HITACHI
Inspire the Next

R407C

TWIN SCREW COMPRESSOR TYPE
HITACHI WATER-COOLED CHILLERS WUZ

ICHIBAN AQUA

The High-efficiency water-cooled chiller WUZ series uses a new refrigerant, R407C. Reliability is higher due to a new screw compressor with a cyclone oil separator, Hitachi's unique technology. Many industrial applications are possible due to precise control of water temperature and wide range of operation.

ICHIBAN AQUA

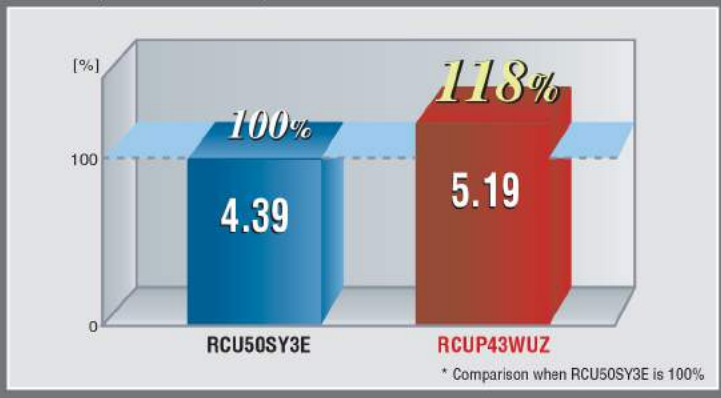
- Energy saving
- Environmentally considerate
- High efficiency
- High reliability
- Easy installation
- Many applications

ISO 9001 ISO 14001

Energy saving with high efficiency

COP is 5.19 on RCUP43WUZ of the new series, an increase of 18% from RCU50SY3E of the conventional series.

■ Example of COP comparison



Industry-leading partial load properties

High COP is possible even at minimum load.

■ Cooling operation

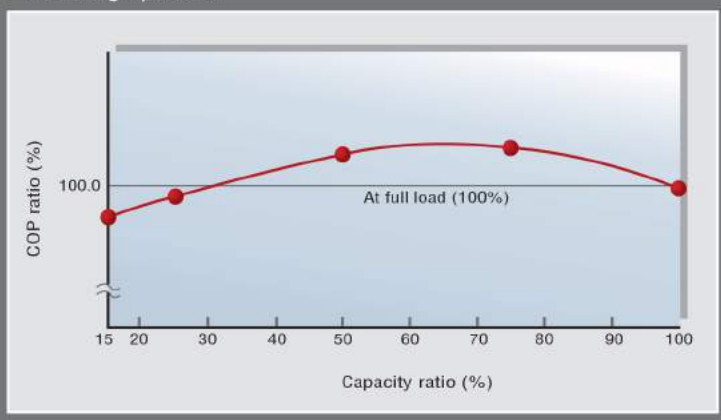


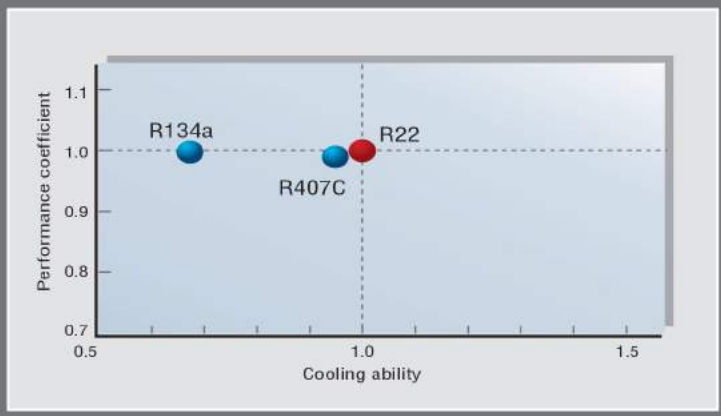
Plate heat exchangers

Hitachi uses less refrigerant to help protect the environment, such as by using plate heat exchangers.

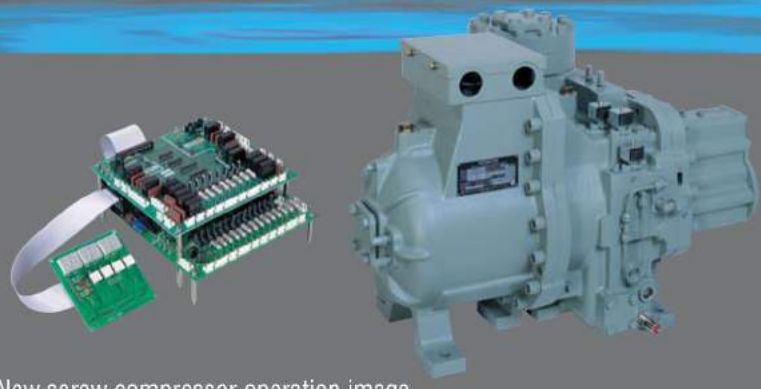
Hitachi uses R407C

As shown in the drawing , refrigerant R22 and R407C deliver similar cooling performance. The use of R407C makes the size more compact than R134a refrigerant.

■ Refrigerant and COP



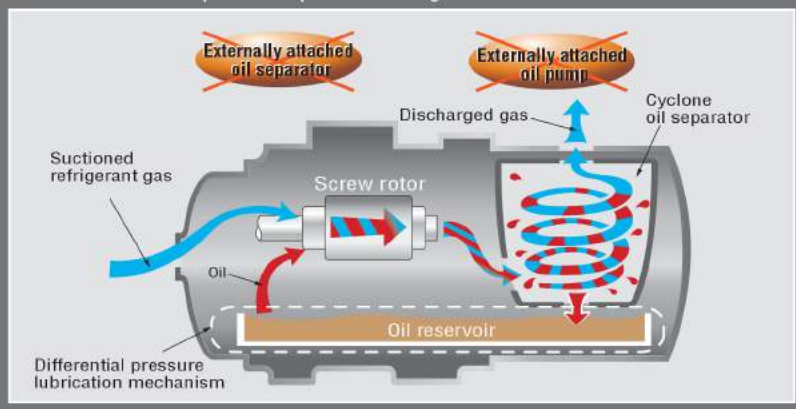
A simple structured high-performance new twin screw compressor



Hitachi's new screw compressor has the following features:

- Oil carry-out ratio is by less than 1% due to cyclone oil separator.
- Working range is extended by 15%.
- The number of parts is reduced to 1/10 of the reciprocating compressor.

■ New screw compressor operation image



Low vibration

No exclusive vibration control equipment is necessary due to the low-vibration screw compressor.

■ Vibration comparison

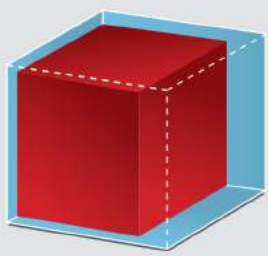
Type		Reciprocating	Screw
Comp. speed (rpm) 50/60Hz		1,430/1,720	2,880/3,470
Full amplitude	At leg of comp.	20-30	5-8
	At base frame	20	Less than 10
Vib. frequency	At leg of comp.	23.8/28.7	48.5/57.8
	At base frame	23.8/28.7	48/57.8
Acceleration energy		Screw: 1/5 of reciprocating type	

Compact and light

As shown in the drawing on the right, the volume, installation space and weight are all reduced, making installation easy.

■ New models fit in the same space as smaller conventional models

- Volume **21% decreased**
- Installation space **22% decreased**
- Net weight **21% decreased**



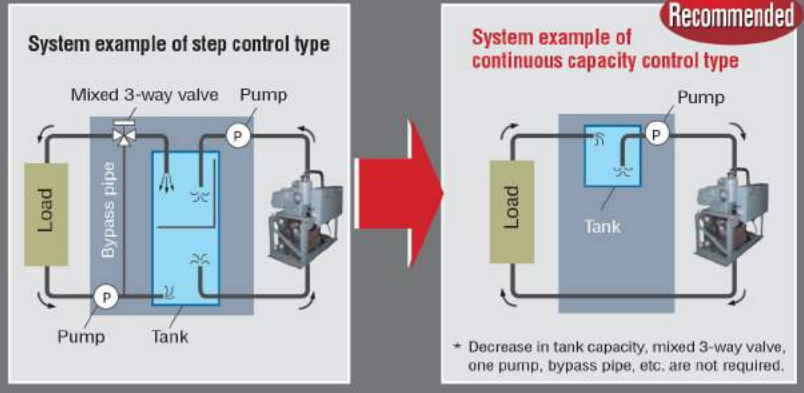
	Conventional model RCU60SY3E	New model RCUP43WUZ
Volume (m^3)	2.19	1.74
Installation space (m^2)	1.47	1.14
Net weight (kg)	970	765

Conventional model (HP)	Mountable new models (HP)
40	60
50	80
60	80
80	150
100	150
120	150
150	180
180	180
200	240

*Comparison with RCU-SY3E series

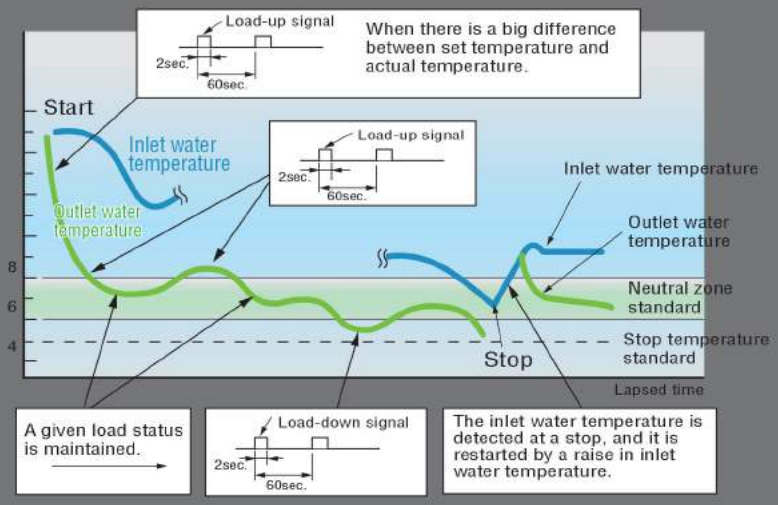
Decreased holding water quantity

As Hitachi's new type of water-cooled chiller holds less water, so fewer facilities are necessary.



Continuous capacity control

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



Many applications

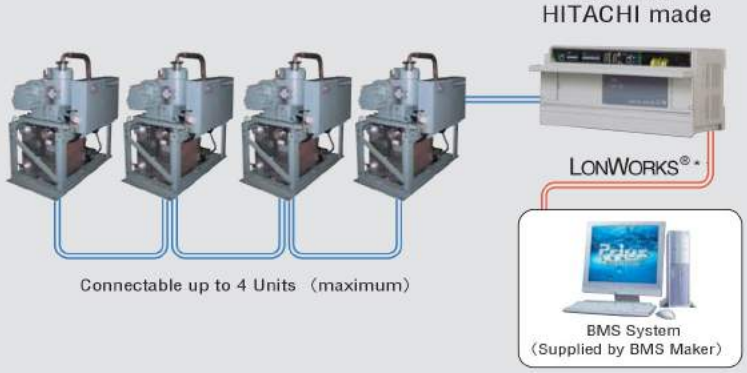
Hitachi uses Building Management System through LonWorks®. For chiller air-conditioning, Hitachi provides its own central station system.
Simply connect chiller and LonWorks® via a HARC70-CE. No complicated work is necessary.

CSC-5S

Hitachi's CSC-5S central station system newly developed for the Hitachi screw chiller provides monitoring as well as individual and quantity control. It can control up to 8 chillers and be installed according to the customer's air-conditioning environment needs. Unlike conventional machines, the functions can be checked from the control room via remote control, thus reducing the need to visit the machine room for manual checking.

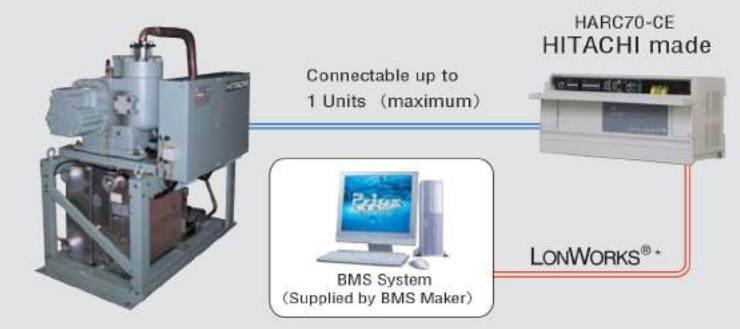
Building Management System

Standard Type



Remote Setting	Remote Monitor
■ ON / OFF operation	■ ON / OFF status
■ Chilled water temperature (inlet or outlet)	■ Setting chilled water temp.(inlet or outlet)
	■ Current water temp. of inlet and outlet
	■ Alarm code

Option Type



Remote Setting	Remote Monitor
■ ON / OFF operation	■ ON / OFF status
■ Chilled water temperature (inlet or outlet)	■ Setting chilled water temp.(inlet or outlet)
	■ Current water temp. of inlet and outlet
	■ Alarm code
	■ Operating status : Discharge gas pressure (each cycle) Suction gas pressure (each cycle) Discharge gas temperature (each cycle) Suction gas temperature (each cycle)

* "LonWorks" "LonMark" are trademarks of Echelon Corporation registered in the United States and other countries.

☐ GENERAL DATA

Model Continuous Control Type		RCUP34WUZ	RCUP43WUZ	RCUP51WUZ	RCUP67WUZ	RCUP85WUZ	RCUP101WUZ	RCUP128WUZ	RCUP151WUZ	RCUP171WUZ	RCUP202WUZ
Nominal Cooling Capacity 50Hz	kW	118	150	180	236	300	355	450	530	600	710
	kcal/h	101,480	129,000	154,800	202,960	258,000	305,300	387,000	455,800	516,000	610,600
	USRT	33.6	42.7	51.2	67.1	85.3	101.0	128.0	150.7	170.6	201.9
Nominal Cooling Capacity 60Hz	kW	132	170	200	265	335	400	510	600	670	800
	kcal/h	113,520	146,200	172,000	227,900	288,100	344,000	438,600	516,000	576,200	688,000
	USRT	37.5	48.3	56.9	75.4	95.3	113.8	145.0	170.6	190.5	227.5
Capacity Control											
Step Control Type	%	100, 75, 50, 0				100, 75, 50, 25, 0			100, 66, 33, 17, 0		
Continuous Control Type	%	100~15, 0									
Outer Dimension											
Height	mm	1,524	1,524	1,524	1,524	1,672	1,672	1,672	1,646	1,646	1,646
Width	mm	1,225	1,225	1,225	1,400	1,260	1,260	1,260	1,207	1,300	1,300
Depth	mm	934	934	934	934	1,661	1,661	1,661	2,466	2,466	2,466
Net Weight	Kg	750	765	830	950	1,550	1,650	1,750	2,470	2,550	2,670
Refrigerant		R407C									
Flow Control		Electronic Expansion Valve									
Number of Circuits		1				2			3		
Compreesor Type		Semi-Hermetic Screw Type									
Model											
Step Control Type		30ASCP-H	40ASCP-H	50ASCP-H	60ASCP-H	40ASCP-H	50ASCP-H	60ASCP-H	50ASCP-H	50ASCP-H	60ASCP-H
Continuous Control Type		30ASCP-Z	40ASCP-Z	50ASCP-Z	60ASCP-Z	40ASCP-Z	50ASCP-Z	60ASCP-Z	50ASCP-Z	50ASCP-Z	60ASCP-Z
Quantity		1				2			3		
Condenser		Plate Type									
Water Cooler		Plate Type									
Safety Devices		Thermal Overcurrent Relay for Compressor (R,T Phase), High-Pressure Switch, Low-Pressure Control, Oil Heater, Internal Thermostat for Compressor, Fusible Plug, Freeze Protection Device, Reverse Phase Protection Device, Operation Hour-Meter									
Piping Connections for Condencer		Victaulic Type									
Inlet		3B	3B	3B	3B	3B	3B	3B	3B × 3	3B × 3	3B × 3
Outlet		3B	3B	3B	3B	3B	3B	3B	3B × 3	3B × 3	3B × 3
Piping Connections for Water Cooler		Victaulic Type									
Inlet		3B	3B	3B	3B	3B	3B	3B	3B × 3	3B × 3	3B × 3
Outlet		3B	3B	3B	3B	3B	3B	3B	3B × 3	3B × 3	3B × 3

NOTE :

1. The nominal cooling capacities are based on the following conditions.
   Temperature Conditions
   Chilled Water Inlet Temperature : 12°C Condenser Water Inlet Temperature : 30°C
   Chilled Water Outlet Temperature : 7°C Condenser Water Outlet Temperature : 35°C

2. Applicable Power Supplies
   Main Power Source (3φ) : 220V 60Hz, 380V 50Hz, 415V 50Hz
   Control (1φ) : 220V 60Hz, 220V 50Hz, 240V 50Hz

3. Working Range
   Condenser Water Outlet Temperature : 22°C to 37°C
   Condenser Water Temperature Difference : 3.5°C to 10°C at 50Hz, 4.2°C to 10°C at 60Hz
   Chilled Water Outlet Temperature : 5°C to 20°C
   Chilled Water Temperature Difference : 2.5°C to 10°C at 50Hz, 3.0°C to 10°C at 60Hz

4. The common chilled water piping (filed-supplied) between each water cooler shall be connected directly at site. The water coolers in the same unit shall be connected to the same common piping.

5. Provide a 20 mesh water strainer at the chilled and condenser water inlet. The 20 mesh strainer is available by Hitachi as an optional accessory.

6. Support the water pipes with stay not to give the weight of water pipes directly to the unit.

7. Specifications in the above table are subject to change without notice in order that Hitachi may bring the latest innovations their customers.

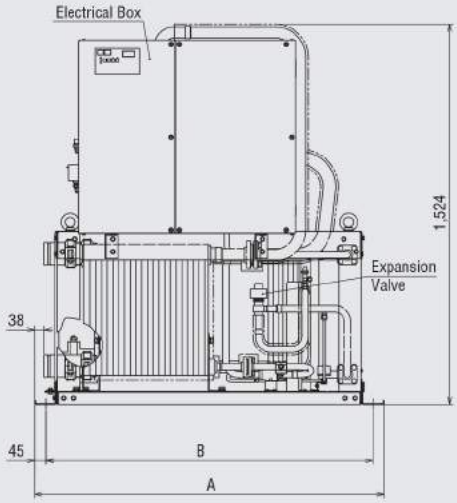
☐ Options

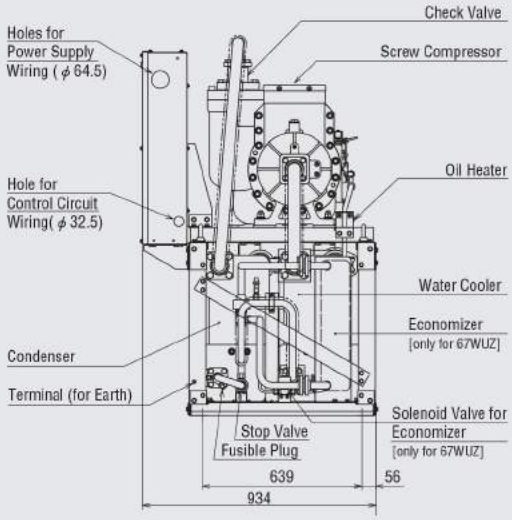
- Water Strainer
- HARC70-CE
- CSC-5S
- Pressure Gauge for Low and High Pressure

☐ DIMENSIONAL DATA

■ RCUP34WUZ, 43WUZ, 51WUZ and 67WUZ

Units : mm



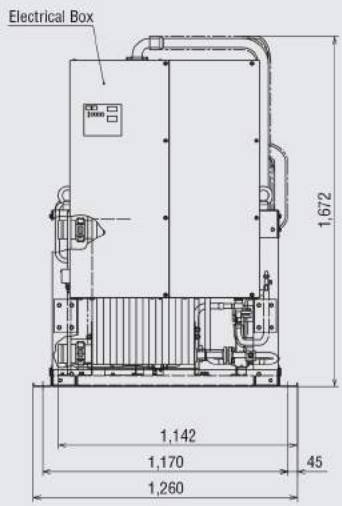


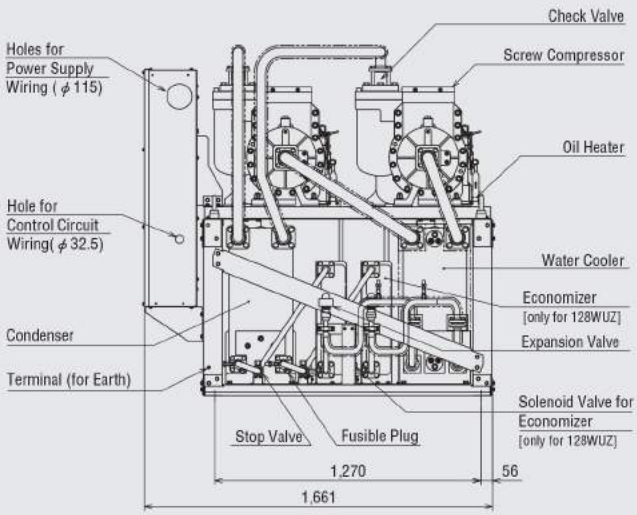
Dimensions table

Model \ Dimen.	A	B
34WUZ	1,225	1,135
43WUZ	1,225	1,135
51WUZ	1,225	1,135
67WUZ	1,400	1,310

■ RCUP85WUZ, 101WUZ and 128WUZ

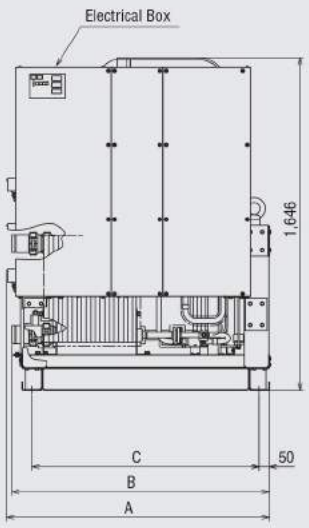
Units : mm

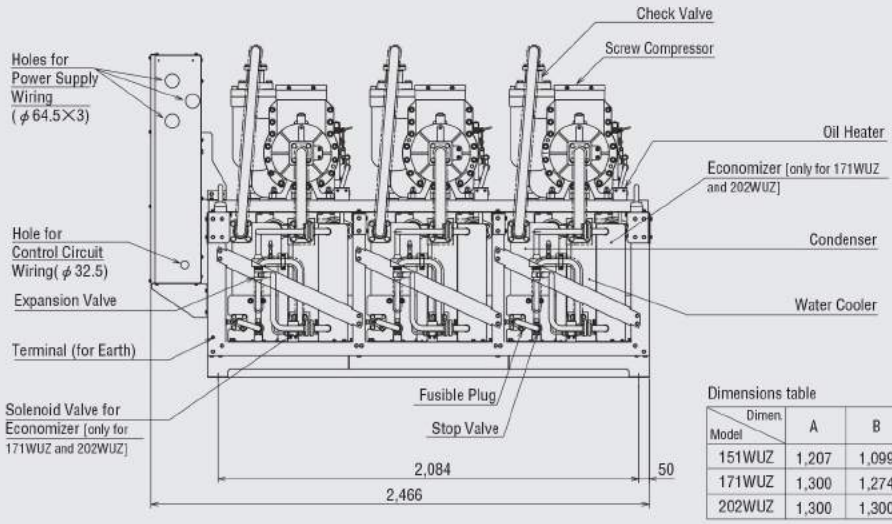




■ RCUP151WUZ, 171WUZ and 202WUZ

Units : mm





Dimensions table

Model \ Dimen.	A	B	C
151WUZ	1,207	1,099	949
171WUZ	1,300	1,274	1,124
202WUZ	1,300	1,300	1,124

HITACHI

Hitachi Appliances, Inc.

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

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