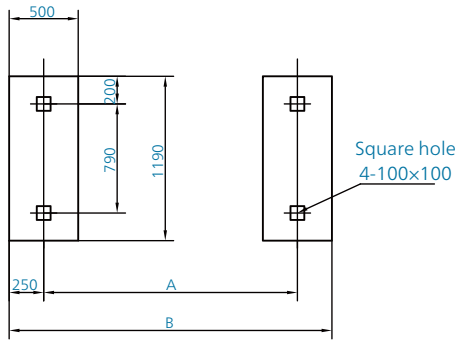
- 1, Above products direction of the evaporator and condenser water inlet and water outlet can be adjusted according to user requirements
- 2, Product dimension also can be changed if user have special requirements

# OIL FREE CENTRIFUGAL CHILLER

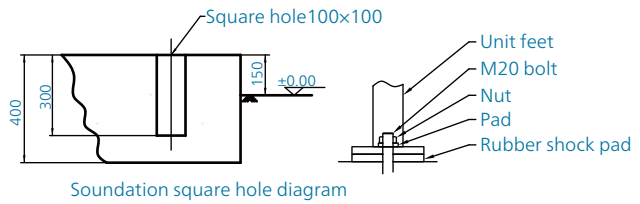
## The Unit Installation Foundation Drawing

•Water-cooled oil free centrifugal chiller installed base

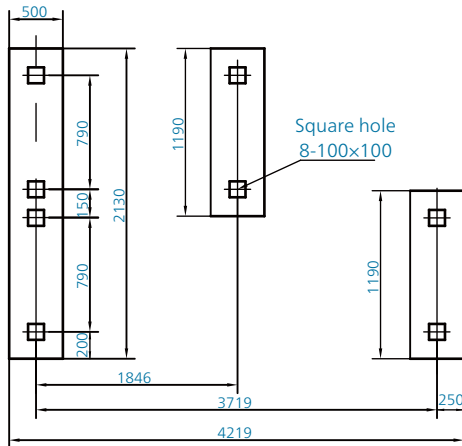
### Single compressor & Twin-compressor series dimension



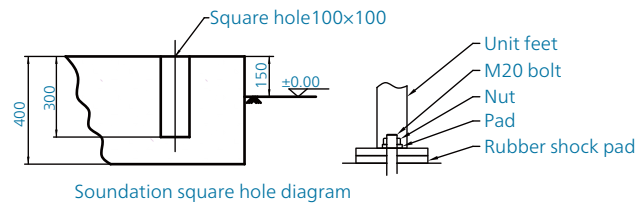
Model	A(mm)	B(mm)
CC0440PWNI	1846	2346
CC0530PWNI	1846	2346
CC0880PWNI	3719	4219
CC1100PWNI	3719	4219



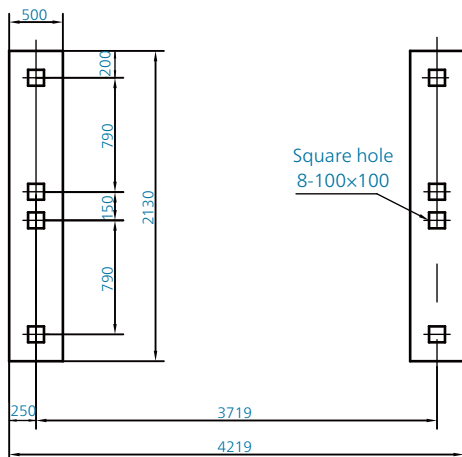
### Three compressors series dimension



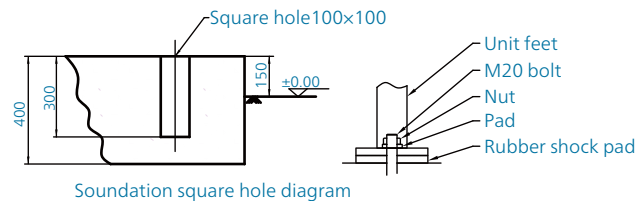
CC1320PWNI  
CC1400PWNI  
CC1580PWNI



### Four compressors series dimension



CC1760PWNI  
CC1930PWNI  
CC2110PWNI

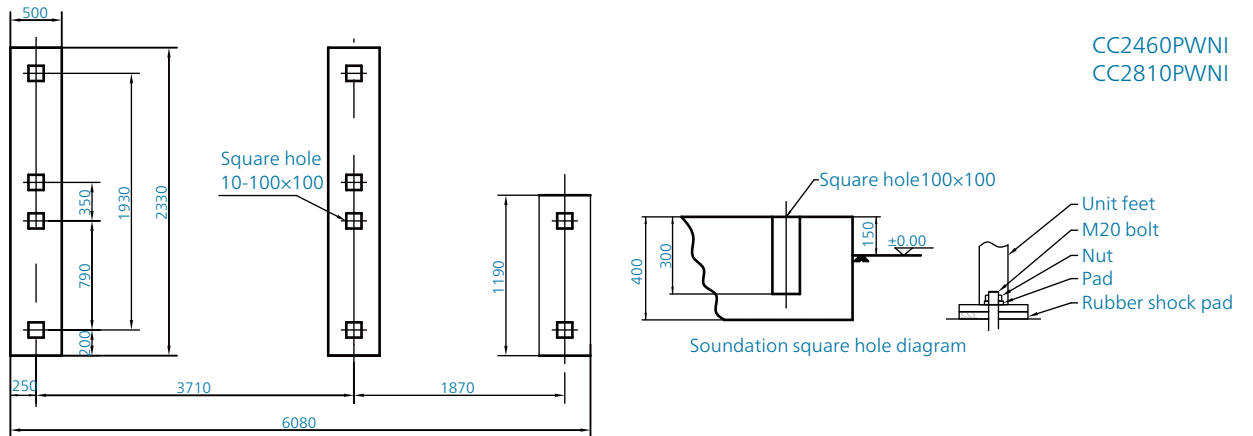




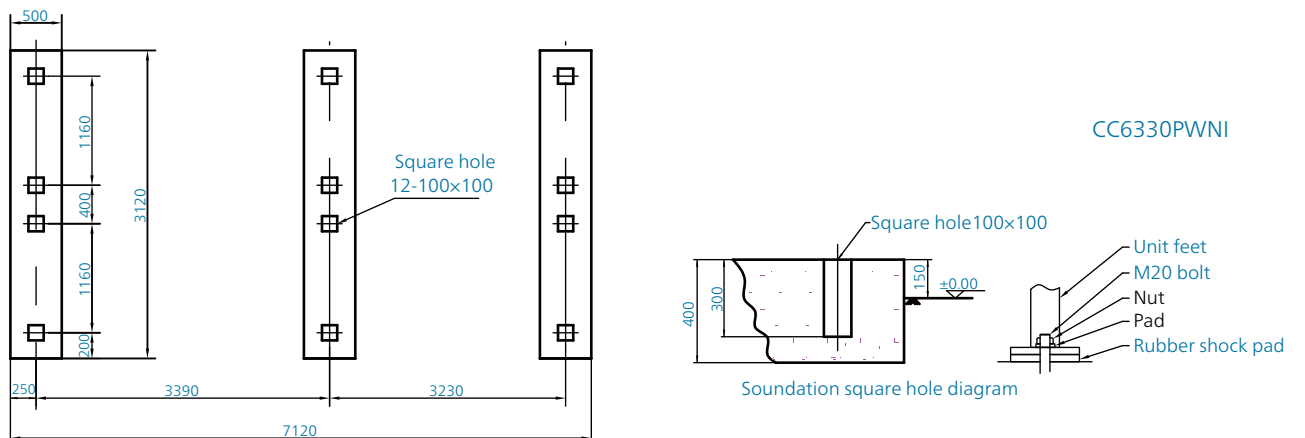
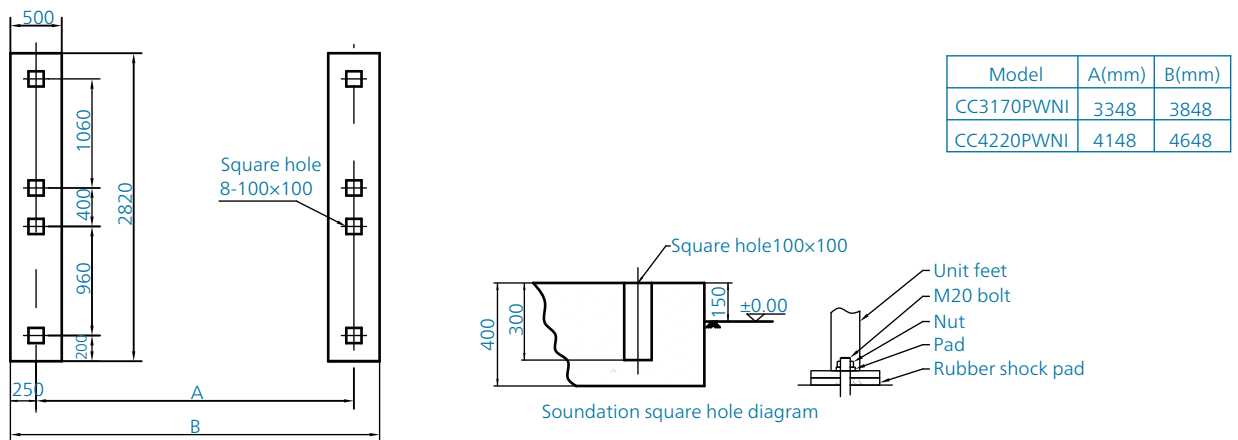
# The Unit Installation Foundation Drawing

•Water-cooled oil free centrifugal chiller installed base

## Five compressors series dimension



## Big capacity chiller series dimension



# OIL FREE CENTRIFUGAL CHILLER

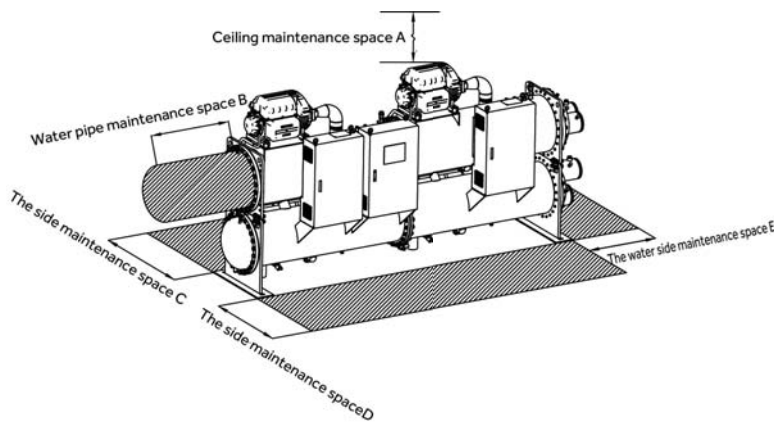
## Installation Space Diagram

- Water-cooled oil free centrifugal chiller installation space diagram

mm

Model	A	B	C	D	E
CC0440~CC0530PWNI	500	2000	1500	1500	1000
CC0880~CC2810PWNI	500	2000	1500	1500	2000
CC3170PWNI	1000	3500	1500	1500	2000
CC4220PWNI	1000	4300	1500	1500	2000
CC6330PWNI	1000	3500	1500	1500	3500

Note: above data is minimum dimension



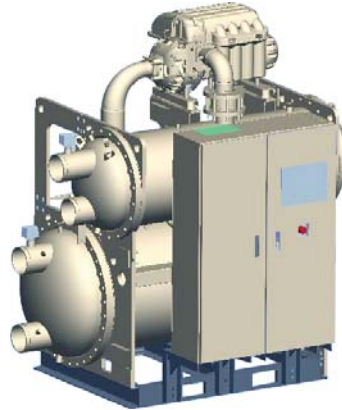
## Performance Table

- Water-cooled oil free centrifugal chiller performance table

Performance table  
Cooling water inlet temperature(°C)

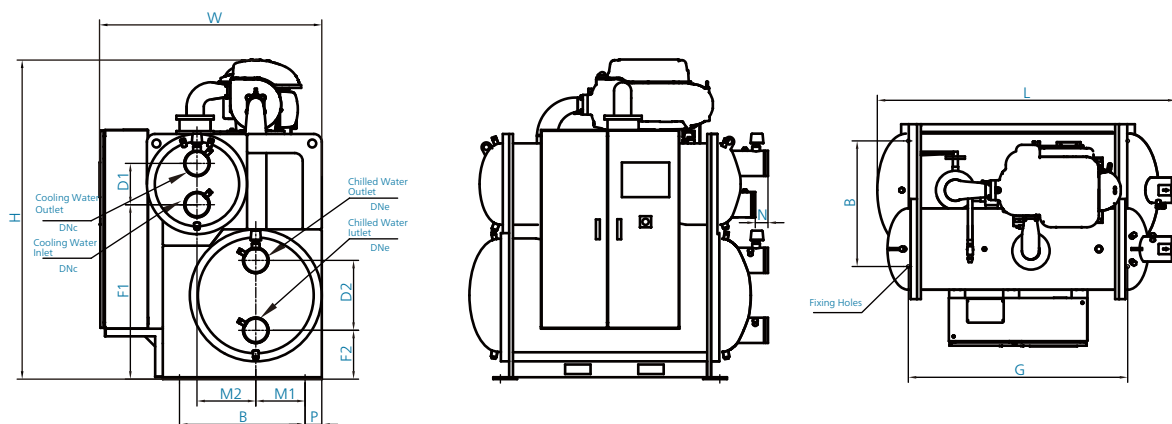
Chilled water outlet temp.(°C)	22		24		26		28		30		32		34		36	
	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input
5	0.92	0.73	0.95	0.81	0.98	0.88	0.96	0.95	0.96	1.02	0.95	1.08	0.94	1.15	0.92	1.20
6	0.93	0.71	0.95	0.80	0.97	0.88	0.98	0.95	0.98	1.01	0.97	1.08	0.97	1.16	0.95	1.21
7	0.94	0.69	0.97	0.77	0.99	0.86	0.99	0.92	1.00	1.00	1.00	1.07	0.99	1.14	0.98	1.21
8	0.98	0.67	0.98	0.75	1.00	0.83	1.02	0.92	1.03	0.99	1.03	1.07	1.03	1.14	1.02	1.21
9	0.96	0.63	0.99	0.72	1.01	0.81	1.04	0.90	1.05	0.98	1.06	1.06	1.05	1.12	1.05	1.20
10	0.95	0.60	1.00	0.70	1.03	0.78	1.05	0.87	1.07	0.96	1.08	1.03	1.08	1.11	1.08	1.20
11	0.93	0.52	1.00	0.63	1.05	0.73	1.07	0.82	1.10	0.91	1.12	1.01	1.12	1.08	1.13	1.16
12	0.93	0.52	0.96	0.50	1.04	0.53	1.09	0.71	1.14	0.83	1.16	0.92	1.19	1.02	1.21	1.13
13	0.93	0.52	0.96	0.50	1.04	0.47	1.05	0.57	1.13	0.69	1.19	0.82	1.23	0.93	1.25	1.13

# MODULAR WATER-COOLED OIL FREE CENTRIFUGAL CHILLER



MODEL		CC0320PWNN	CC0400PWNN	CC0500PWNN	
Cooling capacity	RT	90	114	142	
	kW	320	400	500	
Power input	kW	55.2	71.4	89.3	
	EER	kW/kW	5.80	5.60	5.60
Starting current	A	2	2	2	
Max. runnin current	A	176	178	180	
Safe protection	compressor overload protection, safe protection, low water flow protection, antifreezing protection, fan motor overload protection, lack of phase protection				
Compressor	Type	Magnetic bearing compressor			
	Starting mode	soft start			
	Quantity	1	1	1	
Power supply	Ph/V/Hz	3N/380V/50Hz			
Refrigerant throttle type	Electronic expansion valve				
Capacity control	5%-100%				
Controller type	PLC control				
Refrigerant	Type	R134a			
	Charge	kg	80	85	100
Evaporator	Type	falling film			
	Water inlet/outlet temp	12°C/7°C			
	Inlet/outlet pipe	DN	150	150	150
	Rated water flow	m³/h	55	69	86
	Water dirt coefficient	(m²·°C/kW)	0.0176		
	Standard pressure	MPa	1.0		
	Water side resistance	KPa	60	60	55
Condenser	Type	Shell & Tube heat exchanger			
	Water inlet/outlet temp	30°C/35°C			
	Inlet/outlet pipe	DN	150	150	150
	Rated water flow	m³/h	75	95	110
	Water dirt coefficient	(m²·°C/kW)	0.044		
	Standard pressure	MPa	1.0		
	Water side resistance	KPa	75	75	80
External dimension	Unit length	mm	1880	1880	1880
	Unit width	mm	1400	1400	1425
	Unit height	mm	2010	2010	2070
	Net weight	Kg	1890	1950	2080
Weight	Gross weight	Kg	1930	1990	2120
	Operation weight	Kg	2140	2210	2370

\* Data is pending



Model	Dimension mm			Installation Dimension mm			Pipe Connection Dimension mm									
	L	W	H	B	G	P	D1	D2	F1	F2	M1	M2	N	DNe	DNc	
CC0320PWNN	1880	1400	2010	790	1380	105	260	440	1097	307	310	370	80	DN150	DN150	
CC0400PWNN	1880	1400	2010	790	1380	105	260	440	1097	307	310	370	80	DN150	DN150	
CC0500PWNN	1880	1425	2070	790	1380	105	260	440	1122	307	310	370	80	DN150	DN150	

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