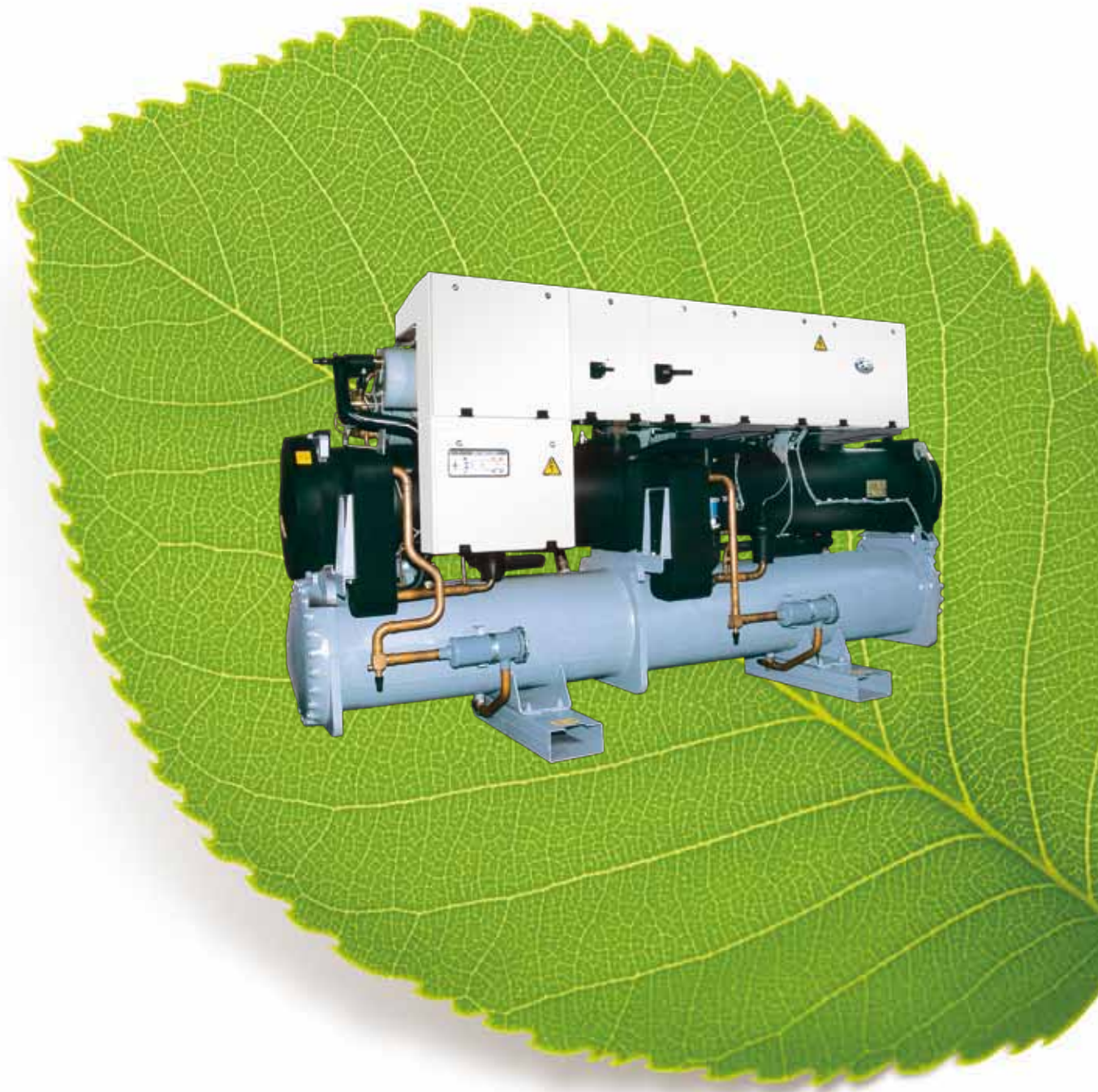




United Technologies  
turn to the experts 



# 30HXY/HXC

## Water-Cooled Screw Chiller

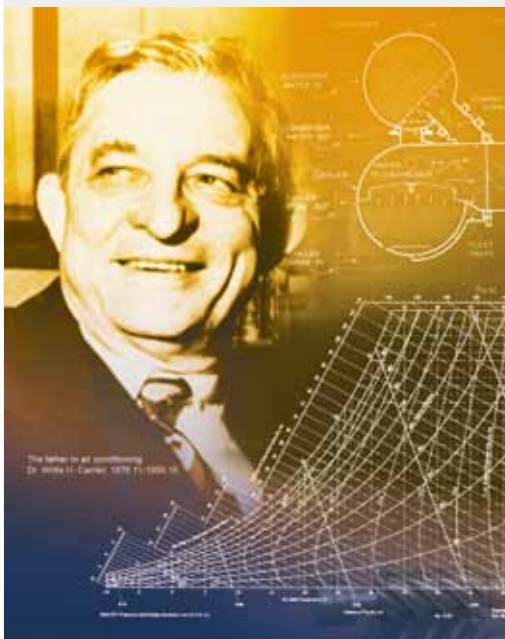
Nominal cooling capacity: 241~985 kW



## Carrier China

Carrier Corporation is a subsidiary of the United Technologies Corp. (UTC), which ranks the 150th in Fortune Top 500 in 2011 and has its operations in aerospace and building systems industries all over the world. From the time the founder Dr. Carrier invented the first system of modern air conditioning in 1902, Carrier has been the world leader in the air conditioning industry with its products and system solutions supplied to numerous famous buildings, and up to now, the network of distribution cover more than 170 countries all over the world. In 2011, Carrier ranked top in the HVAC industry field with its sales revenue of US \$12 billion.

In China, there are 6 Carrier factories which have more than 2500 employees. As the world-class factory, Carrier has a number of technically advanced production lines, manufacturing commercial and residential chillers, compressors and air-side products. A wide range of products are able to meet diversified requirements of different customers. The global R&D center located in Shanghai has the capability of developing several major projects in the same time, with many advanced technical patents awarded to support Carrier stay most competitive in terms of technology advantage in the HVAC industry.



The father of air conditioning  
Dr. Willis H. Carrier, 1876-1950



In 1998, Time magazine named Dr. Carrier one of its 20 most influential builders and titans of the 20<sup>th</sup> century.





Different histories, cultures, and values influence different places of the world in different ways,  
 But one thing remains in common:  
 Carrier Air-conditioning systems are installed in all these places.

# CONTENTS

<b>Introduction</b>	1
<b>Pro-Dialog Plus Control</b>	2
<b>Physical Data/Electrical Data</b>	3
<b>Dimensions/Clearance</b>	6
<b>Chiller Footprint/Field Wiring</b>	10
<b>Standard Accessories/Main Options</b>	11



The Great Hall of the People,  
 Beijing, China



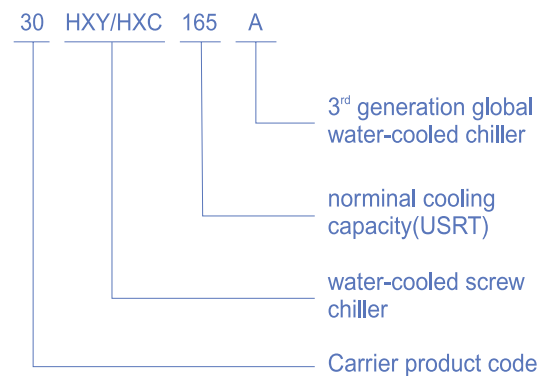
Kremlin, Moscow, Russia



White House, Washington DC, USA



Imperial Palace, Tokyo, Japan



## Introduction

The 30HXC units are water-cooled chillers, designed from the ground up to meet the needs of today and tomorrow. It is distinguished for its chlorine-free refrigerant, high efficiency, high reliability, easy maintenance and low running cost. Born in 1990s, 30HXC is widely applied in all kinds of buildings such as hotels, offices, restaurants, schools, hospitals, enterprises, etc.

### Designed exclusively for R134a

- R134a has zero ozone depletion potential.
- R134a production is annually increasing, and has no expire date.

### Full/part load mode is more cost saving

- 06N twin-screw compressor achieves high efficiency.
- Carrier patent high efficiency flood evaporator increase heat transfer efficiency.
- Multiple compressors allow flexible adjustment according to user's load, ensuring higher part-load efficiency.
- Electronic expansion valve ensures high control precision.

### High reliability

- Two independent refrigerant circuits minimize unit shut down.
- Multiple compressors provide back up for each other.
- Complete protection function ensures the unit running smooth.
- Each unit has a trial run in the factory.

### Easy installation

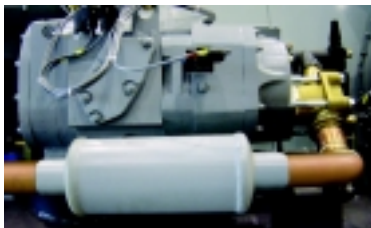
- Compact design requires minimal indoor space.
- The maximum width reaches only 1015mm, which allows the unit to fit through a standard door opening without disassembly.
- Evaporator and condenser short steel pipes and flanges are supplied by factory.
- Refrigeration and lubrication is filled ex-factory.
- The on-site installation requires only connection to water and power supply.

### Simple to service

- Graphical operational interface makes it clear and easy to operate.
- Screw compressor with few components requires low maintenance cost.

### Triple Sound Reduction

- Built-in sound reduction device can effectively reduce noises as result of high pressure air discharge fluttering by diverting the air in an appropriate way.
- New external muffler installed on the discharge pipe on the compressor can transform part of acoustic energy into heat and greatly reduce noise. (See the picture below)
- Sound reduction cabinet provides another sound-proofing barrier, and reduces the noise transferring to the machine room. (See the picture below)



Muffler on Discharge Pipe



2<sup>nd</sup> Generation Sound Reduction Cabinet

## PRO-DIALOG Plus Control

PRO-DIALOG Plus is an advanced numeric control system that combines intelligence with great operating simplicity. The PID control algorithm with permanent compensation for the difference between the heat exchanger entering and leaving temperature, anticipates load variations, guarantees leaving water temperature stability and prevent unnecessary compressor cycling.



### PRO-DIALOG offers extended communications capabilities

- Graphical interface, LED numeric displays make it clear and easy to understand.
- Touch keys are well-positioned on the schematic chiller diagram, providing clear view of operation flow. All operating parameters such as pressures, temperatures, operating hours etc are easy to use.
- Operating menus provide direct access to acquiring and modifying parameters.

### PRO-DIALOG has advanced control functions

- Allows local mode, remote mode and CCN mode to start/stop the unit.
- The long-stroke electronic expansion valve (EXV), allows a significant energy efficiency improvement at part load conditions, and faultless chiller operation in a wider temperature range.
- Automatic control of refrigerant circuits and compressors on/off status and loading sequence, thus equalizing compressor operating hours.
- Interlock control between the unit, chilled water pump and cooling water pump, contributing to safe and high efficiency performance.
- "Demand Limit" limits the maximum chiller capacity to a predefined value. This function is specially designed for multi-compressor management, it aims to achieve the best running efficiency by imposing different chiller capacity limit to different compressors.
- Evaporator leaving water temperature drop speed is controlled within the adjustable range (0.1~1.1°C/min) so as to avoid energy waste, improve ERR and increase unit life.
- Provides a negative revision to cooling water leaving temperature according to outdoor temperature or return water temperature trend, so as to save energy and improve ERR by quickly fitting the wave trend of external load decrease.

### Safety Protection Function

- Protection on low cooling water leaving temperature, low oil pressure, high refrigerant pressure, electric leak, compressor overload, high/low electrical voltage and phase lack.

### Multiple remote control

- The communication bus between RS485 port of 30HXC and the Carrier Comfort Net (need purchase) offers multiple remote control; the communication bus between 30HXC and DATAPORT communication module provided by Carrier (need purchase) realizes the connection with other building automatics.

## Physical Data

Model	30HXY			30HXC						
		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Net nominal cooling capacity</b>	kW	241	335	449	509	541	651	812	897	985
<b>Compressors</b>		Semi-hermetic, twin-screw POWER <sup>3</sup>								
Quantity-Circuit A		1	1	1	1	1	1	2	2	2
Quantity-Circuit B		-	-	1	1	1	1	1	1	1
No. of control steps		3	3	6	6	6	6	8	8	8
Minimum step capacity	%	40	40	19	17	19	21	14	14	14
<b>Evaporator</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	12								
Leaving water temperature	°C	7								
Net water volume	l	56	61	65	75	75	88	155	170	170
Inlet/outlet	in	3.5	4	5	5	5	5	6	6	6
Max.water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	30								
Leaving water temperature	°C	35								
Net water volume	l	61	70	78	90	90	108	190	190	190
Inlet/outlet	in	4	5	5	5	5	6	8	8	8
Max.water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Refrigerant charge</b>		HFC-134a								
Circuit A	kg	59	83	51	48	54	70	117	117	132
Circuit B	kg	-	-	47	48	57	70	75	75	80
<b>Dimensions</b>										
Length	mm	2100	2794	3278	3278	3278	3278	3912	3912	3912
Width	mm	950	950	980	980	980	980	1015	1015	1015
Height	mm	1816	1930	1816	1816	1816	1941	2060	2060	2060
<b>Net weight</b>	kg	1750	1950	2474	2537	2547	2983	4242	4296	4416
<b>Operating weight</b>	kg	1900	2110	2617	2702	2712	3179	4602	4656	4776

## Electrical Data

30HXC/HXY		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Power circuit</b>										
Nominal power supply	V-ph-Hz	400-3-50								
Voltage range	V	360-440								
<b>Nominal power input*</b>	kW	52	69	90	102	112	130	164	192	196
<b>Nominal current drawn*</b>	A	90	143	161	190	198	234	300	335	348
<b>Max. starting current</b>	A	206	328	298	333	355	442	683	732	824

- Standard Eurovent conditions: Evaporator entering/leaving water temperature 12°C and 7°C. Condenser entering/leaving water temperature 30°C/35°C. Fouling factor=0.000044m<sup>2</sup>K/W
- Effective power input = power input of the compressors + the control circuit + the power input of the pump to overcome the evaporator pressure drop.
- Net cooling capacity = gross cooling capacity minus the water pump heat against the internal evaporator pressure drop.
- Short steel pipes factory-supplied, to be installed on site for evaporator and condenser water connections.

## Physical Data

### Physical data of voltage 380V-60Hz (option 61)

Model	30HXY					30HXC				
		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Net nominal cooling capacity</b>	kW	241	332	449	509	541	644	812	897	970
<b>Compressors</b>		Semi-hermetic, twin-screw POWER <sup>3</sup>								
Quantity-Circuit A		1	1	1	1	1	1	2	2	2
Quantity-Circuit B		-	-	1	1	1	1	1	1	1
No. of control steps		3	3	6	6	6	6	8	8	8
Minimum step capacity	%	40	40	19	17	19	21	14	14	14
<b>Evaporator</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	12								
Leaving water temperature	°C	7								
Net water volume	l	56	61	65	75	75	88	155	170	170
Inlet/outlet	in	3.5	4	5	5	5	5	6	6	6
Max. water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	30								
Leaving water temperature	°C	35								
Net water volume	l	61	70	78	90	90	108	190	190	190
Inlet/outlet	in	4	5	5	5	5	6	8	8	8
Max. water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Refrigerant charge</b>		HFC-134a								
Circuit A	kg	59	83	51	48	54	70	117	117	132
Circuit B	kg	-	-	47	48	57	70	75	75	80
<b>Dimensions</b>										
Length	mm	2100	2794	3278	3278	3278	3278	3912	3912	3912
Width	mm	950	950	980	980	980	980	1015	1015	1015
Height	mm	1816	1930	1816	1816	1816	1941	2060	2060	2060
<b>Net weight</b>	kg	1750	1950	2474	2537	2547	2983	4242	4296	4416
<b>Operating weight</b>	kg	1900	2110	2617	2702	2712	3179	4602	4656	4776

## Electrical Data

### Electrical data of voltage 380V-60Hz (option 61)

30HXC/HXY		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Power circuit</b>										
Nominal power supply	V-ph-Hz	380-3-60								
Voltage range	V	342-418								
<b>Nominal power input*</b>	kW	52	68	91	103	111	129	166	189	199
<b>Nominal current drawn*</b>	A	106	133	178	198	215	257	315	352	388
<b>Max. starting current</b>	A	225	315	279	313	335	417	597	645	736

- Standard Eurovent conditions: Evaporator entering/leaving water temperature 12°C and 7°C. Condenser entering/leaving water temperature 30°C/35°C. Fouling factor=0.000044m<sup>2</sup>K/W
- Effective power input = power input of the compressors + the control circuit + the power input of the pump to overcome the evaporator pressure drop.
- Net cooling capacity = gross cooling capacity minus the water pump heat against the internal evaporator pressure drop.
- Short steel pipes factory-supplied, to be installed on site for evaporator and condenser water connections.

## Physical Data

### Physical data of voltage 460V-60Hz (option 60)

Model	30HXY					30HXC				
		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Net nominal cooling capacity</b>	kW	241	332	449	509	541	644	812	897	970
<b>Compressors</b>		Semi-hermetic, twin-screw POWER <sup>3</sup>								
Quantity-Circuit A		1	1	1	1	1	1	2	2	2
Quantity-Circuit B		-	-	1	1	1	1	1	1	1
No. of control steps		3	3	6	6	6	6	8	8	8
Minimum step capacity	%	40	40	19	17	19	21	14	14	14
<b>Evaporator</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	12								
Leaving water temperature	°C	7								
Net water volume	l	56	61	65	75	75	88	155	170	170
Inlet/outlet	in	3,5	4	5	5	5	5	6	6	6
Max.water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Condenser</b>		Shell and tube with internally finned copper tubes								
Entering water temperature	°C	30								
Leaving water temperature	°C	35								
Net water volume	l	61	70	78	90	90	108	190	190	190
Inlet/outlet	in	4	5	5	5	5	6	8	8	8
Max.water side operating pressure	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000
<b>Refrigerant charge</b>		HFC-134a								
Circuit A	kg	59	83	51	48	54	70	117	117	132
Circuit B	kg	-	-	57	48	57	70	75	75	80
<b>Dimensions</b>										
Length	mm	2100	2794	3278	3278	3278	3278	3912	3912	3912
Width	mm	950	950	980	980	980	980	1015	1015	1015
Height	mm	1816	1930	1816	1816	1816	1941	2060	2060	2060
<b>Net weight</b>	kg	1750	1950	2474	2537	2547	2983	4242	4296	4416
<b>Operating weight</b>	kg	1900	2110	2617	2702	2712	3179	4602	4656	4776

## Electrical Data

### Electrical data of voltage 460V-60Hz (option 60)

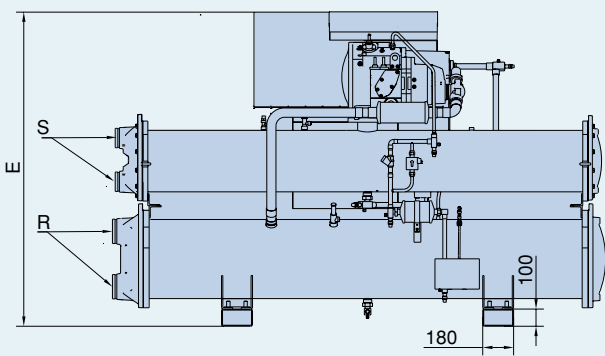
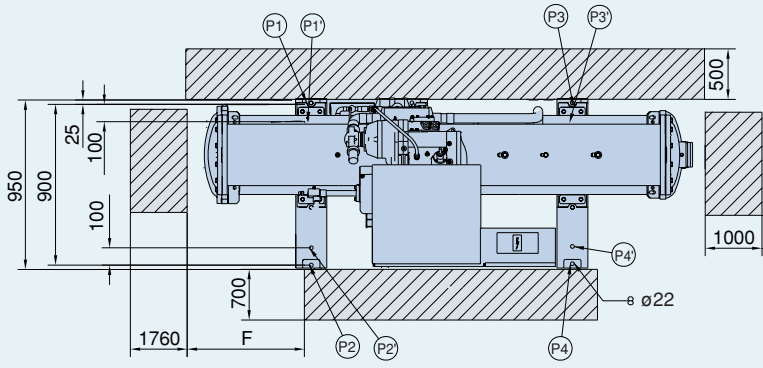
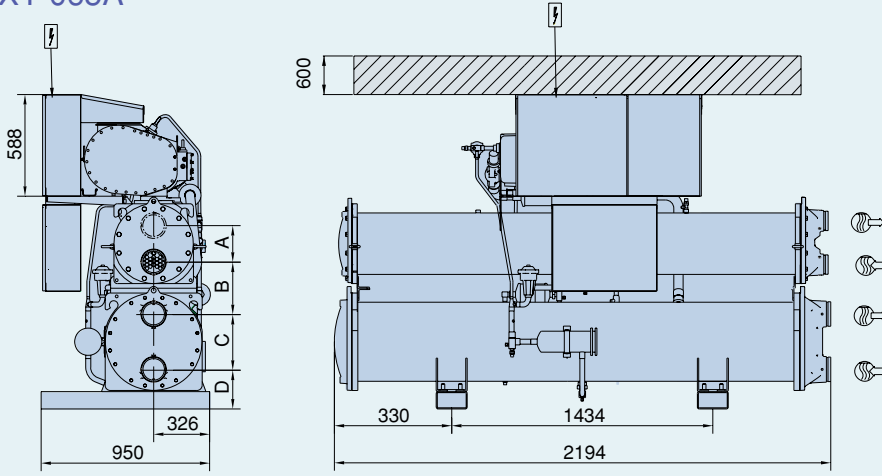
30HXC/HXY		065A	100A	130A	140A	155A	190A	230A	260A	285A
<b>Power circuit</b>										
Nominal power supply	V-ph-Hz	460-3-60								
Voltage range	V	414-506								
<b>Nominal power input*</b>	kW	52	68	91	103	111	129	166	189	198
<b>Nominal current drawn*</b>	A	90	107	147	164	178	213	260	291	319
<b>Max. starting current</b>	A	205	285	244	274	292	363	521	560	639

- Standard Eurovent conditions: Evaporator entering/leaving water temperature 12°C and 7°C. Condenser entering/leaving water temperature 30°C/35°C. Fouling factor=0.000044m<sup>2</sup>K/W
- Effective power input = power input of the compressors + the control circuit + the power input of the pump to overcome the evaporator pressure drop.
- Net cooling capacity = gross cooling capacity minus the water pump heat against the internal evaporator pressure drop.
- Short steel pipes factory-supplied, to be installed on site for evaporator and condenser water connections.



# Dimensions/Clearance

## 30HXY 065A



	A	B	C	D	E	F	S	R
30HXY065A	236	289	320	229	1875	396	Dg80	Dg100

⓪ Required clearances for maintenance

Ⓛ Recommended space for tube removal (clearance 1760 and 1000 can be either on the right or the left side).



Water outlet

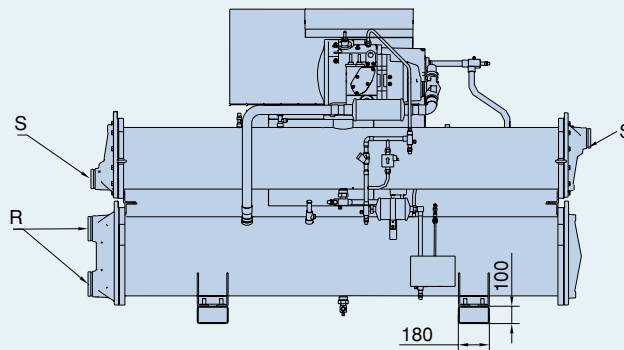
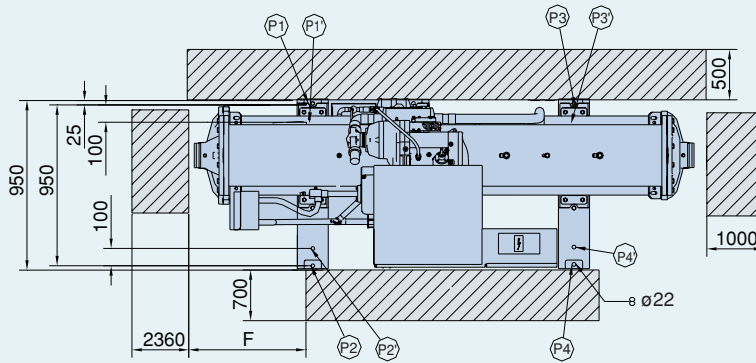
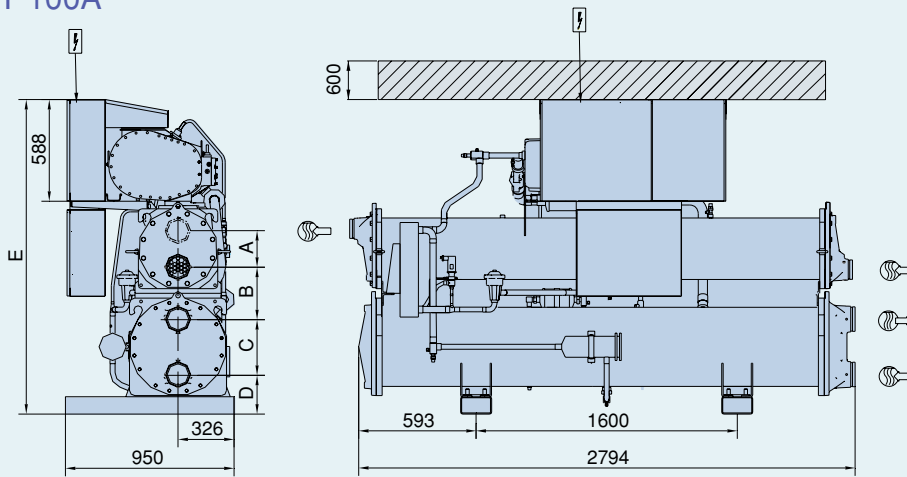


Water inlet



Power supply

# 30HXY 100A



	A	B	C	D	E	F	S	R
30HXY065A	236	325	304	283	1930	496	Dg100	Dg125

Ⓢ Required clearances for maintenance

Ⓡ Recommended space for tube removal (clearance 2360 and 1000 can be either on the right or the left side).



Water outlet



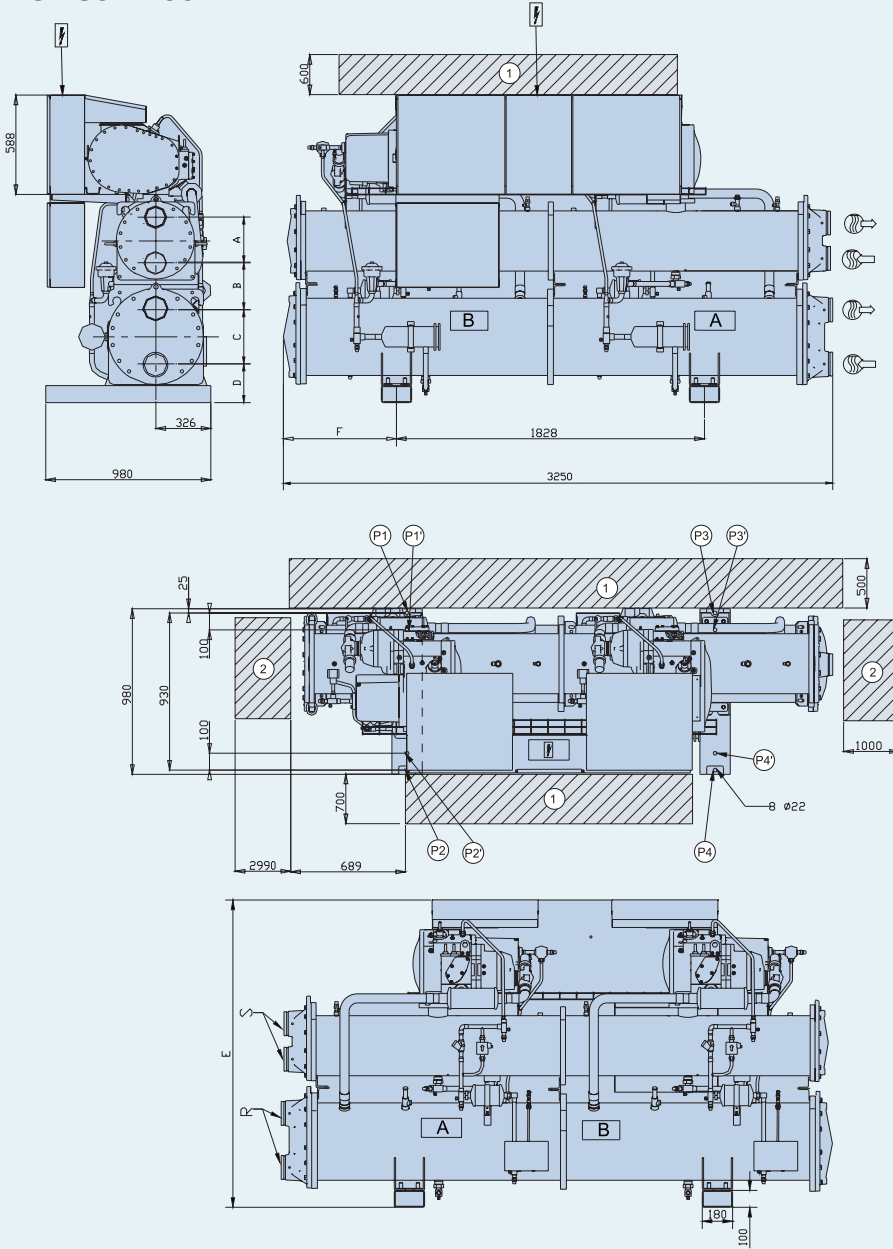
Water inlet



Power supply

# Dimensions/Clearance

## 30HXC 130A-190A



	A	B	C	D	E	F	S	R
30HXC130A	210	318	320	235	1816	656	Dg125	Dg125
30HXC140A								
30HXC155A								
30HXC190A	272	332	304	283	1941	666	Dg125	Dg150

Ⓢ Required clearances for maintenance

Ⓢ Recommended space for tube removal (clearance 2990 and 1000 can be either on the right or the left side).



Water outlet

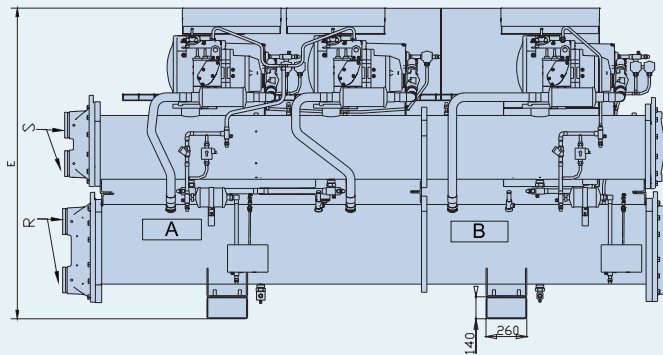
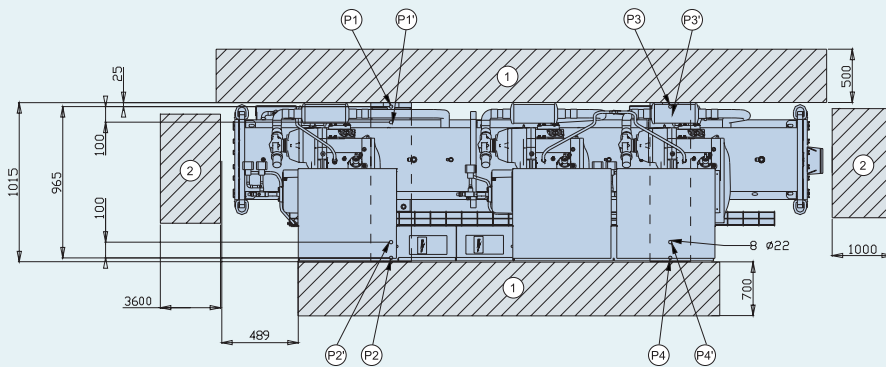
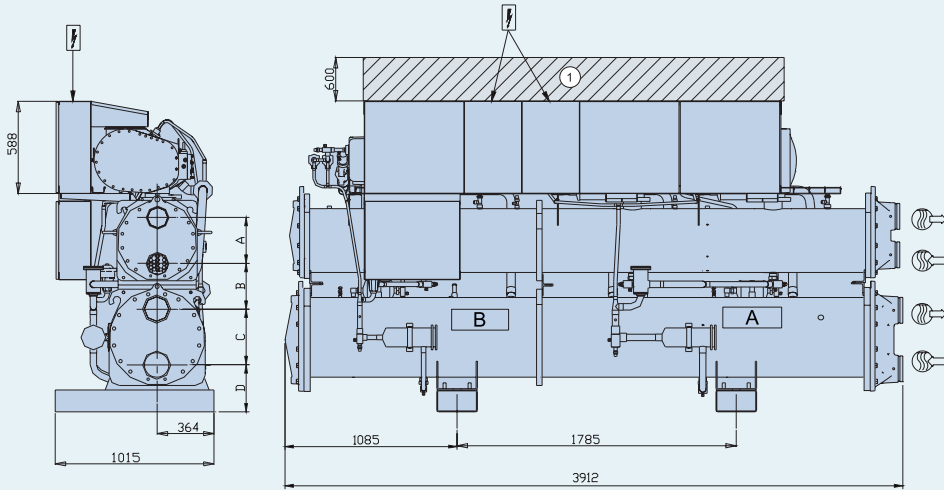


Water inlet






Power supply

# 30HXC 230A-285A



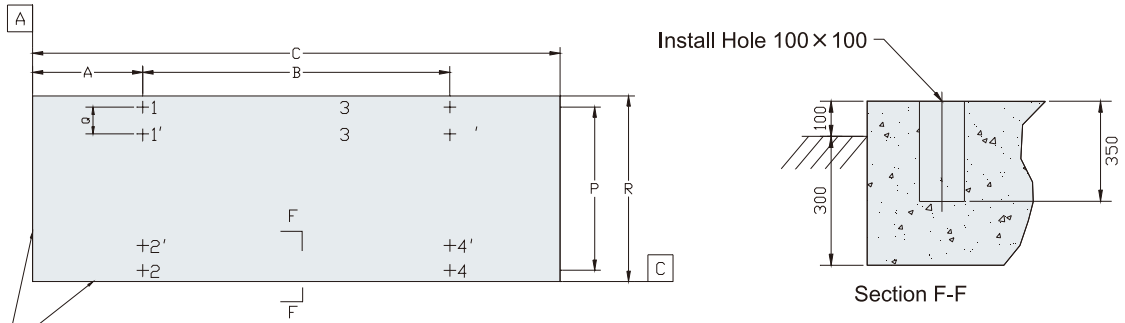
	A	B	C	D	E	R	S
30HXC230A							
30HXC260A	284	356.5	340	309	2060	Dg200	Dg150
30HXC285A							

- ⊙ Required clearances for maintenance
- ⊗ Recommended space for tube removal (clearance 3600 and 1000 can be either on the right or the left side).

 Water outlet    
  Water inlet    
  Power supply



# Chiller Footprint

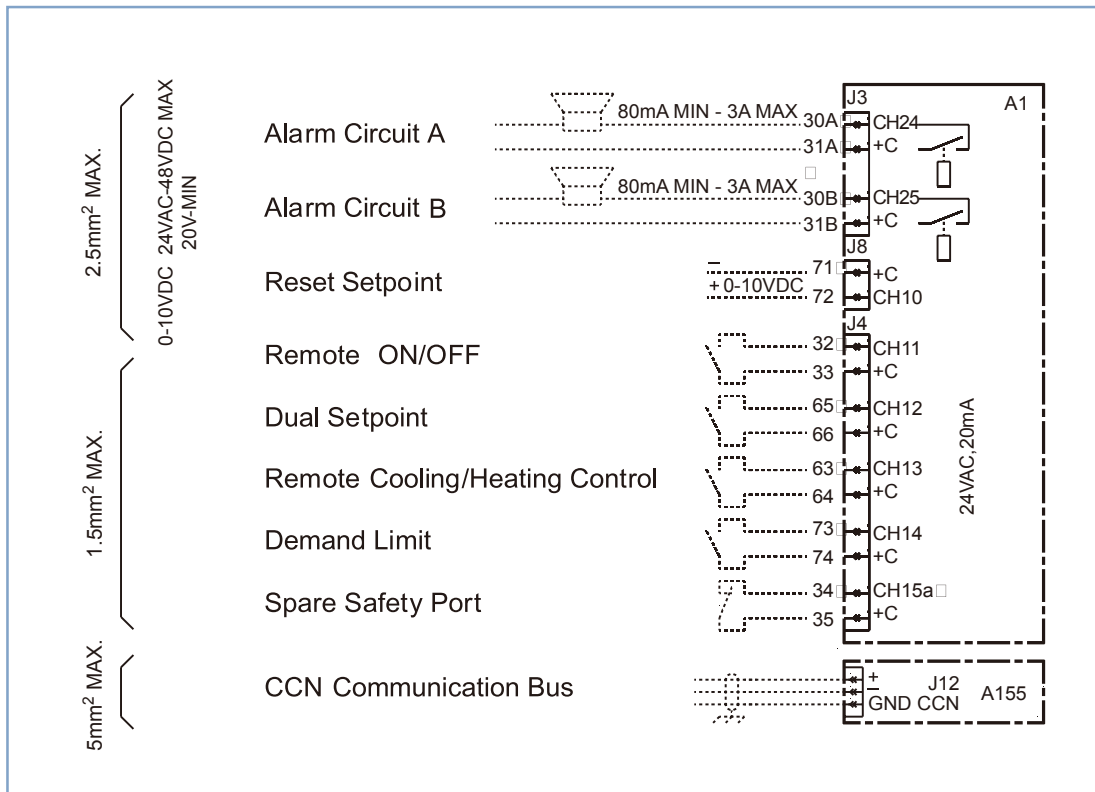


Machine figure dimension, basement need additional clearance.

Dimension(mm)	A	B	C	P	Q	R
30HXY064A	330	1434	2194	900	100	950
30HXY100A	560	1600	2794	900	100	950
30HXC130A						
30HXC140A	685	1828	3278	930	100	980
30HXC155A						
30HXC190A						
30HXC230A						
30HXC260A	1092	1785	3912	965	100	1015
30HXC285A						

Load(kg)	1	2	3	4	1'	2'	3'	4'	Operating Weight
30HXY065A	657	448	473	322	687	418	494	301	1900
30HXY100A	607	456	596	451	625	478	574	433	2110
30HXC130A	812	549	749	507	848	512	782	475	2617
30HXC140A	840	567	774	523	876	530	808	488	2702
30HXC155A	842	569	776	525	880	532	810	490	2712
30HXC190A	987	667	910	615	1030	623	950	576	3179
30HXC230A	1348	958	1342	954	1399	907	1393	903	4602
30HXC260A	1364	970	1358	964	1415	918	1408	915	4656
30HXC285A	1399	995	1392	990	1452	942	1445	937	4776

# Field Wiring



## Standard Accessories

Item	Description	Quantity
a	Flow monitor switch for evaporator	1
b	M20 × 300 hex screw	4
c	Handle of disconnect switch	2
d	Couplings	4
e	Short steel pipes	4

## Main Options

Option	Description	Remark
1	Single circuit units (for 30HXC130~30HXC190)	
104	Condenser and evaporator maximum water-side operating pressure of 16 bar	
107E	Reversed evaporator water inlet/outlet	
104A16	Condenser and evaporator maximum water-side operating pressure of 21 bar	
107C	Reversed condenser water inlet/outlet	
ACC3	RS485 communications interface with open protocol	
25A	Compressor soft start electronic starter	
5	Brine unit for leaving brine <+4°C to > -6°C	
150A	Water-to-water heat pump	Condenser leaving water > 47°C to < 60°C
150B	High condensing temperature unit and non-reversible heat pump	Condenser leaving water > 40°C to < 47°C



Carrier improves the world around us; Carrier improves people's lives; our products and services improve building performance; our culture of improvement will not allow us to rest when it comes to the environment.



The Manufacturer reserves the right to change any product specifications without prior notices  
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Version:	CAT_30HXY/HXC-E-1311-02
Supersede:	CAT_30HXY/HXC-E-1205-01
Effective Date:	Nov, 2013