

HITACHI
Inspire the Next

**TWIN SCREW COMPRESSOR TYPE
HITACHI AIR-COOLED CHILLERS**

NEW
H Series



R407C

R22

HITACHI

Hitachi Appliances, Inc.

URL : <http://www.hitachi-ap.com>

Specifications in this catalogue are subject to change without notice in order that HITACHI may bring the latest innovations to their customers.

Distributed By :



NEW The High-efficiency Air-cooled Chiller "H series"

The air-cooled chiller "H series" with improved efficiency and functionality by several advanced technologies.

This series with the world's best standard A-type screw compressor and newly designed shell and tube heat exchanger that have powerful cooling ability, low noise, low vibration, high efficiency and high reliability is the perfect answer to all your needs!!



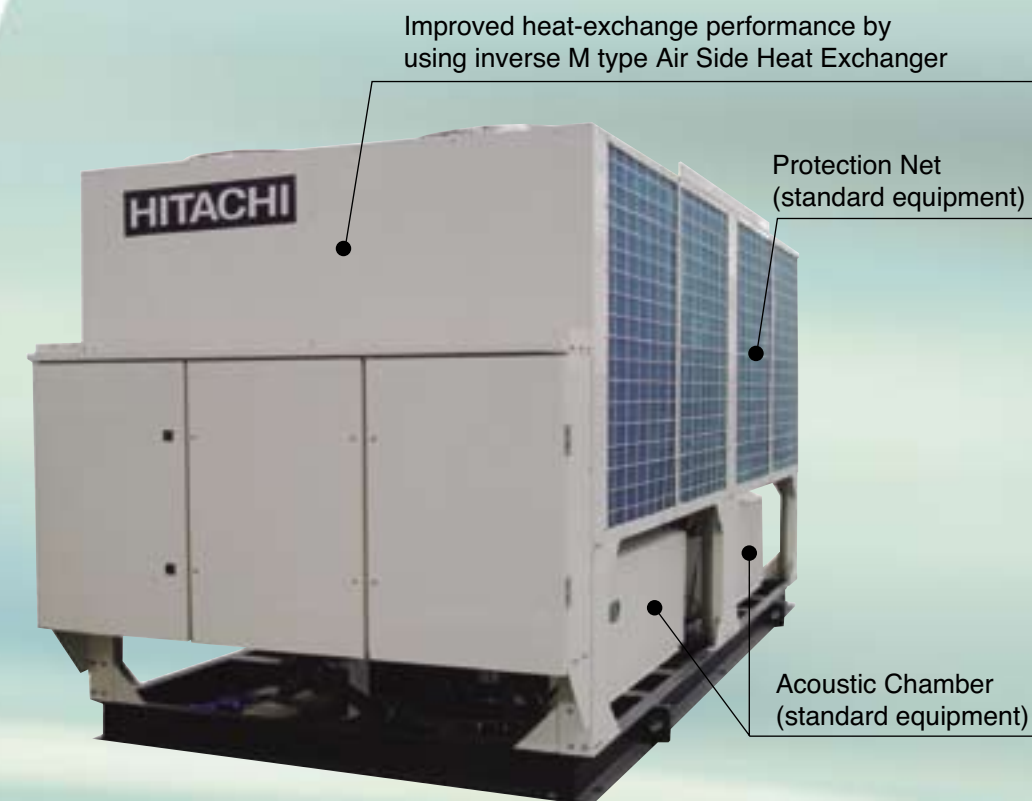
Enhanced Line-up ~up to 400 HP~

High-performance A-type Screw Compressor

Precise Capacity Control Technology

Excellent Control Function

Highly Reliable Shell and Tube Heat Exchanger



Product Series

RCUG-AHYZ1

Nominal Capacity Range (50Hz)

R407C

110 kW to 1,089 kW
31 USRT to 310 USRT
94,600 kcal/h to 936,540 kcal/h

RCU-AHYZ1

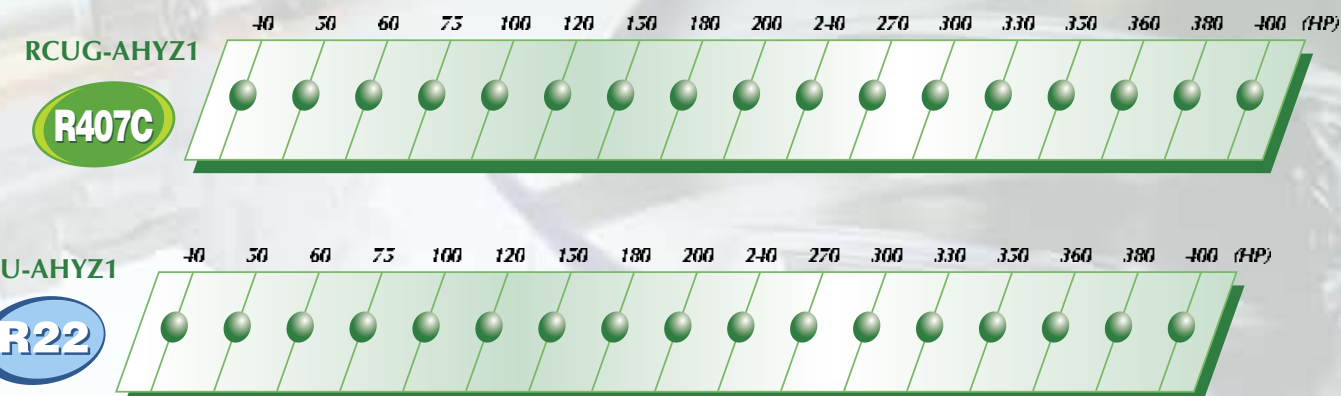
Nominal Capacity Range (50Hz)

R22

116 kW to 1,146 kW
33 USRT to 326 USRT
99,760 kcal/h to 985,560 kcal/h

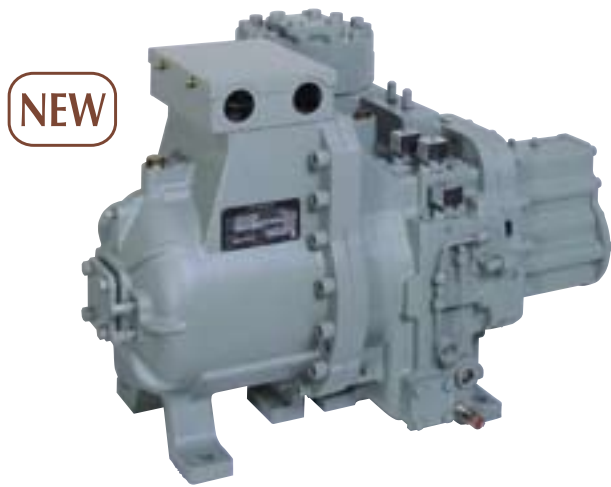
Wide Line-up

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



Technical Features

High-performance A-type Screw Compressor ~Newly Designed~



No outside pump is required due to the reliable differential-pressure oil-feeding system.

This oil-feeding system, which does not use any electrical mechanism, prevents the compressor from being damaged and maintains long-term stable operation.



Low Vibration Level

No exclusive vibration control equipment is necessary by using low-vibration screw compressor.

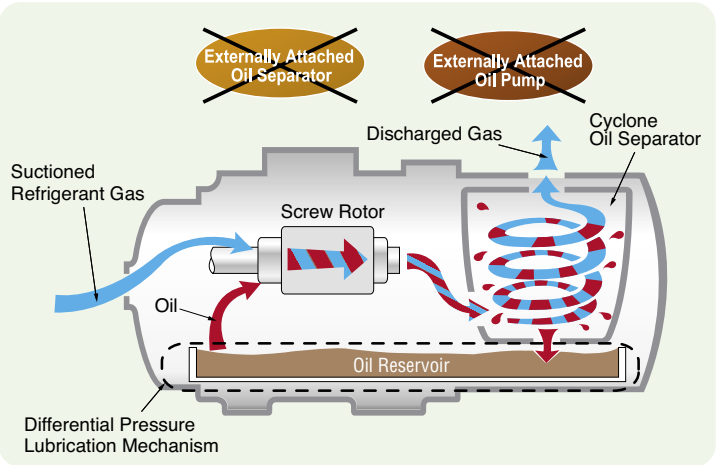
Built-in Cyclone Oil Separator

Low oil carrying-out is realized and reduction of heat transfer efficiency is minimized.

High Technology by Internal Manufacture

Because all manufacturing processes, from rotor manufacturing to unit assembly, are done internally, exceptional reliability is achieved.

☐ New Screw Compressor Operation Image



Simple Structure with a Small Number of Parts

Whereas the number of main parts for the casing, compression mechanism and capacity control mechanism of a reciprocating compressor is **268**, that of a screw compressor is only **27**, just one tenth of the number ! A structure with so few parts offers high reliability and easy maintenance.

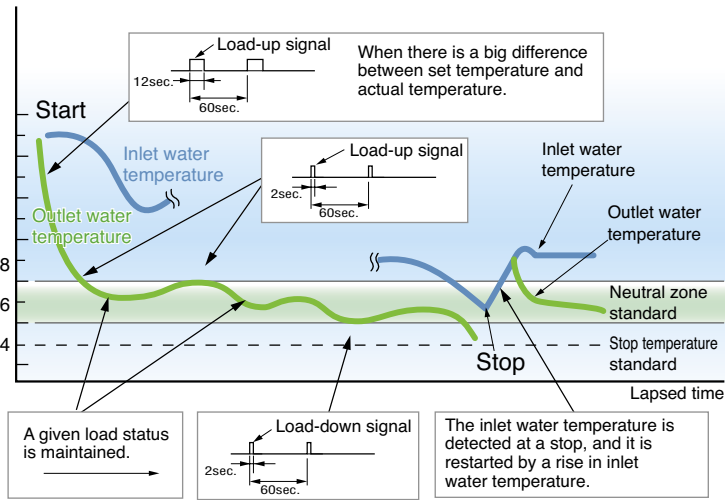
☐ Vibration Comparison

Type		Reciprocating	Screw
Comp. speed (rpm) 50/60Hz		1,430 / 1,720	2,880 / 3,470
Full amplitude	At leg of comp.	20-30	5-8
	At base frame	20	Less than 10
Vib. frequency	At leg of comp.	23.8 / 28.7	48.5 / 57.8
	At base frame	23.8 / 28.7	48 / 57.8
Acceleration energy		Screw: 1/5 of reciprocating type	

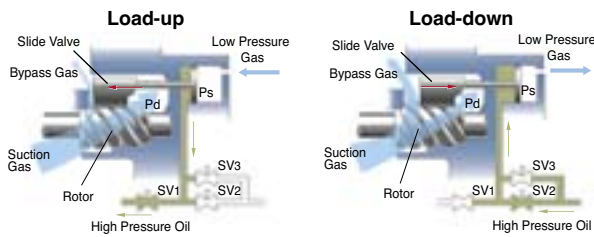
Precise Capacity Control Technology

Continuous Capacity Control

The temperature of the chilled water outlet can be kept at the set temperature 1C by continuous capacity control, so it is suitable for industrial use.



☐ Capacity Controller Structural Outline (HITACHI Patented System)



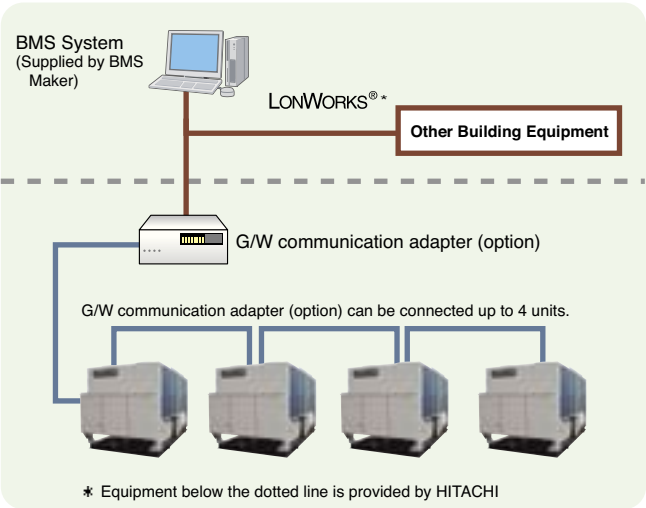
Pd: Discharge pressure, Ps: Suction pressure, SV1,2,3 : Solenoid valve : Valve open : Valve close

Excellent Control Function

Building Management System (BMS)

Hitachi uses Building Management System through LONWORKS®. For chiller air-conditioning, Hitachi provides its own central station system. No complicated work is necessary.

* : "LONWORKS®" is a trademark of Echelon Corporation registered in the United States and other countries.



☐ List of Functions

Remote Setting

- ON / OFF Operation
- Chilled Water Temperature (Inlet or Outlet)

Remote Monitor

- ON / OFF Status
- Setting Chilled Water Temperature (Inlet or Outlet)
- Current Water Temperature of Inlet and Outlet
- Alarm Code

* In addition, up to 8 units can be connected using the G/W communication adapter for the Hitachi Chiller Unit signal (RS485).

Highly Reliable Shell and Tube Heat Exchanger ~Newly Designed~

- Dry expansion cooler system
- Low environmental impact: refrigerant quantity reduced by 60% from the current unit
- Perfect matching with the chiller unit due to our own design
 - Downsized by redesigned heat-transfer tube
 - Improved efficiency by optimized refrigerant distribution

Model				RCUG40AHYZ1	RCUG50AHYZ1	RCUG60AHYZ1	RCUG75AHYZ1		RCUG100AHYZ1	RCUG120AHYZ1	RCUG150AHYZ1	RCUG180AHYZ1	RCUG200AHYZ1	RCUG240AHYZ1	
Power Source				Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz						Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz					
Nominal Cooling Capacity*1		kW		110	136	170	181		272	340	363	510	544	680	
		USRT		31	39	48	51		77	97	103	145	155	193	
		kcal/h		94,600	116,960	146,200	155,660		233,920	292,400	312,180	438,600	467,840	584,800	
Capacity Control				Continuous Capacity Control						Continuous Capacity Control					
			%	100—15, 0						100—15(7.5)*2, 0			100—15(5)*2, 0		100—15(7.5)*2, 0
Outer Dimensions	Height	mm		2,170	2,170	2,170	2,170		2,170	2,170	2,170	2,170	2,170	2,170	
	Width			1,940	1,940	1,940	1,940		1,940	1,940	1,940	1,940	1,940		
	Depth			2,390	2,390	2,390	2,390		4,490	4,490	4,490	6,590	6,590	9,080(min.)	
Net Weight		kg		1,790	1,830	1,870	1,890		3,210	3,280	3,320	4,865	4,900	2 x 3,280	
Refrigerant	Type		R407C						R407C						
	Flow Control		Thermal Expansion Valve						Thermal Expansion Valve						
	Number of Circuits		1						2		3		4		
Compressor	Type		Semi-Hermetic Screw Type						Semi-Hermetic Screw Type						
	Model		40ASCCW-Z	50ASCCW-Z	60ASCCW-Z	60ASCCW-Z		50ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z		
	Quantity		1						2			3		4	
Heat Exchanger	Fan Motor	Condenser		Cross Fin Type						Cross Fin Type					
		Condenser Fan		Direct Drive Propeller Fan						Direct Drive Propeller Fan					
		Power Input	kW	1.1	1.1	1.1	1.1		1.1	1.1	1.1	1.1	1.1	1.1	
		Quantity		4	4	4	4		8	8	8	12	12	2 x 8	
		Evaporator		Shell-and-Tube Type						Shell-and-Tube Type					
				Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve						Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve					
Shipping Dimensions	Height	mm	2,510	2,510	2,510	2,510		2,510	2,510	2,510	2,510	2,510	2,510		
	Width		2,190	2,190	2,190	2,190		2,190	2,190	2,190	2,190	2,190			
	Depth		2,600	2,600	2,600	2,600		4,700	4,700	4,700	6,800	6,800	2 x 4,700		
Shipping Weight		kg	2,000	2,040	2,080	2,100		3,610	3,680	3,720	5,500	5,535	2 x 3,680		
Piping Connections for Water Side Heat Exchanger			Inlet Outlet	With ϕ 90 Inner Diameter Companion Flange						With ϕ 142 Inner Diameter Companion Flange					
Connection Hole	Main Power (square orifice)	mm	233 x 140						233 x 140						2 x 233 x 140
	Circuit		3 x ϕ 48; 2 x ϕ 75						3 x ϕ 48; ϕ 64; ϕ 52; 2 x ϕ 75						6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75

Model			RCUG270AHYZ1	RCUG300AHYZ1	RCUG330AHYZ1	RCUG350AHYZ1		RCUG360AHYZ1	RCUG380AHYZ1	RCUG400AHYZ1
Power Source			Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz					Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz		
Nominal Cooling Capacity* ¹	kW		703	726	873	907		1,020	1,055	1,089
	USRT		200	206	248	258		290	300	310
	kcal/h		604,580	624,360	750,780	780,020		877,200	907,300	936,540
Capacity Control			Continuous Capacity Control					Continuous Capacity Control		
	%		100~15(7.5)* ² , 0		100~15(6)* ² , 0			100~15(7.5)* ² , 0		
Outer Dimensions	Height	mm	2,170	2,170	2,170	2,170		2,170	2,170	2,170
	Width		1,940	1,940	1,940	1,940		1,940	1,940	1,940
	Depth		9,080(min.)	9,080(min.)	11,180(min.)	11,180(min.)		13,280(min.)	13,280(min.)	13,280(min.)
Net Weight		kg	3,320 + 3,280	2 x 3,320	4,865 + 3,320	4,900 + 3,320		2 x 4,865	4,900 + 4,865	2 x 4,900
Refrigerant	Type		R407C					R407C		
	Flow Control		Thermal Expansion Valve					Thermal Expansion Valve		
	Number of Circuits		4		5			6		
Compressor	Type		Semi-Hermetic Screw Type					Semi-Hermetic Screw Type		
	Model		60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z		60ASCCW-Z	60ASCCW-Z	60ASCCW-Z
	Quantity		4		5			6		
Heat Exchanger	Condenser		Cross Fin Type					Cross Fin Type		
	Condenser Fan		Direct Drive Propeller Fan					Direct Drive Propeller Fan		
	Power Input	kW	1.1	1.1	1.1	1.1		1.1	1.1	1.1
	Quantity		8 + 8	2 x 8	12 + 8	12 + 8		2 x 12	12 + 12	2 x 12
	Evaporator		Shell-and-Tube Type					Shell-and-Tube Type		
Safety Devices			Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve					Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve		
Shipping Dimensions	Height	mm	2,510	2,510	2,510	2,510		2,510	2,510	2,510
	Width		2,190	2,190	2,190	2,190		2,190	2,190	2,190
	Depth		2 x 4,700	2 x 4,700	6,800 + 4,700	6,800 + 4,700		2 x 6,800	2 x 6,800	2 x 6,800
Shipping Weight		kg	3,720 + 3,680	2 x 3,720	5,500 + 3,720	5,535 + 3,720		2 x 5,500	5,535 + 5,500	2 x 5,535
Piping Connections for Water Side Heat Exchanger		Inlet Outlet	With ϕ 142 Inner Diameter Companion Flange					With ϕ 142 Inner Diameter Companion Flange		
Connection Hole	Main Power (square orifice)	mm	2 x 233 x 140					2 x 233 x 140		
	Circuit		6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75					6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75		

- NOTES:
1. The nominal cooling capacities are based on the following conditions. (*1)
Chilled Water Inlet / Outlet Temperature: 12°C / 7°C
Condenser Air Inlet Temperature: 35°C(DB)

2. The units greater than 240AHYZ1 including 240AHYZ1 consist of two modules and are separately shipped.
The common chilled water piping (Filed-Supplied) between each water cooler shall be directly connected at site.

3. Water Flow
1) RCUG240, 300, 360, 400AHYZ1
It is necessary to control the common water flow volume to each cooler.
2) RCUG270, 330, 350, 380AHYZ1
The chilled water flow rate is different between No.1 & No.2 units. It is necessary to control the water flow volume of each unit with adjusting valves (Filed-Supplied).

4. It is required to connect electrical control wires between No.1 & No.2 units for the unit greater than 240AHYZ1 including 240AHYZ1.

5. () marked with *2 is available by selection switch.

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

Model				RCU40AHYZ1	RCU50AHYZ1	RCU60AHYZ1	RCU75AHYZ1		RCU100AHYZ1	RCU120AHYZ1	RCU150AHYZ1	RCU180AHYZ1	RCU200AHYZ1	RCU240AHYZ1	
Power Source				Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz						Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz					
Nominal Cooling Capacity* ¹		kW	116	143	179	191		286	358	382	537	573	716		
		USRT	33	41	51	54		81	102	109	153	163	204		
		kcal/h	99,760	122,980	153,940	164,260		245,960	307,880	328,520	461,820	492,780	615,760		
Capacity Control			Continuous Capacity Control						Continuous Capacity Control						
		%	100—15, 0						100—15(7.5)* ² , 0			100—15(5)* ² , 0		100—15(7.5)* ² , 0	
Outer Dimensions	Height	mm	2,170	2,170	2,170	2,170		2,170	2,170	2,170	2,170	2,170	2,170		
	Width		1,940	1,940	1,940	1,940		1,940	1,940	1,940	1,940	1,940			
	Depth		2,390	2,390	2,390	2,390		4,490	4,490	4,490	6,590	6,590	9,080(min.)		
Net Weight		kg	1,790	1,830	1,870	1,890		3,210	3,280	3,320	4,865	4,900	2 x 3,280		
Refrigerant	Type		R22						R22						
	Flow Control		Thermal Expansion Valve						Thermal Expansion Valve						
	Number of Circuits		1						2			3		4	
Compressor	Type		Semi-Hermetic Screw Type						Semi-Hermetic Screw Type						
	Model		40ASCCW-Z	50ASCCW-Z	60ASCCW-Z	60ASCCW-Z		50ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z		
	Quantity		1						2			3		4	
Heat Exchanger	Fan Motor	Condenser		Cross Fin Type						Cross Fin Type					
		Condenser Fan		Direct Drive Propeller Fan						Direct Drive Propeller Fan					
		Power Input	kW	1.1	1.1	1.1	1.1		1.1	1.1	1.1	1.1	1.1	1.1	
		Quantity		4	4	4	4		8	8	8	12	12	2 x 8	
		Evaporator		Shell-and-Tube Type						Shell-and-Tube Type					
Safety Devices				Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve						Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve					
Shipping Dimensions	Height	mm	2,510	2,510	2,510	2,510		2,510	2,510	2,510	2,510	2,510	2,510		
	Width		2,190	2,190	2,190	2,190		2,190	2,190	2,190	2,190	2,190			
	Depth		2,600	2,600	2,600	2,600		4,700	4,700	4,700	6,800	6,800	2 x 4,700		
Shipping Weight		kg	2,000	2,040	2,080	2,100		3,610	3,680	3,720	5,500	5,535	2 x 3,680		
Piping Connections for Water Side Heat Exchanger		Inlet Outlet	With ϕ 90 Inner Diameter Companion Flange						With ϕ 142 Inner Diameter Companion Flange						
Connection Hole	Main Power (square orifice)	mm	233 x 140						233 x 140						2 x 233 x 140
	Circuit		3 x ϕ 48; 2 x ϕ 75						3 x ϕ 48; ϕ 64; ϕ 52; 2 x ϕ 75						6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75

Model			RCU270AHYZ1	RCU300AHYZ1	RCU330AHYZ1	RCU350AHYZ1		RCU360AHYZ1	RCU380AHYZ1	RCU400AHYZ1
Power Source			Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz					Main (AC 3 ϕ) 380, 415V / 50Hz, Control (AC 1 ϕ) 220, 240V / 50Hz		
Nominal Cooling Capacity* ¹	kW		740	764	919	955		1,074	1,110	1,146
	USRT		210	217	261	272		305	316	326
	kcal/h		636,400	657,040	790,340	821,300		923,640	954,600	985,560
Capacity Control			Continuous Capacity Control					Continuous Capacity Control		
	%		100〜15(7.5)* ² , 0		100〜15(6)* ² , 0			100〜15(7.5)* ² , 0		
Outer Dimensions	Height	mm	2,170	2,170	2,170	2,170		2,170	2,170	2,170
	Width		1,940	1,940	1,940	1,940		1,940	1,940	1,940
	Depth		9,080(min.)	9,080(min.)	11,180(min.)	11,180(min.)		13,280(min.)	13,280(min.)	13,280(min.)
Net Weight		kg	3,320 + 3,280	2 x 3,320	4,865 + 3,320	4,900 + 3,320		2 x 4,865	4,900 + 4,865	2 x 4,900
Refrigerant	Type		R22					R22		
	Flow Control		Thermal Expansion Valve					Thermal Expansion Valve		
	Number of Circuits		4		5			6		
Compressor	Type		Semi-Hermetic Screw Type					Semi-Hermetic Screw Type		
	Model		60ASCCW-Z	60ASCCW-Z	60ASCCW-Z	60ASCCW-Z		60ASCCW-Z	60ASCCW-Z	60ASCCW-Z
	Quantity		4		5			6		
Heat Exchanger	Condenser		Cross Fin Type					Cross Fin Type		
	Fan Motor		Direct Drive Propeller Fan					Direct Drive Propeller Fan		
	Condenser Fan		Direct Drive Propeller Fan					Direct Drive Propeller Fan		
	Power Input	kW	1.1	1.1	1.1	1.1		1.1	1.1	1.1
	Quantity		8 + 8	2 x 8	12 + 8	12 + 8		2 x 12	12 + 12	2 x 12
Evaporator			Shell-and-Tube Type					Shell-and-Tube Type		
Safety Devices			Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve					Overcurrent Relay for Compressor, Internal Thermostat for Compressor, Reverse Phase Protection Device for Compressor, Thermal Overcurrent Relay for Fan Motor, High-Pressure Switch, Low-Pressure Control, Suction Gas Temperature Control, Freeze Protection Thermistor Control, Oil Heater, Discharge Gas Thermistor, Fusible Plug, Fuse for Control Circuit and Pressure Relief Valve		
Shipping Dimensions	Height	mm	2,510	2,510	2,510	2,510		2,510	2,510	2,510
	Width		2,190	2,190	2,190	2,190		2,190	2,190	2,190
	Depth		2 x 4,700	2 x 4,700	6,800 + 4,700	6,800 + 4,700		2 x 6,800	2 x 6,800	2 x 6,800
Shipping Weight		kg	3,720 + 3,680	2 x 3,720	5,500 + 3,720	5,535 + 3,720		2 x 5,500	5,535 + 5,500	2 x 5,535
Piping Connections for Water Side Heat Exchanger		Inlet Outlet	With ϕ 142 Inner Diameter Companion Flange					With ϕ 142 Inner Diameter Companion Flange		
Connection Hole	Main Power (square orifice)	mm	2 x 233 x 140					2 x 233 x 140		
	Circuit		6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75					6 x ϕ 48; 2 x ϕ 64; 2 x ϕ 52; 4 x ϕ 75		

- NOTES:**
1. The nominal cooling capacities are based on the following conditions. (*1)
Chilled Water Inlet / Outlet Temperature: 12°C / 7°C
Condenser Air Inlet Temperature: 35°C(DB)

2. The units greater than 240AHYZ1 including 240AHYZ1 consist of two modules and are separately shipped.
The common chilled water piping (Filed-Supplied) between each water cooler shall be directly connected at site.

3. Water Flow
1) RCU240, 300, 360, 400AHYZ1
It is necessary to control the common water flow volume to each cooler.
2) RCU270, 330, 350, 380AHYZ1
The chilled water flow rate is different between No.1 & No.2 units. It is necessary to control the water flow volume of each unit with adjusting valves (Filed-Supplied).

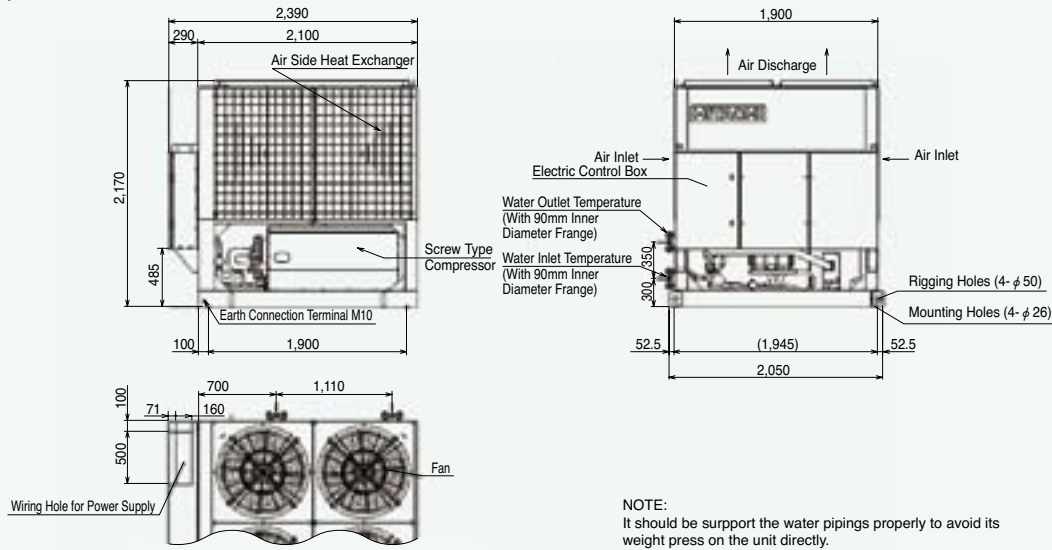
4. It is required to connect electrical control wires between No.1 & No.2 units for the unit greater than 240AHYZ1 including 240AHYZ1.

5. () marked with *2 is available by selection switch.

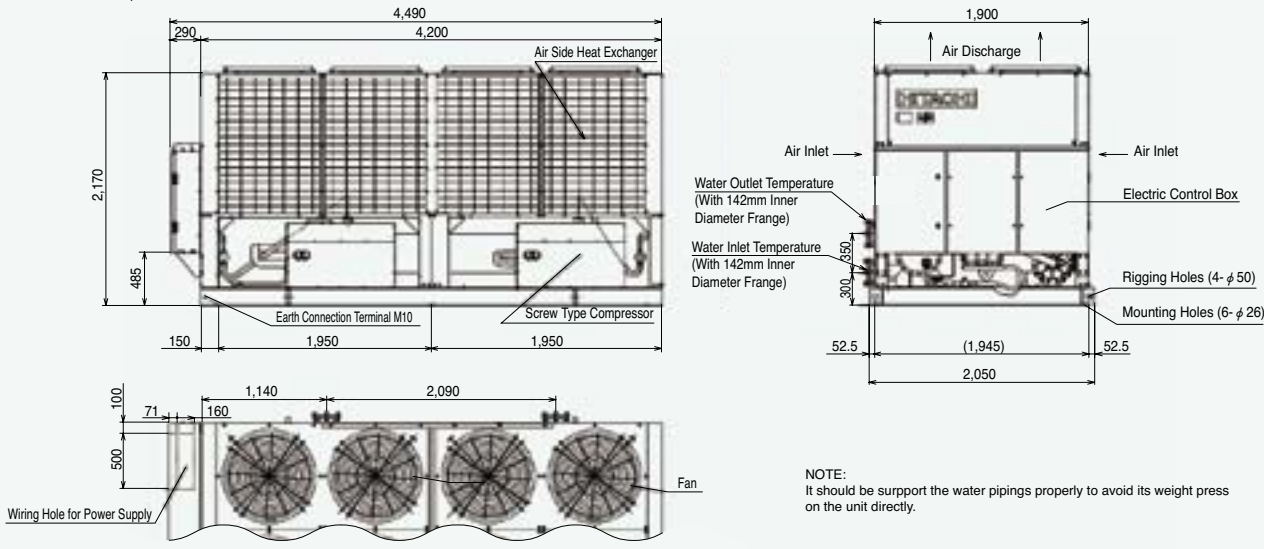
Item	Standard
Chilled Water Outlet Temperature	5〜15°C
Condenser Air Inlet Temperature (DB)	5〜43°C

Dimensional Data

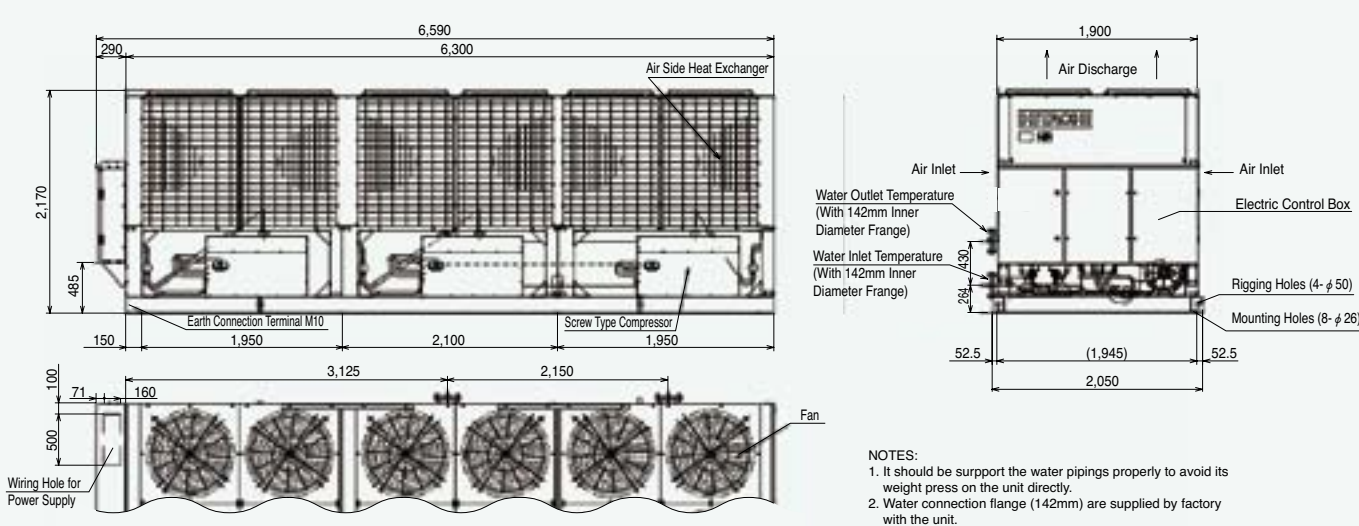
R407C RCUG40, 50, 60 and 75AHYZ1
R22 RCU40, 50, 60 and 75AHYZ1



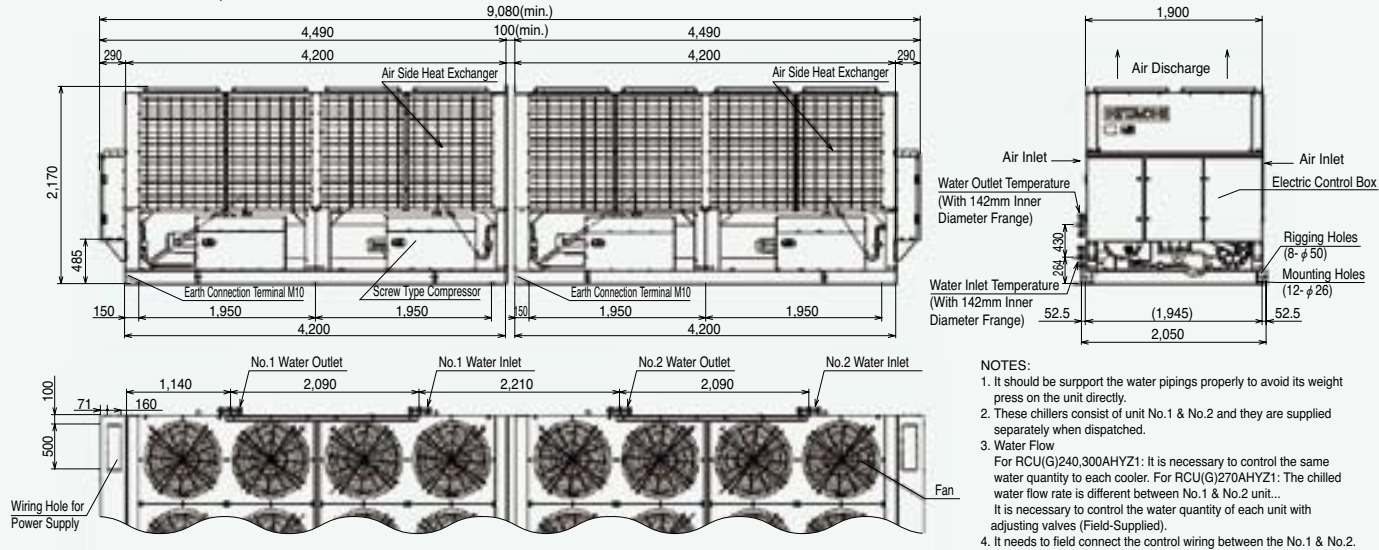
R407C RCUG100, 120 and 150AHYZ1
R22 RCU100, 120 and 150AHYZ1



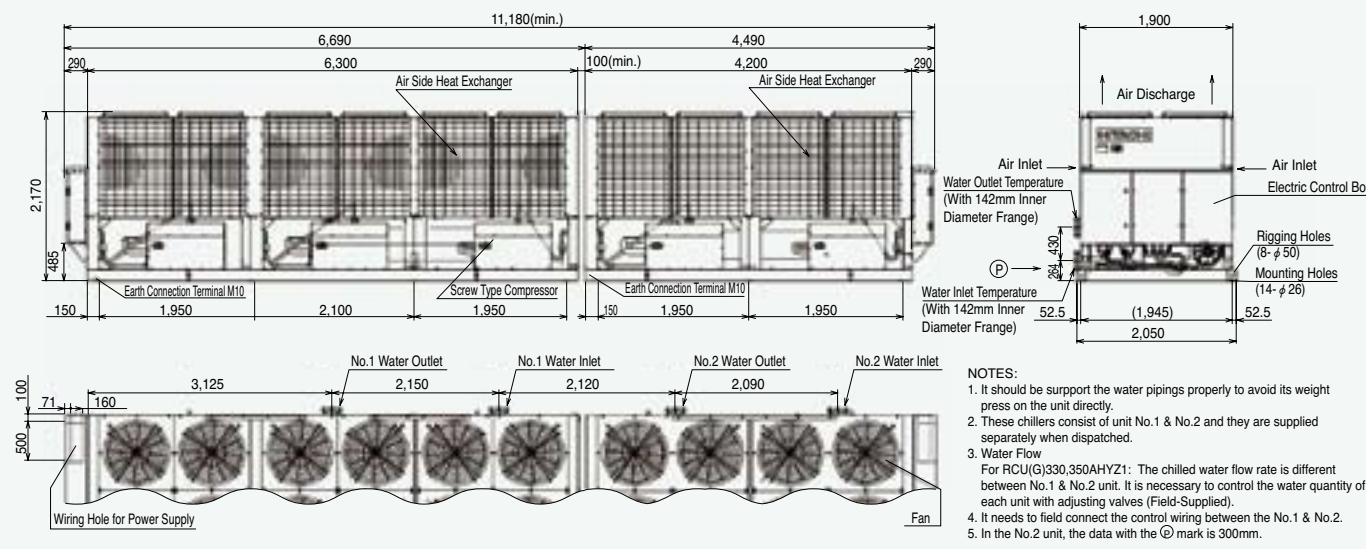
R407C RCUG180 and 200AHYZ1
R22 RCU180 and 200AHYZ1



R407C RCUG240, 270 and 300AHYZ1
R22 RCU240, 270 and 300AHYZ1



R407C RCUG330 and 350AHYZ1
R22 RCU330 and 350AHYZ1



R407C RCUG360, 380 and 400AHYZ1
R22 RCU360, 380 and 400AHYZ1

