

# Air-cooled Screw Chiller

## AZ(P)Y1 SERIES

Cooling & Heating

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#### HITACHI. CERTIFIED QUALITY

ISO 9001:2015

ISO 14001:2015

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AZ(P)Y1-C-1812



# OVERVIEW

## OPTIMIZE YOUR SOLUTION WITH HITACHI AIR COOLED CHILLER

Incorporating proprietary cutting edge technology, Hitachi's Air Cooled Chiller combines high efficiency performance and stable operation. New model chiller lineup featuring a G-type semi-hermetic twin-screw compressor using the environmentally-friendly R134a refrigerant.



**Air Conditioning at Office Buildings**

In addition to low noise, low vibration, high efficiency and high performance, the new models come with a user-friendly touch panel type liquid crystal screen display that allows you to check operation status at a glance and has a full range of control functions. As the perfect answer to user needs, Hitachi's chillers are designed to cover a broad range of applications from air conditioning of buildings to cooling of factories.



**Process Cooling at Factory**

## MAIN FEATURES

- 0 ozone depletion potential (ODP) HFC134a refrigerant
- R134a G-type twin-screw compressor
- High efficiency shell-and-tube flooded evaporator
- User-friendly touch LCD Panel

**Nominal capacity range:**  
**158~1602kW**  
**45~456RT**



# FEATURES

## ADOPTING HITACHI R134a SCREW COMPRESSOR

Since 1972 when we started manufacturing them, we have delivered more than 170,000 Hitachi twin-screw compressors to countries around the world where they continue to meet essential air conditioning needs.

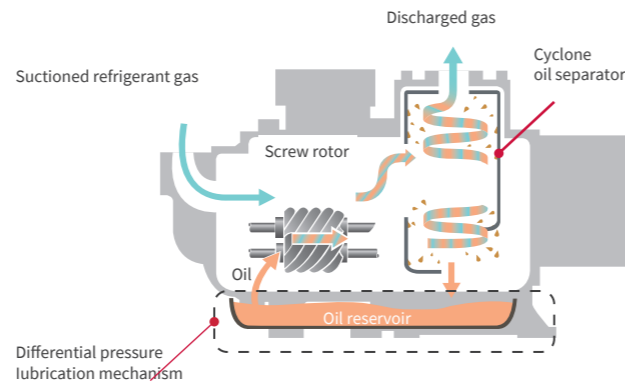
Our new air-cooled chillers adopt G-type semi-hermetic twin-screw compressors that only available to R134a refrigerant.

Powerful cooling capacity, low vibrations and low noise coupled with a simple compressor configuration have greatly enhanced reliability.

The cyclone oil separator they employ has been designed with extensive use of computer simulation. Thanks to these efforts, oil separation efficiency is greatly increased.

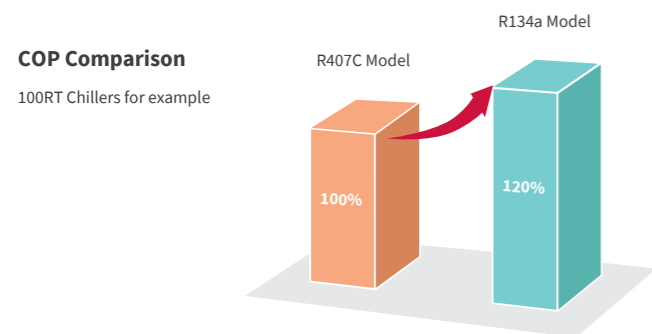


Operation Image



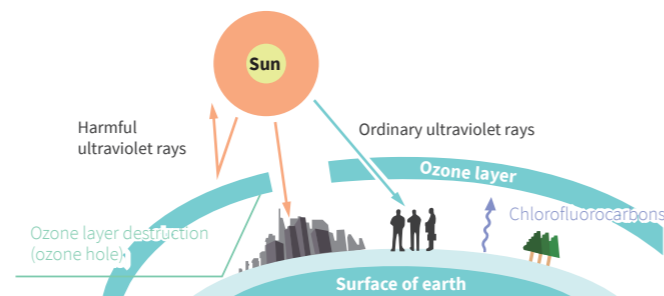
## BETTER PERFORMANCE AND ENERGY SAVING

Hitachi's new air-cooled chiller (AZ(P)Y1 Series) adopts more efficient semi-hermetic twin-screw compressor and better shell-and-tube dry type evaporator brings you significant energy saving experience under stable and durable operation.



## HFC134a, 0 ODP(OZONE DEPLETION POTENTIAL REFRIGERANT), ADOPTED

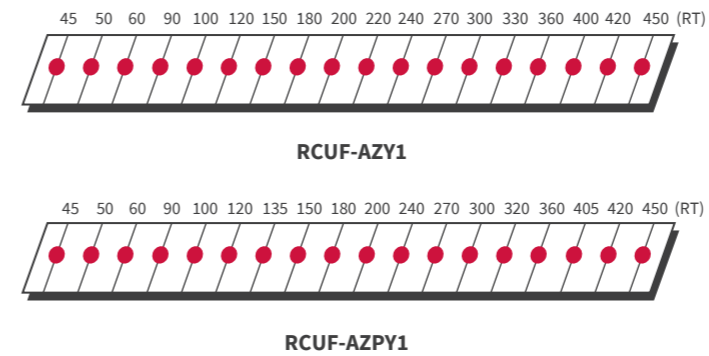
Chlorofluorocarbons(CFCs) in stratosphere are exposed to ultraviolet rays which decomposes them, and generates chlorine atoms. It is considered that chlorine atoms combine oxygen atoms destroying the ozone. Chlorine atoms, HFC134a does not destroy ozone in atmosphere.



# LINE-UP & CONTROL

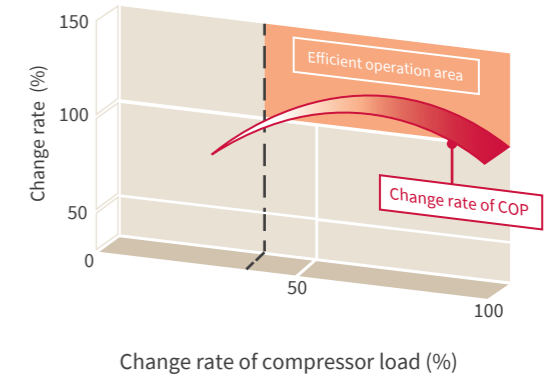
## WIDE LINE-UP

To meet the need of air conditioning systems for large facilities and the demand for higher capacity industrial cooling systems.



## ACCURATE CHILLER CONTROL

Intermediate efficiency improved



## MULTIPLE COMPRESSORS CONTROL

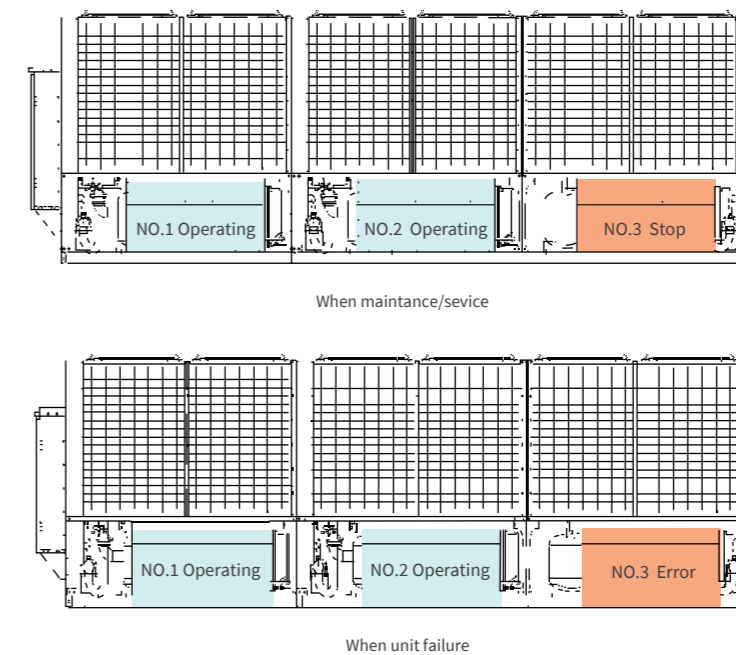
Hitachi air chiller units feature a modular.

8 units with the same model can be connected via H-LINK transmission, so as to realize the maximum capacity of 1464 RT.

Each module can be transported individually which enhance mobility and convenience of installation.

Besides refrigerant system of each module can operate, which makes maintenance easier.

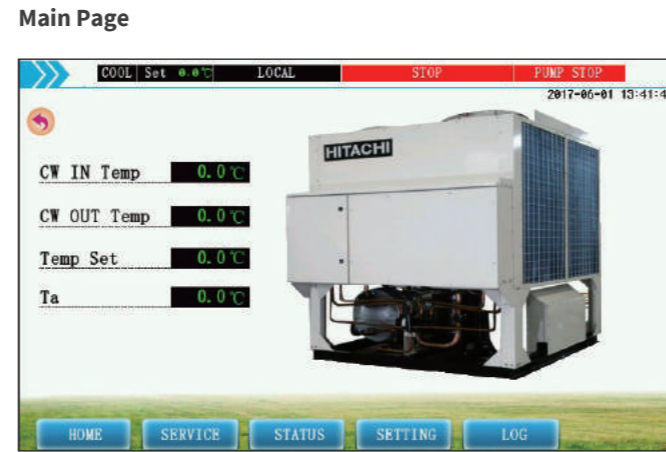
If unexpected trouble occurs in one module, the remaining modules will operate as backup.



# INTELLIGENT CONTROL

## CLEAR USER-FRIENDLY LCD TOUCH CONSOLE

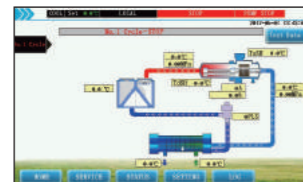
The display makes it easy to view the current operating status and simplify the setting procedure. Various parameters can be confirmed at a glance. Regardless of operating status, the console allows you to set a variety of operation modes. A warning log function makes it possible to recall the latest 10 recent warning events. The user interface is provided in both English and Chinese.



### Compressor Page



### Status Page



### Parameter Setting Page

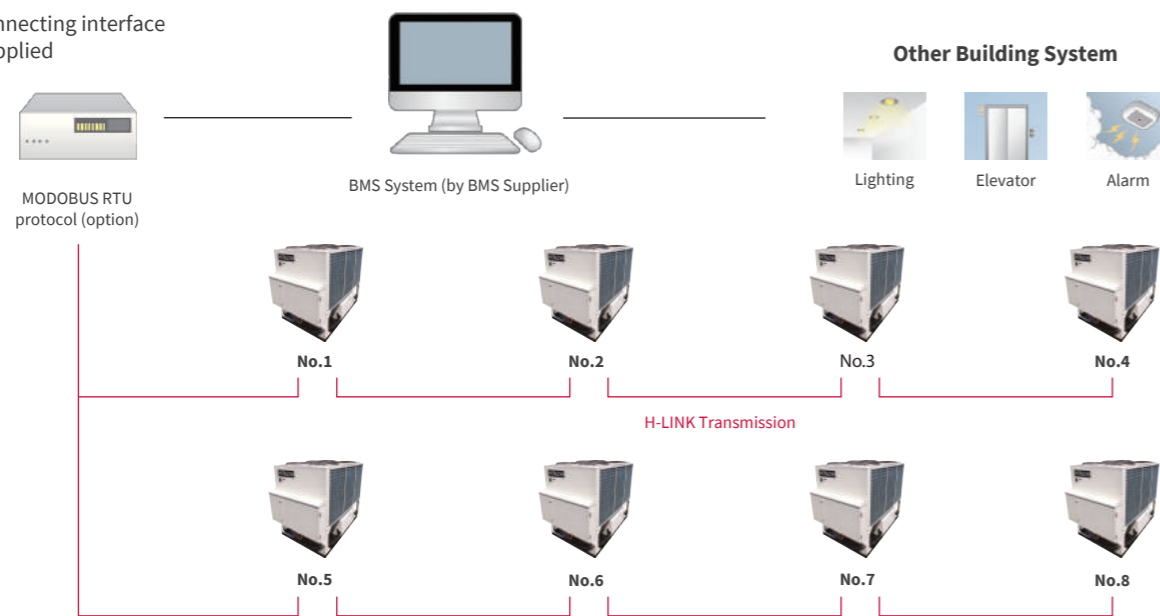


### Setting Page



## BUILDING MANAGEMENT SYSTEM (BMS)

A BMS-connecting interface can be supplied



Through H-LINK transmission, at most of 8 chillers of the same model can be connected to cascade a maximum volume of 1464 RT.

# SPECIFICATIONS

## AZY1 SERIES

Model		RCUF45AZY1	RCUF50AZY1	RCUF60AZY1	RCUF90AZY1	RCUF100AZY1	RCUF120AZY1
Power Source		Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz					
Nominal cooling capacity	kW	158	175	215	316	351	440
	USRT	45	50	61	90	100	125
Power input	kcal/h	135,880	150,500	184,900	271,760	301,860	378,400
	kW	48.5	53.7	66.0	96.9	107.7	135.0
Capacity control		Continuous capacity control					
Overall dimension	%	100~25,0					
	Length mm	2,390	2,390	2,390	4,490	4,490	4,490
	Width mm	2,060	2,060	2,060	2,060	2,060	2,060
Net weight	Height mm	2,120	2,120	2,120	2,160	2,160	2,160
	kg	1,550	1,600	1,710	2,900	3,000	3,220
Refrigerant	Type	R134a					
	Flow control	Electronic expansive valve					
	Number of circuits	1	1	1	2	2	2
Compressor	Type	Semi-Hermetic Screw Type(R134a only)					
	Model	ASCCW50ZG	ASCCW50ZG	ASCCW60ZG	ASCCW50ZG	ASCCW50ZG	ASCCW60ZG
	Quantity	Set 1	1	1	2	2	2
Condenser Fan motor	Condenser fan	Cross fin type					
	Power Input kW	1.1	1.1	1.1	1.1	1.1	1.1
	Quantity	4	4	4	8	8	8
Evaporator		Shell-and-Tube type					
	Piping connections for water side heat exchanger	Inlet	DN80	DN80	DN80	DN125	DN125
Safety devices	Outlet	DN80	DN80	DN80	DN125	DN125	DN125
		Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.					
Shipping Dimensions	Length mm	2,410	2,410	2,410	4,510	4,510	4,510
	Width mm	2,080	2,080	2,080	2,080	2,080	2,080
	Height mm	2,150	2,150	2,150	2,190	2,190	2,190
Shipping weight	kg	1,590	1,640	1,750	2,940	3,040	3,260

Model		RCUF150AZY1	RCUF180AZY1	RCUF200AZY1	RCUF220AZY1	RCUF240AZY1	RCUF270AZY1
Power Source		Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz					
Nominal cooling capacity	kW	530	645	702	791	880	970
	USRT	151	183	200	225	250	276
Power input	kcal/h	455,800	554,700	603,720	680,260	756,800	834,200
	kW	162.6	197.9	215.3	242.6	269.9	297.5
Capacity control		Continuous capacity control					
Overall dimension	%	100~25,0					
	Length mm	6,590	6,590	9,080	9,080	9,080	11,180
	Width mm	2,060	2,060	2,060	2,060	2,060	2,060
Net weight	Height mm	2,200	2,200	2,160	2,160	2,160	2,200
	kg	4,650	4,880	3,000×2	3,220+3,000	3,220×2	4,650+3,220
Refrigerant	Type	R134a					
	Flow control	Electronic expansive valve					
	Number of circuits	3	3	4	4	4	5
Compressor	Type	Semi-Hermetic Screw Type(R134a only)					
	Model	ASCCW50ZG	ASCCW60ZG	ASCCW50ZG	ASCCW50ZG /ASCCW60ZG	ASCCW60ZG	ASCCW50ZG /ASCCW60ZG
	Quantity	Set 3	3	4	2/2	4	3/2
Condenser Fan motor	Condenser fan	Cross fin type					
	Power Input kW	1.1	1.1	1.1	1.1	1.1	1.1
	Quantity	12	12	16	16	16	20
Evaporator		Shell-and-Tube type					
	Piping connections for water side heat exchanger	Inlet	DN125	DN125	DN125	DN125	DN125
Safety devices	Outlet	DN125	DN125	DN125	DN125	DN125	DN125
		Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.					
Shipping Dimensions	Length mm	6,610	6,610	4,510×2	4,510×2	4,510×2	6,610+4,510
	Width mm	2,080	2,080	2,080	2,080	2,080	2,080
	Height mm	2,230	2,230	2,190	2,190	2,190	2,230
Shipping weight	kg	4,690	4,920	3,040×2	3,260+3,040	3,260×2	4,690+3,260

# SPECIFICATIONS

## AZY1 SERIES

Model	RCUF300AZY1	RCUF330AZY1	RCUF360AZY1	RCUF400AZY1	RCUF420AZY1	RCUF450AZY1	
Power Source	Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz						
Nominal cooling capacity	kW	1,060	1,175	1,290	1,411	1,500	
	USRT	301	334	367	401	426	
	kcal/h	911,600	1,010,500	1,109,400	1,213,460	1,290,000	
Power input	kW	325.2	360.4	395.7	432.8	460.1	
Capacity control	—	Continuous capacity control					
	%	100~25,0	100~25,0	100~25,0	100~25,0	100~25,0	
Overall dimension	Length	mm	13,280	13,280	13,280	18,670	
	Width	mm	2,060	2,060	2,060	2,060	
	Height	mm	2,200	2,200	2,200	2,200	
Net weight	kg	4,650×2	4,880×4,650	4,880×2	4,650×2+3,000	4,650×2+3,220	
Refrigerant	Type	R134a					
	Flow control	Electronic expansive valve					
	Number of circuits	—	6	6	6	8	
Compressor	Type	Semi-Hermetic Screw Type(R134a only)					
	Model	—	ASCCW50ZG	ASCCW50ZG / ASCCW60ZG	ASCCW60ZG	ASCCW50ZG / ASCCW60ZG	
	Quantity	Set	6	3/3	6	8	
Condenser	—	Cross fin type					
	Fan motor	Condenser fan	Direct drive propeller fan				
	Power Input	kW	1.1	1.1	1.1	1.1	
Evaporator	—	Shell-and-Tube type					
	Piping connections for water side heat exchanger	Inlet	DN125	DN125	DN125	DN125	
	Outlet	DN125	DN125	DN125	DN125	DN125	
Safety devices	Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.						
Shipping Dimensions	Length	mm	6,610×2	6,610×2	6,610×2	6,610×2+4,510	
	Width	mm	2,080	2,080	2,080	2,080	
	Height	mm	2,230	2,230	2,230	2,230	
Shipping weight	kg	4,690×2	4,920×4,690	4,920×2	4,690×2+3,040	4,690×2+3,260	

Notes:

- The nominal cooling capacities are based on GB/T 18430.1-2015(\*1)  
Chilled Water Outlet Temperature /Nominal water flow: 7 °C / 0.172 m<sup>3</sup> / (h·kW)  
Condenser Air Inlet Temperature:35 °C (DB)
- The units greater than 200AZY1 including 200AZY1 consist of two or three modules and are separately shipped.
- The common chilled water piping (Filed-Supplied) between each water cooler shall be directly connected at site.
- Water Flow  
1) RCUF200,240,300,360,450AZY1  
It is necessary to control the common water flow volume to each cooler.  
2) RCUF220,270,330,400,420AZY1  
Because the chilled water flow rate is different between No.1 No.2 and No.3 units,  
it is necessary to control the water flow volume of each unit with adjusting valves (Filed-Supplied).
- It is required to connect electrical control wires between No.1, No.2 and No.3 units for the unit greater than 200AZY1 including 200AZY1.

Working Range

Item	Standard
Chilled Water Outlet Temperature	5~15 °C
Condenser Air Inlet Temperature(DB)	5~43 °C

# SPECIFICATIONS

## AZPY1 SERIES

Model	RCUF45AZPY1	RCUF50AZPY1	RCUF60AZPY1	RCUF90AZPY1	RCUF100AZPY1	RCUF120AZPY1	
Power Source	Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz						
Nominal cooling capacity	kW	160	178	215	320	430	
	USRT	45	51	61	91	122	
	kcal/h	137,600	153,080	184,900	275,200	369,800	
Power input	kW	45.6	50.7	61.3	91.2	122.5	
Capacity control	—	Continuous capacity control					
	%	100~25,0	100~25,0	100~25,0	100~25,0	100~25,0	
Overall dimension	Length	mm	2,390	2,390	3,300	4,490	
	Width	mm	2,060	2,060	2,060	2,060	
	Height	mm	2,120	2,120	2,120	2,160	
Net weight	kg	1,600	1,700	2,000	2,950	3,150	
Refrigerant	Type	R134a					
	Flow control	Electronic expansive valve					
	Number of circuits	—	1	1	2	2	
Compressor	Type	Semi-Hermetic Screw Type(R134a only)					
	Model	—	ASCCW50ZG	ASCCW50ZG	ASCCW60ZG	ASCCW50ZG	
	Quantity	Set	1	1	1	2	
Condenser	—	Cross fin type					
	Fan motor	Condenser fan	Direct drive propeller fan				
	Power Input	kW	1.1	1.1	1.1	1.1	
Evaporator	—	Shell-and-Tube type					
	Piping connections for water side heat exchanger	Inlet	DN80	DN80	DN80	DN125	
	Outlet	DN80	DN80	DN80	DN125		
Safety devices	Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.						
Shipping Dimensions	Length	mm	2,410	2,410	3,320	4,510	
	Width	mm	2,080	2,080	2,080	2,080	
	Height	mm	2,150	2,150	2,150	2,190	
Shipping weight	kg	1,640	1,740	2,040	2,990	3,190	

Model	RCUF135AZPY1	RCUF150AZPY1	RCUF180AZPY1	RCUF200AZPY1	RCUF240AZPY1	RCUF270AZPY1	
Power Source	Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz						
Nominal cooling capacity	kW	480	534	640	712	860	
	USRT	136	152	182	202	245	
	kcal/h	412,800	459,240	550,400	612,320	739,600	
Power input	kW	136.8	152.1	182.3	202.8	245.0	
Capacity control	—	Continuous capacity control					
	%	100~25,0	100~25,0	100~25,0	100~25,0	100~25,0	
Overall dimension	Length	mm	6,590	6,590	9,080	9,080	
	Width	mm	2,060	2,060	2,060	2,060	
	Height	mm	2,200	2,200	2,160	2,160	
Net weight	kg	4,500	4,700	2,950×2	3,150×2	3,750×2	
Refrigerant	Type	R134a					
	Flow control	Electronic expansive valve					
	Number of circuits	—	3	3	4	4	
Compressor	Type	Semi-Hermetic Screw Type(R134a only)					
	Model	—	ASCCW50ZG	ASCCW50ZG	ASCCW50ZG	ASCCW60ZG	
	Quantity	Set	3	3	4	4	
Condenser	—	Cross fin type					
	Fan motor	Condenser fan	Direct drive propeller fan				
	Power Input	kW	1.1	1.1	1.1	1.1	
Evaporator	—	Shell-and-Tube type					
	Piping connections for water side heat exchanger	Inlet	DN125	DN125	DN125	DN125	
	Outlet	DN125	DN125	DN125	DN125		
Safety devices	Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.						
Shipping Dimensions	Length	mm	6,610	6,610	4,510×2	6,330×2	
	Width	mm	2,080	2,080	2,080	2,080	
	Height	mm	2,230	2,230	2,190	2,190	
Shipping weight	kg	4,540	4,740	2,990×2	3,190×2	3,790×2	

# SPECIFICATIONS

## AZPY1 SERIES

Model		RCUF300AZPY1	RCUF320AZPY1	RCUF360AZPY1	RCUF405AZPY1	RCUF420AZPY1	RCUF450AZPY1	
Power Source		Main (AC3φ) 380,415V/50Hz, Control (AC1φ) 220,240V/50Hz						
Nominal cooling capacity	kW	1,068	1,142	1,290	1,440	1,494	1,602	
	USRT	304	325	367	409	425	456	
Power input	kcal/h	918,480	982,120	1,109,400	1,238,400	1,284,840	1,377,720	
	kW	304.3	325.4	367.5	410.3	425.6	456.4	
Capacity control		Continuous capacity control						
Overall dimension	Length	mm	13,280	16,290	19,930	20,770	20,770	20,770
	Width	mm	2,060	2,060	2,060	2,060	2,060	2,060
	Height	mm	2,200	2,200	2,200	2,200	2,200	2,200
Net weight	kg	4,700×2	3,150×2+3,750	3,750×3	4,500×3	4,700+4,500×2	4,700×3	
Refrigerant	Type	R134a						
	Flow control	Electronic expansive valve						
	Number of circuits	6	6	6	9	9	9	
Compressor	Type	Semi-Hermetic Screw Type(R134a only)						
	Model	ASCCW50ZG	ASCCW50ZG / ASCCW60ZG	ASCCW60ZG	ASCCW50ZG	ASCCW50ZG	ASCCW50ZG	
	Quantity	Set 6	4/2	6	9	9	9	
Condenser		Cross fin type						
Fan motor	Condenser fan	Direct drive propeller fan						
	Power Input	kW	1.1	1.1	1.1	1.1	1.1	1.1
	Quantity	24	28	36	36	36	36	
Evaporator		Shell-and-Tube type						
	Piping connections for water side heat exchanger	Inlet	DN125	DN125	DN125	DN125	DN125	DN125
	Outlet	DN125	DN125	DN125	DN125	DN125	DN125	
Safety devices		Three-Phase Over current Relay, High-Pressure Switch, High and Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor Motor, Freeze Protection Control, Reverse Phase Protection Control, Discharge Gas Overheat Protection, Compressor frequent ON/OFF control and Pressure Relief Valve.						
Shipping Dimensions	Length	mm	6,610×2	4,510×2+6,330	6,330×3	6,610×3	6,610×3	6,610×3
	Width	mm	2,080	2,080	2,080	2,080	2,080	2,080
	Height	mm	2,230	2,230	2,230	2,230	2,230	2,230
Shipping weight	kg	4,740×2	3,190×2+3,790	3,790×3	4,540×3	4,740+4,540×2	4,740×3	

**Notes:**

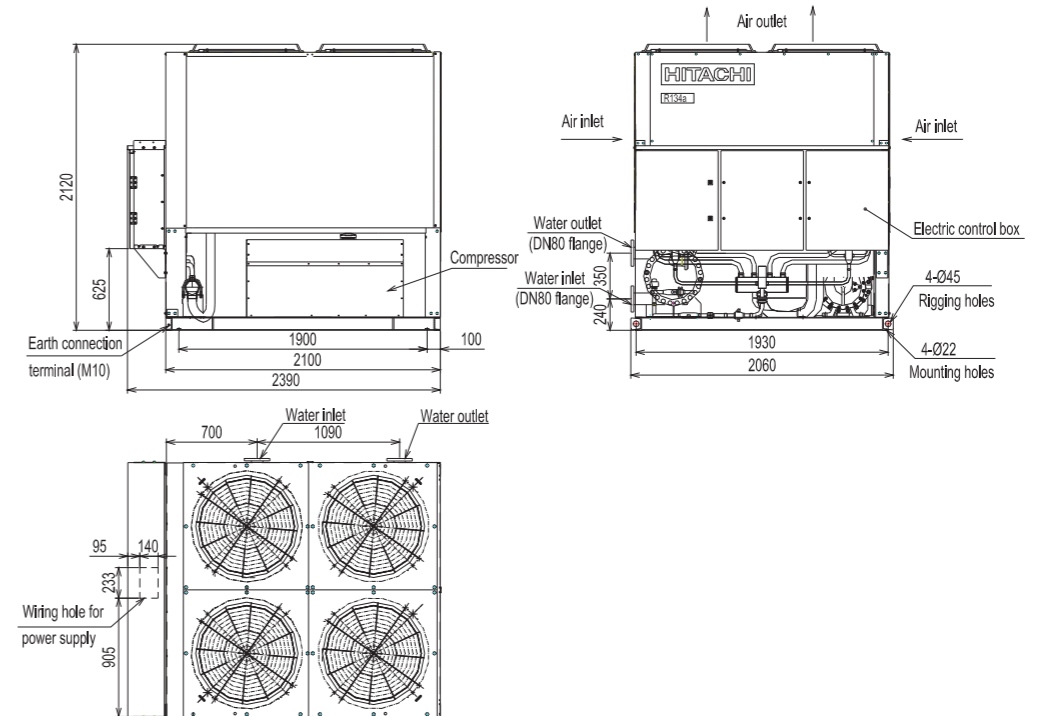
- The nominal cooling capacities are based on GB/T 18430.1-2015(\*1)  
Chilled Water Outlet Temperature /Nominal water flow: 7°C/0.172 m<sup>3</sup> / (h·kW)  
Condenser Air Inlet Temperature:35 °C (DB)
- The units greater than 180AZPY1 including 180AZPY1 consist of two or three modules and are separately shipped.
- The common chilled water piping (Filed-Supplied) between each water cooler shall be directly connected at site.
- Water Flow  
1) RCUF180,200,240,270,300,360,405,450AZPY1  
It is necessary to control the common water flow volume to each cooler.  
2) RCUF320,420AZPY1  
Because the chilled water flow rate is different between No.1 No.2 and No.3 units,  
it is necessary to control the water flow volume of each unit with adjusting valves (Filed-Supplied).  
5.It is required to connect electrical control wires between No.1, No.2 and No.3 units for the unit greater than 180AZPY1 including 180AZPY1.

**Working Range**

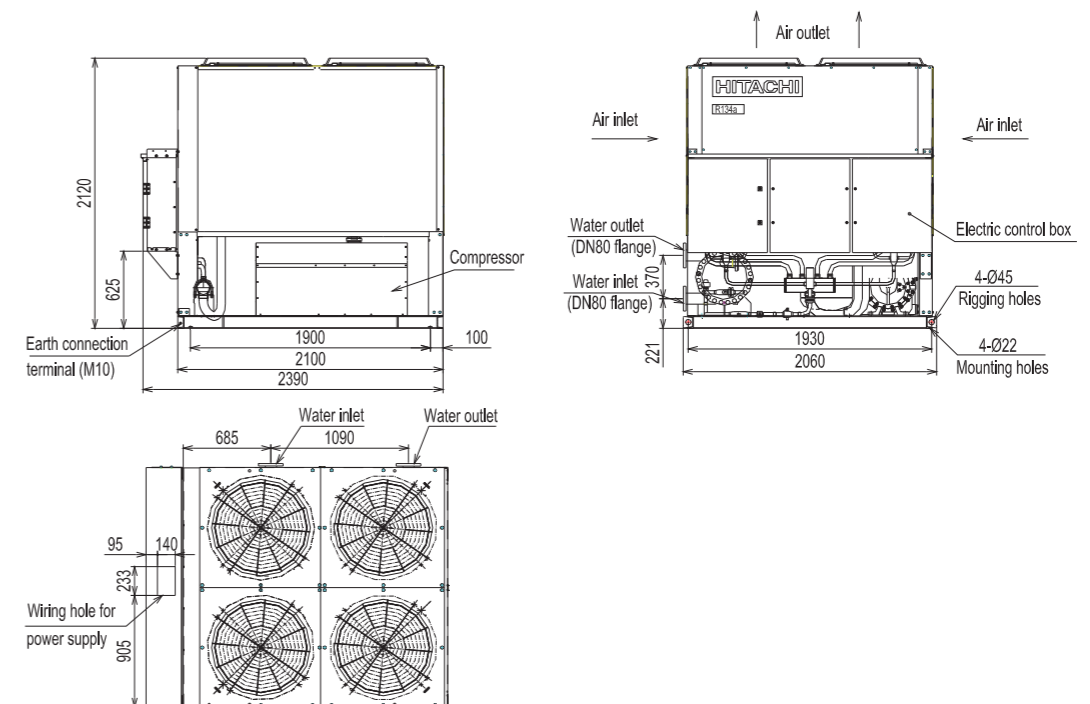
Item	Standard
Chilled Water Outlet Temperature	5~15 °C
Condenser Air Inlet Temperature(DB)	5~43 °C

# DIMENSIONS

## RCUF45AZY1 / RCUF50AZY1

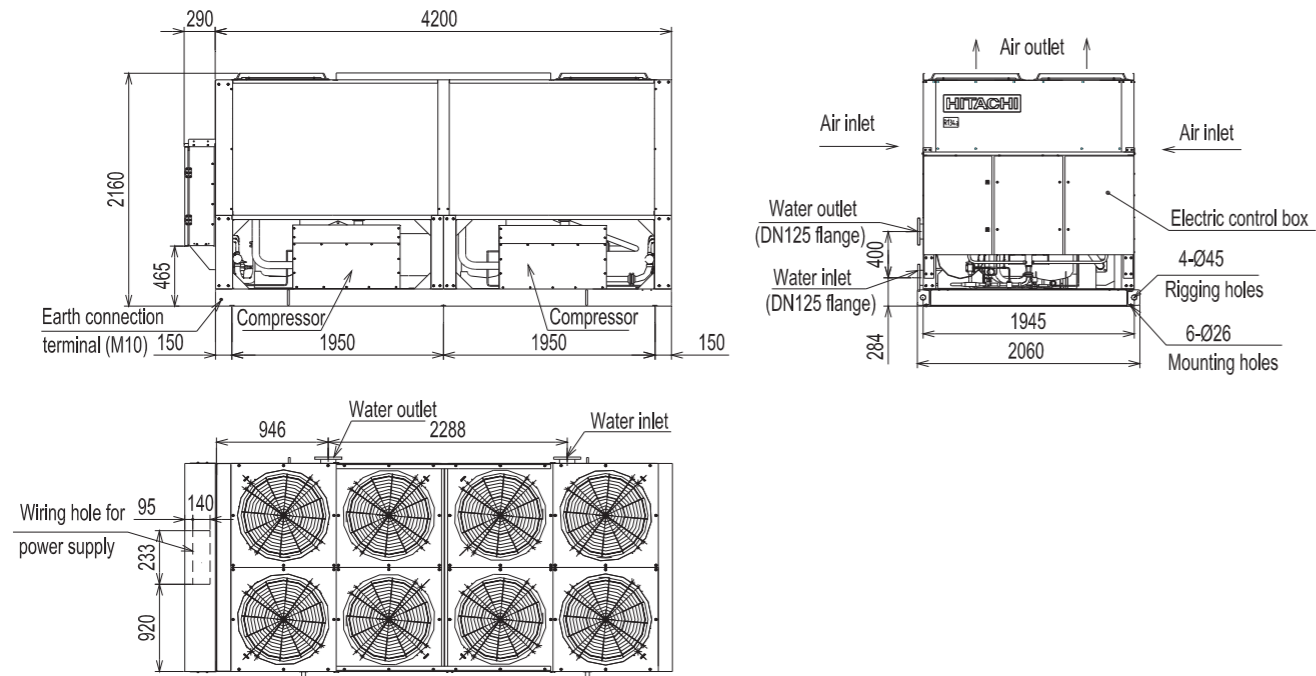


## RCUF45AZPY1 / RCUF50AZPY1 / RCUF60AZY1

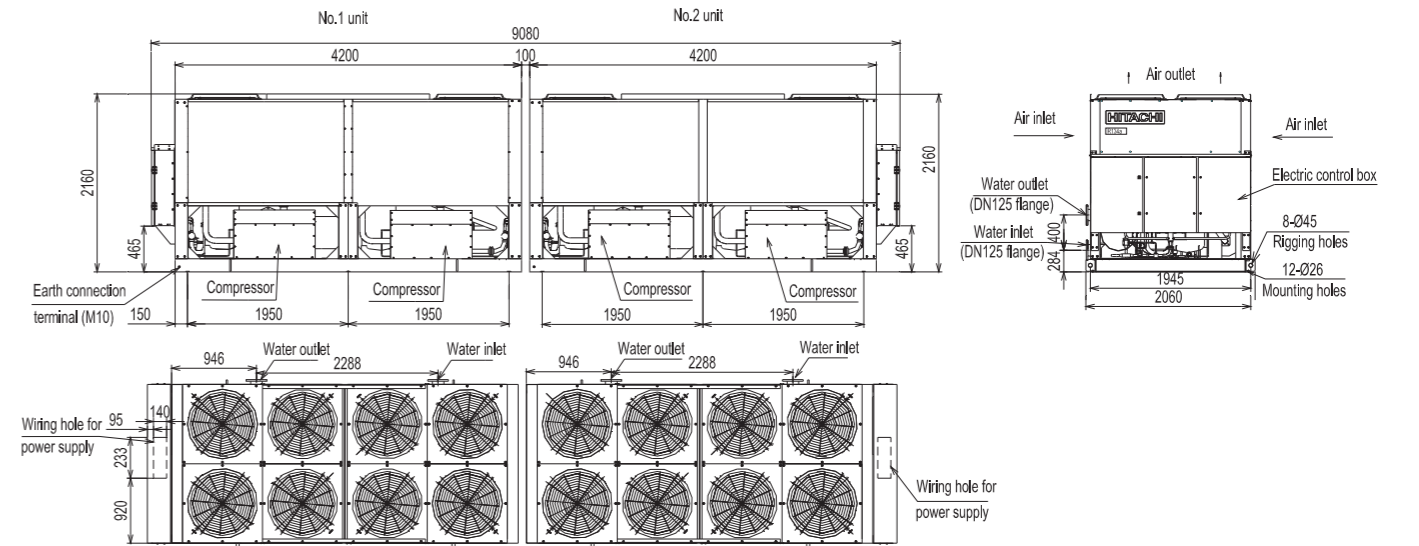


# DIMENSIONS

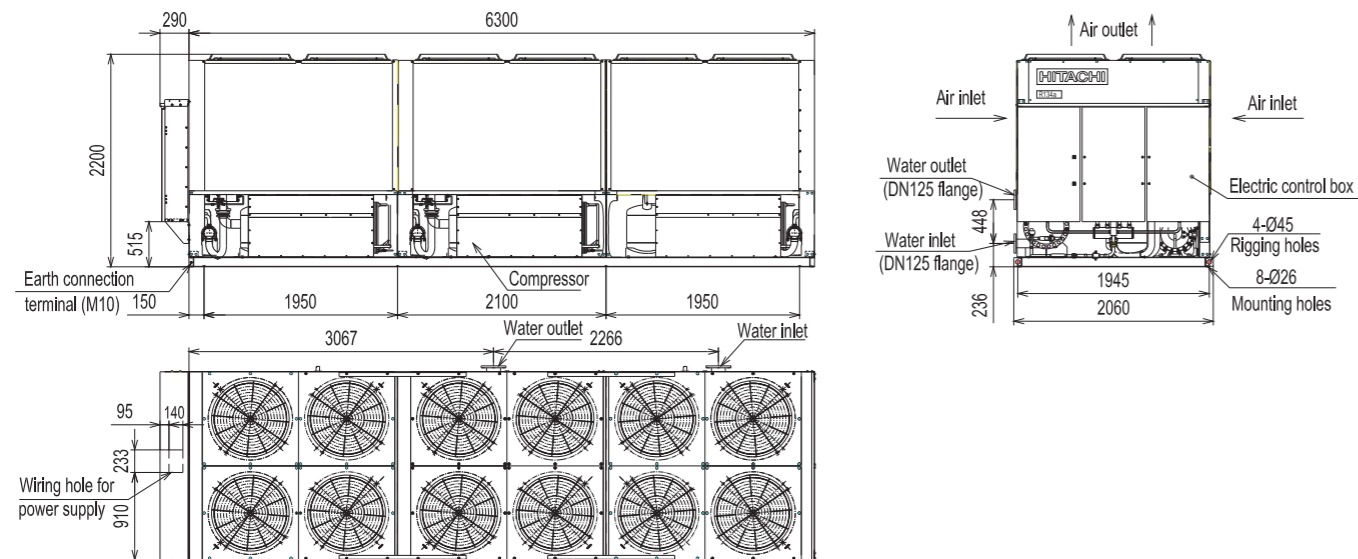
## RCUF90AZY1 / RCUF100AZY1 / RCUF120AZY1 RCUF90AZPY1 / RCUF100AZPY1



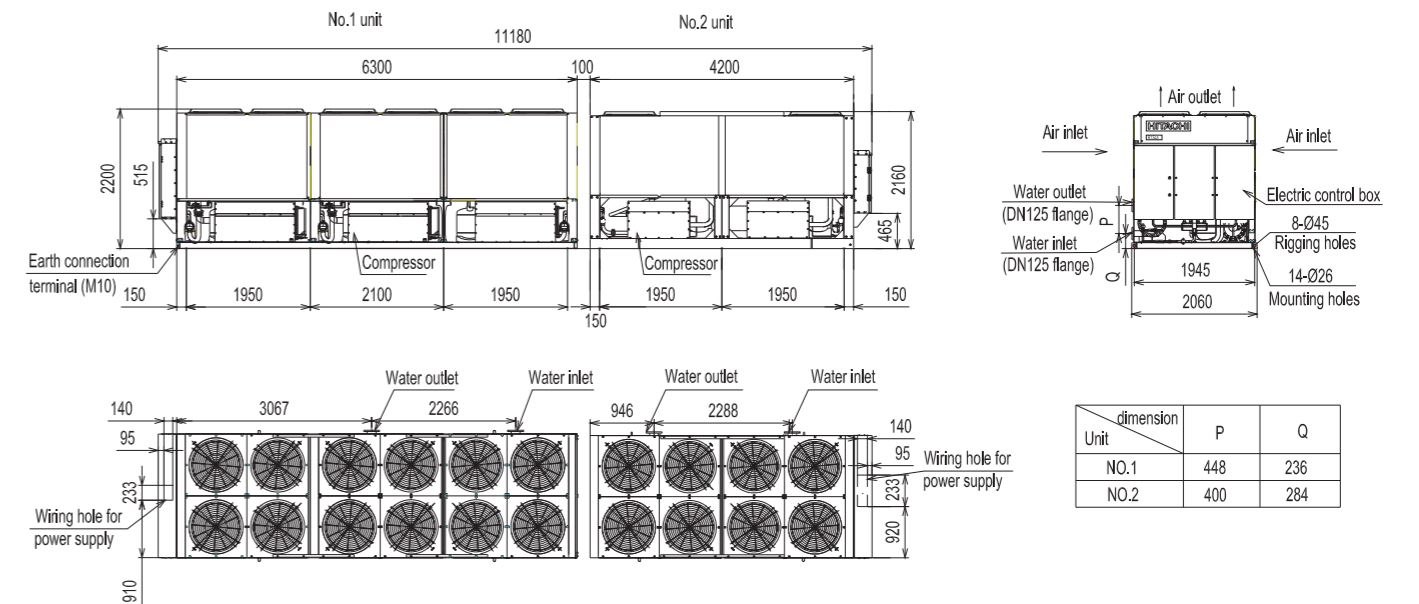
## RCUF200AZY1 / RCUF220AZY1 / RCUF240AZY1 RCUF180AZPY1 / RCUF200AZPY1



## RCUF150AZY1 / RCUF180AZY1 / RCUF135AZPY1 / RCUF150AZPY1

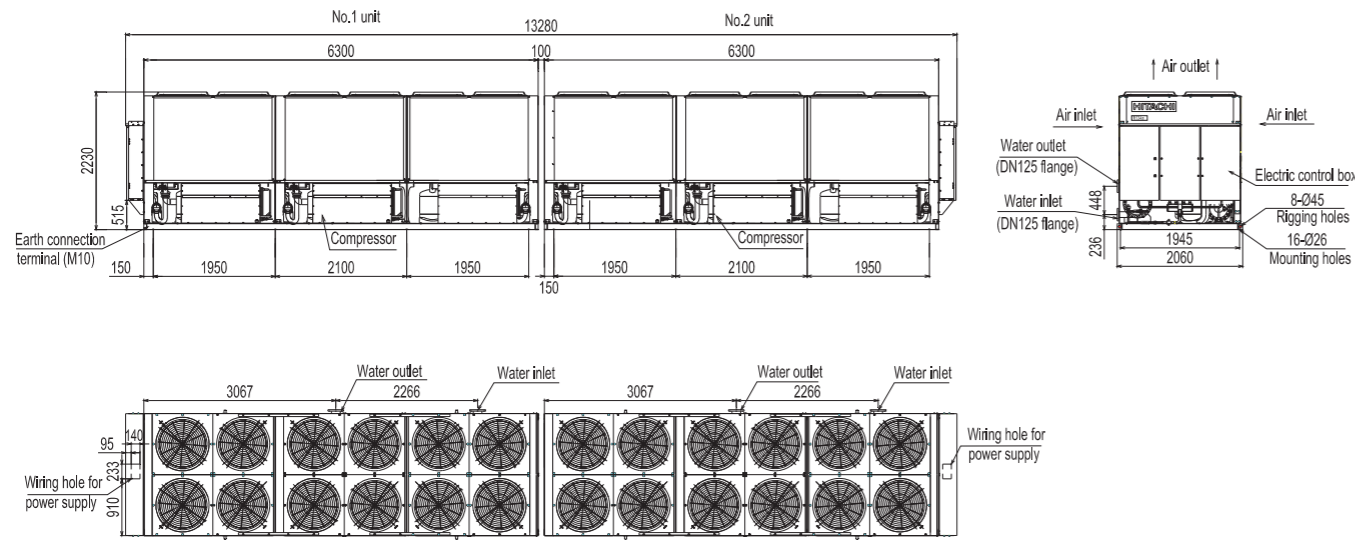


## RCUF270AZY1

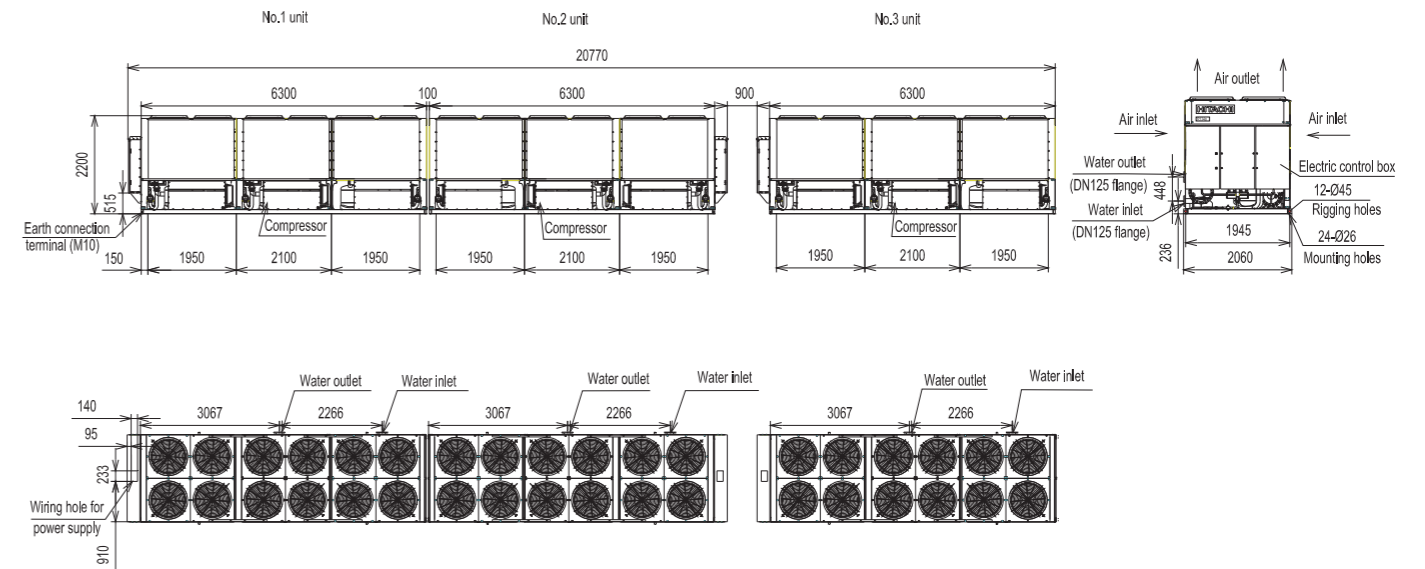


# DIMENSIONS

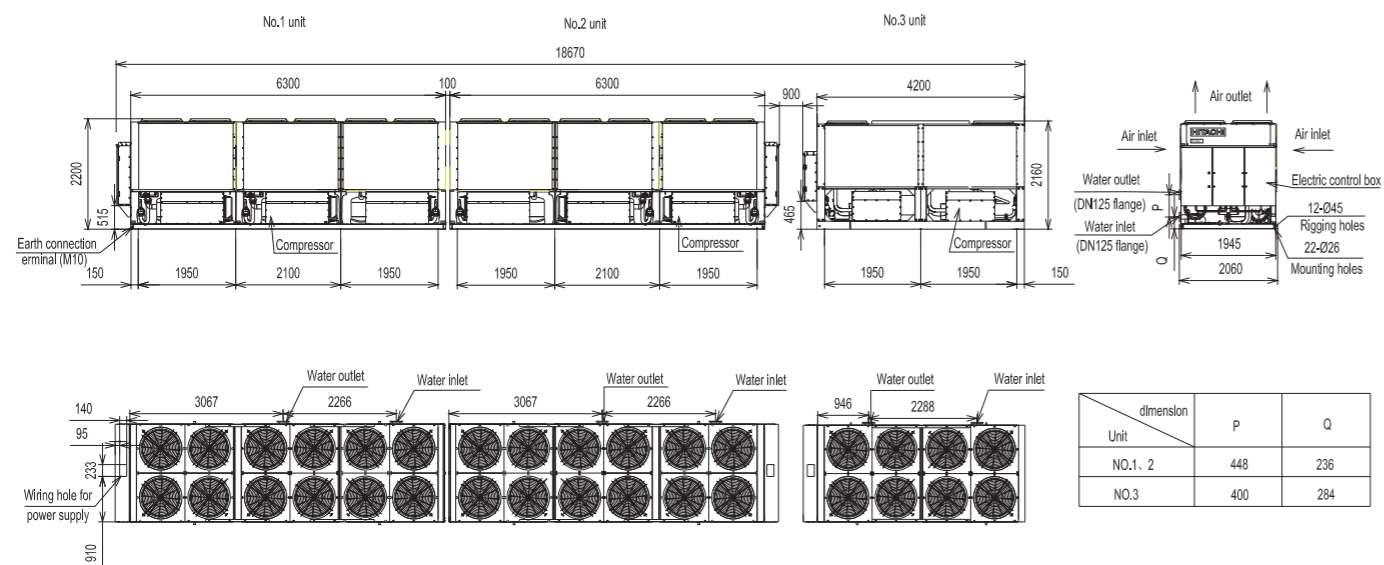
## RCUF300AZY1 / RCUF330AZY1 / RCUF360AZY1 RCUF270AZPY1 / RCUF300AZPY1



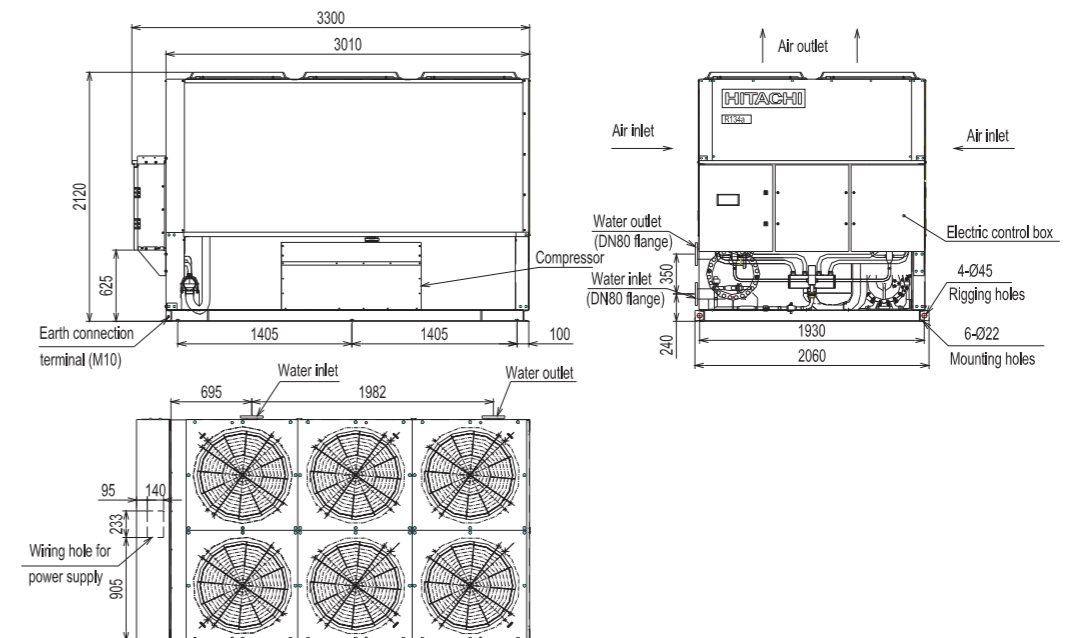
## RCUF450AZY1 / RCUF405AZPY1 / RCUF420AZPY1 / RCUF450AZPY1



## RCUF400AZY1 / RCUF420AZY1

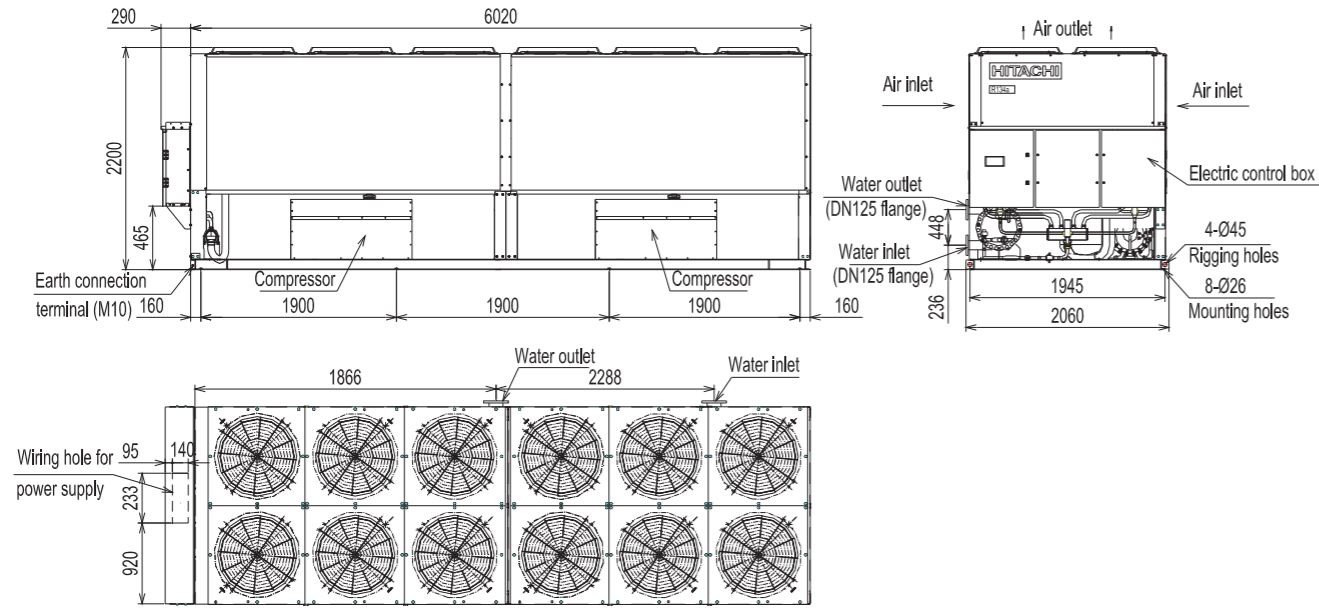


## RCUF60AZPY1

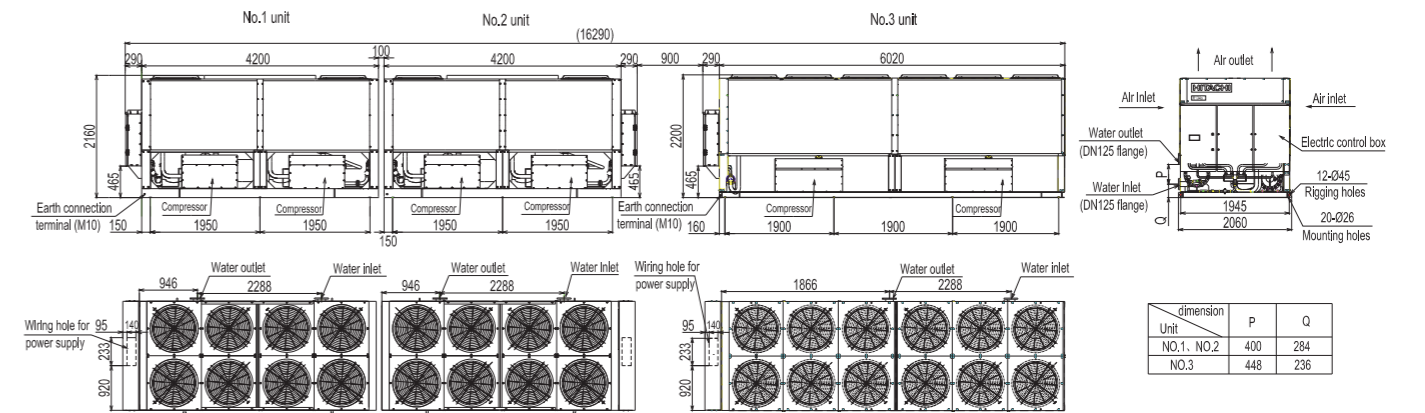


# DIMENSIONS

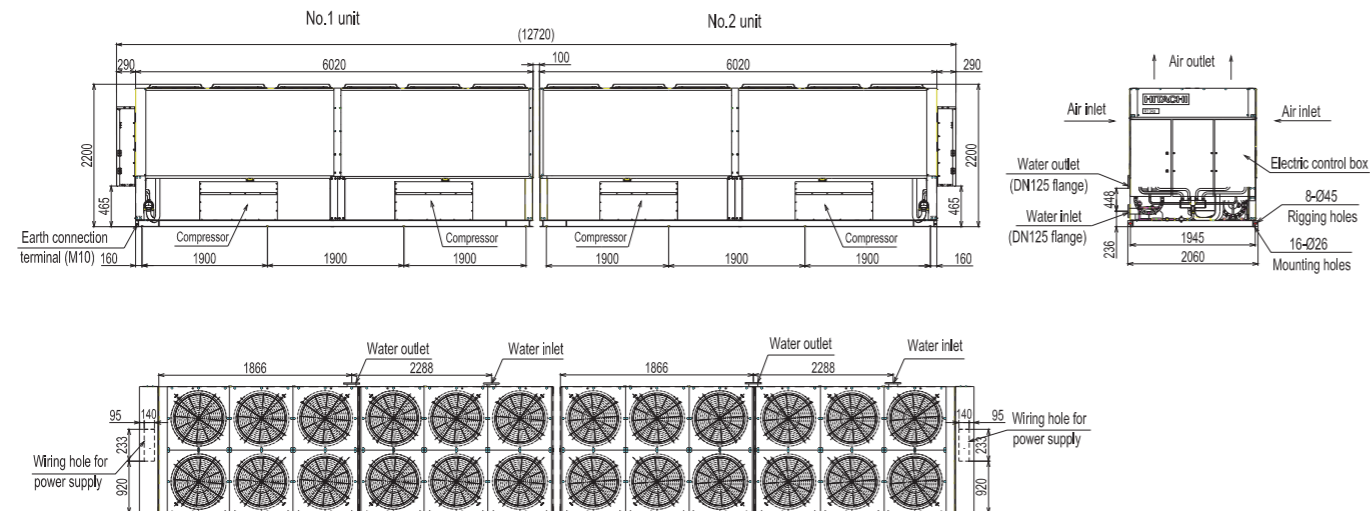
## RCUF120AZPY1



## RCUF120AZPY1



## RCUF240AZPY1



## RCUF360AZPY1

