

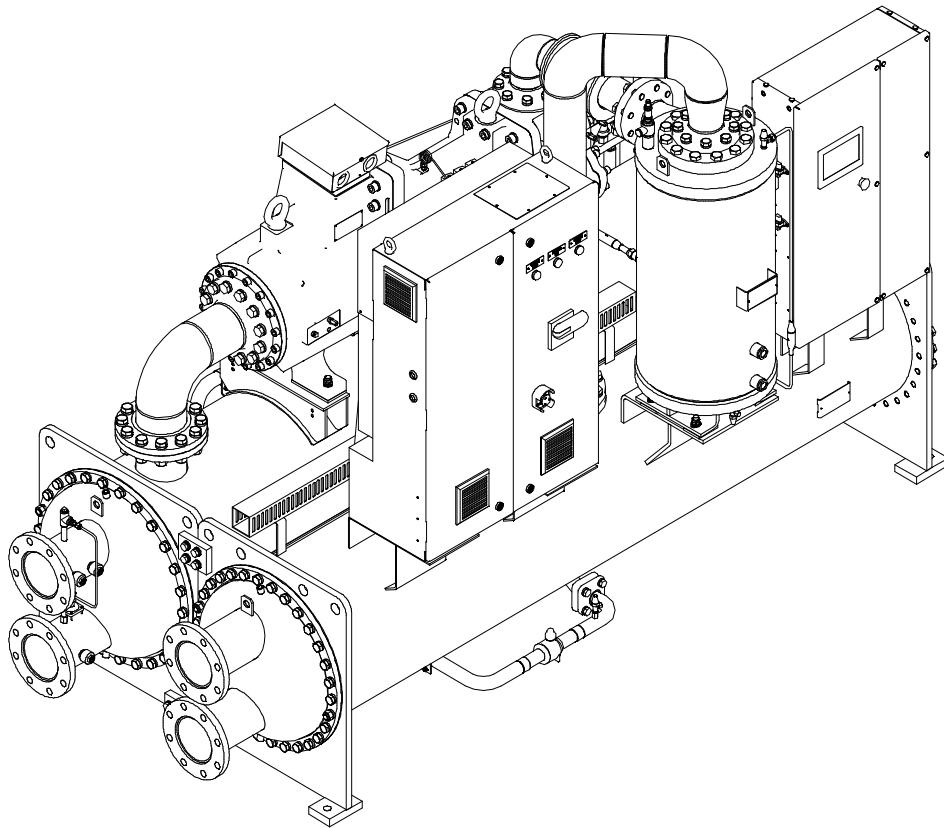
HITACHI

Installation Manual

Model

RCUF155WVY(-S)	RCUF210WVY(-S)
RCUF260WVY(-S)	RCUF310WVY(-S)
RCUF365WVY(-S)	RCUF420WVY(-S)
RCUF470WVY(-S)	RCUF520WVY(-S)

Hitachi Water-Cooled Chillers Unit -Screw Type-



Note:

Before installation of this water chilling unit, please read this manual carefully, and maintain it properly for future reference.

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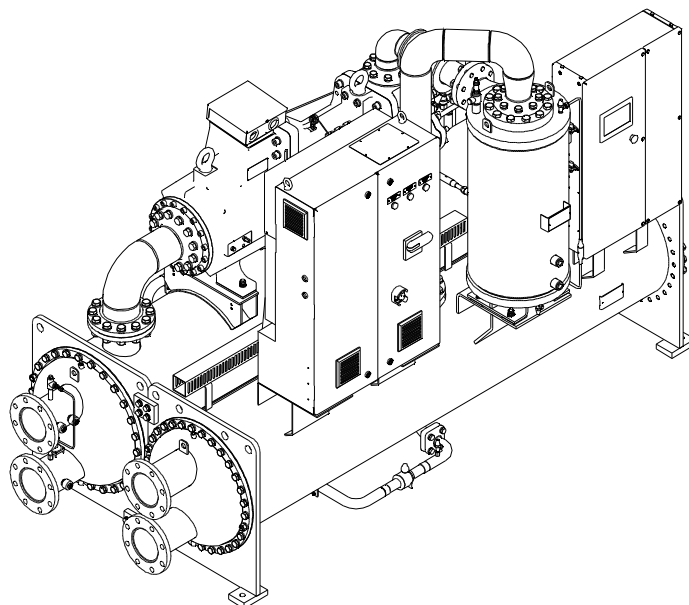
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Hitachi water-cooled screw-type water chilling unit

Refrigerant: R134a **Installation Manual**

[Continuous control type]

Capacity control mode	Model			
Continuous control type	RCUF155WVY(-S)	RCUF210WVY(-S)	RCUF260WVY(-S)	RCUF310WVY(-S)
	RCUF365WVY(-S)	RCUF420WVY(-S)	RCUF470WVY(-S)	RCUF520WVY(-S)



Note: Please hand over this book to the personnel who carry out the following operations, and ultimately be kept by the customer.

(Handling and installation)→(Piping)→(Wiring)→(Test run)→(Customer)

1. Foreword

- This machine is suitable for domestic ordinary air conditioners and general industrial application.
- Cold water must not be consumed directly or used for frozen foods. In addition, when used in the industry, it shall not be used as a standard in certain occasions according to the relevant legal provisions. For more information, please contact the persons designated by the dealer or the manufacturer.
- If you want to choose this product in high altitude area, please consult the contact window designated by distributor or manufacturer first.
- The selected place shall have good ventilation and low temperature, with the room temperature between 10 and 40°C. In addition, high humidity will also become the cause of electrical failure and machine corrosion, so pay attention to it. The ambient allowable humidity: maximum 95% RH, 10 - 40°C.
- Avoid installation in places with corrosive, flammable, or explosive gases in the air.
- This machine shall not be installed at the following locations. Otherwise, dust, gas and oil mist may be accumulated around the machine, resulting in fire hazard, or machine deformation, corrosion and damage.

○ Places with direct sunlight, oil (including motor oil), fog, vapor and dust.

○ Places with hot springs and sulfide gas.

- This machine shall not be installed at the following locations. Otherwise, it may cause corrosion to the machine.
 - Places with a lot of salt, such as a coastal zone.
 - Acidic or alkaline environment
- Pay attention to the failure of the chiller when using medical equipment that generates electromagnetic waves.
 - In order to prevent the influence of electromagnetic wave transmission in the air, the machine generating electromagnetic waves and the radio are required to be far away from the chiller for more than 3m.

2. Safety Precautions

- Before use, please read the Safety Precautions and use it properly.
- This manual use "⚠ Warning" and "⚠ Note" to distinguish safety precautions. The "⚠ Warning" column provides in details the wrong operation that may cause death or serious injury and the matters recorded in the "⚠ Note" column may also cause serious consequences.
Both of these records the important content related to security and should be fully complied.
- Carry out test run after installation; confirm whether there is any abnormality. Meanwhile, refer to the instructions to introduce the usage and maintenance methods to the customer. In addition, the installation instructions and operation instructions shall be kept by the customer.

[Meanings of symbols]

⚠ Warning: Indicate that the wrong operation may result in a user's death or serious injury.

⚠ Note: Indicate that the wrong operation will cause the personal injury or property damage.

⊘: Indicate the prohibit matter

⚠: Indicate the mandatory matter, a non-specific general user behavior.

⚠: Indicate the mandatory matter, the instruction such as the ground wire must be connected.

—Installation engineering—

 Warning	Please install according to the installation instructions. In case of any failure to be in accordance with the installation instructions or missing of correct steps, leakage, electric shock, fire hazard, and the dumping of water chiller may occur, and thus injuries are possible to occur.	
	This product must be installed in a position that can fully bear the weight of the product. Inadequate strength of installation position or improper installation may lead to the upside down of the chiller, thus resulting in injury accidents.	
	This product shall not be installed in locations where it is possible to have combustible gases generated or flowed inside. Otherwise, fire or fire accidents may occur.	
	Do not stand on the chiller or place any goods on the chiller. Otherwise, the injuries may be caused by falling, and the chiller may be damaged.	
	Carefully check to avoid any refrigerant leakage. Although the machine adopts the non - flammable, non-toxic, odorless safe refrigerants (Fluorocarbon), in case of fluorocarbon leakage and exposure to the fire source, toxic gases will be produced. In addition, because the proportion of fluorocarbon is greater than that of the air, it will lead to anoxia when gathered near the ground.	

 Note	The drainage ditch is properly set up to ensure smooth drainage. Otherwise, it may soak into the house and damp the indoor items.	
	During actual installation, as the unit is affected by the surrounding reflection or the operating condition of the unit is different from the national standard of the noise test, appropriate measures shall be taken to reduce the noise according to the needs.	

—Electrical engineering—

 Warning	Please entrust a company with appropriate qualifications for installation. In case of any failure to follow the correct steps, electric shock or fire accidents may occur.	
	Operate in accordance with the "Electrical Equipment Related Technical Specifications", "Internal Wiring Regulations" and installation instructions, and special circuits must be used. In case of failure to follow the installation instructions, electric shock or fire accidents may be caused due to insufficient power supply or inappropriate installation.	
	Please select the cable and the capacity of the electrical appliance according to the maximum current of the unit. Wrong selection may cause electric shock or fire accidents.	
	Fix the wiring terminals with correct torque. When the terminal is not completely fastened, it may cause the over-heat, fire or electric shock accidents on the connection part of the terminal.	

	● Please completely fix the cable to prevent any external force imposed on the terminal connection part. It may cause over-heat or fire if not completely fixed.	!
	● Accidents such as electric shock may happen without installation of ground lines. Do not connect ground line to the ground lines of gas piping, tap water pipes, lightning rods and telephones. An electric shock may occur if the connection is not in place.	!
	● The leakage circuit breaker is required to be installed. Relevant regulations (specify the electrical equipment related technical standards) require the installation of leakage current circuit breakers. Otherwise, the conductive connection with the earth may occur, causing an electric shock or a fire accident.	!
	● When it is necessary to open the protective cover during the electrical wiring operation or spot check, the main switch must be turned off. Otherwise, there may be an electric shock accident.	!
	● During the field wiring, the rats and other small animals shall be prevented from damaging the wiring. Otherwise, fire accidents may occur.	!

—Piping engineering—

 Note	● Make the necessary marking of the valve device in accordance with this standard and operation instruction. An operation error may result in a breakdown of the valve device.	!
	● When installation occurs in the places where refrigerant gas may be trapped, the exhaust pipe shall be installed on the safety valve according to the relevant regulations. Otherwise, it may lead to anoxia.	!

The unit can be effectively operated and facilitate the maintenance and check only after correct installation. By following above steps, possible failures that may be caused during installation can be prevented.

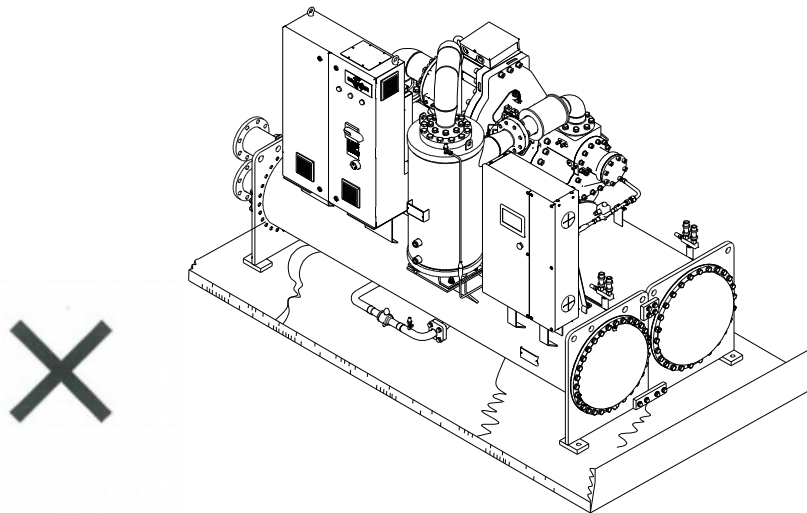
☐ is used for ticking. Please tick ☐ for the items that have been checked.

3. Handling and Installation

[Installation site]

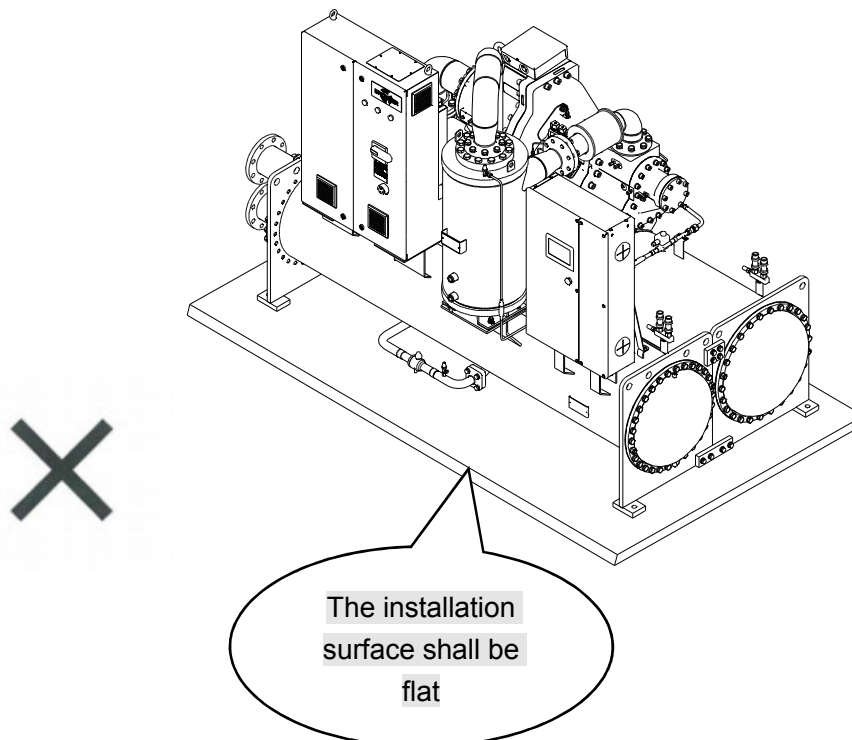
□1) Is the installation surface of the water chiller firm?

It is easy to produce noise and vibration when the mounting surface is not firm. For installation on the roof, requirements for basic strength, vibration resistance and the ground structure are even higher than that for ground installation. Therefore, it is necessary to analyze with the contractor whether it is necessary to strengthen the ground strength and whether or not to install vibration proof brackets, etc.

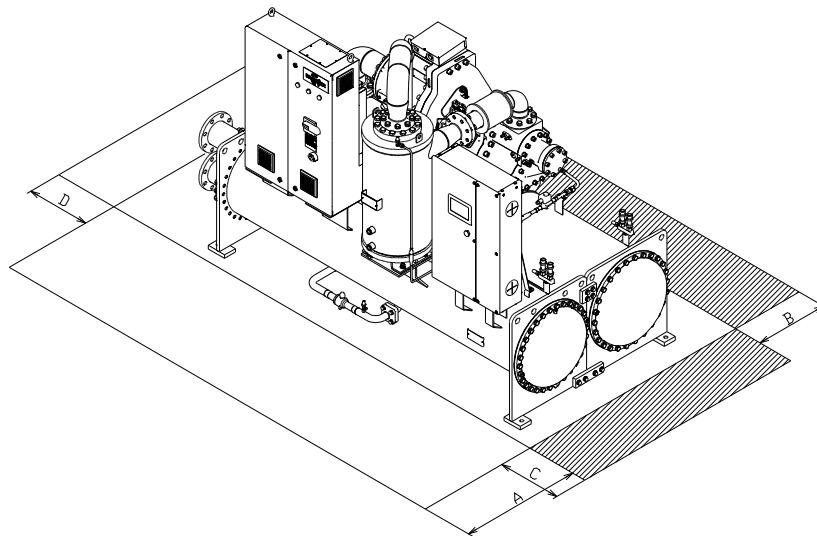


□2) Is the installation surface flat?

Noise or vibration is easily produced by the uneven installation surface.



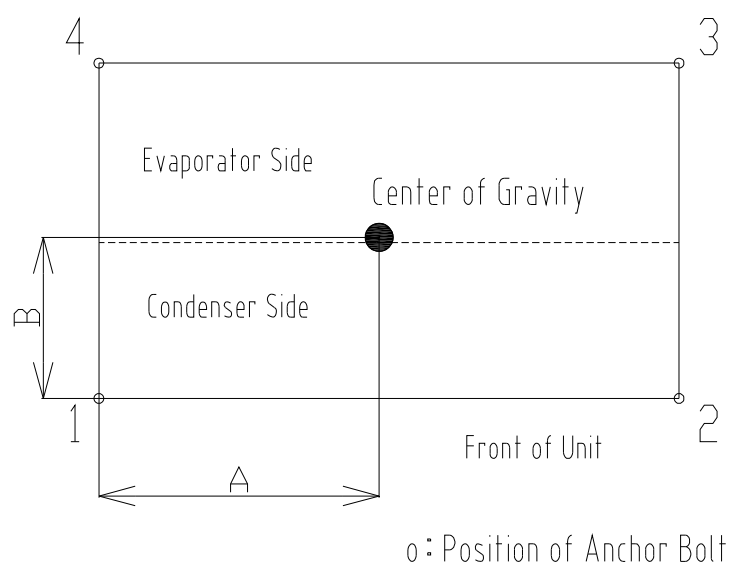
□3) Is there enough room between the water chiller and the wall surface or the screen?
[Maintenance space]



Direction	Recommended operating space	
A	≥1200	Front side of unit
B	≥600	Rear side of unit
C	≥1200	The other side of the water pipe interface of the unit
D	≥1200	Water pipe interface side of the unit

1. The installation and maintenance space of the unit shall be inquired according to the above table.
2. The installation of the unit is to ensure that there is sufficient space for inspection, commissioning and maintenance, as shown in the figure.
3. It shows that the front side of the unit is the operation display screen of the electric control box.
4. The above chart parameters are based on the standard configuration unit, and for the installation and maintenance space of the special design unit, please contact the local sales offices.

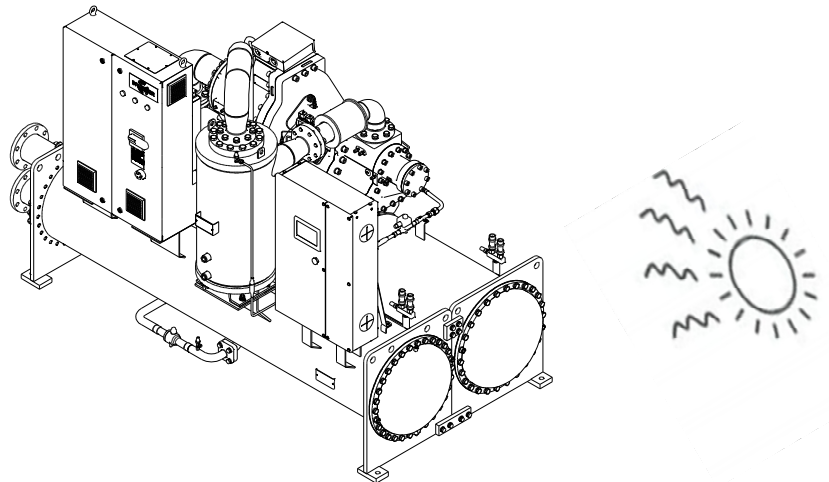
[Distribution of Center of Gravity of the Unit]



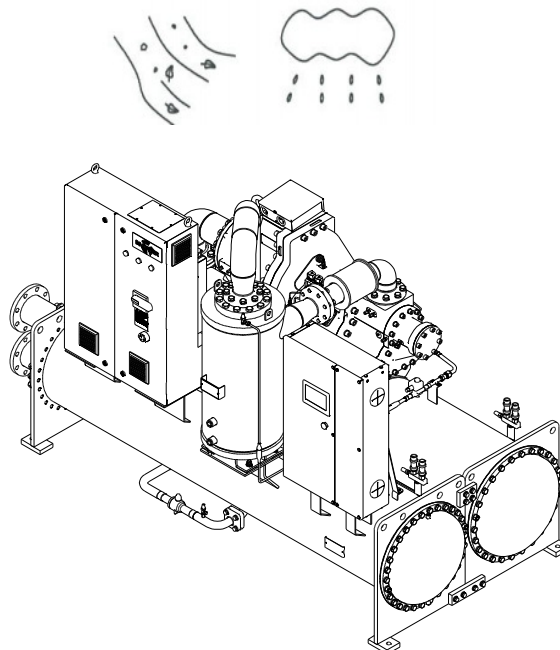
Distribution of Center of Gravity, Location of Center of Gravity and Operating Weight

Model	Operating Weight(kg)	Weight Distribution (kg)				Center of Gravity (mm)	
		Bearing Point				Location	
		1	2	3	4	A	B
RCUF155WVY(-S)	4281	946	915	1278	1142	1369	658
RCUF210WVY(-S)	4738	1022	991	1439	1286	1367	669
RCUF260WVY(-S)	4948	1054	1024	1517	1353	1365	674
RCUF310WVY(-S)	7463	1631	1634	2099	2099	2062	748
RCUF365WVY(-S)	7836	1691	1695	2189	2261	2081	755
RCUF420WVY(-S)	8209	1747	1750	2356	2356	2062	761
RCUF470WVY(-S)	8536	1809	1812	2435	2480	2073	764
RCUF520WVY(-S)	8863	1878	1882	2552	2552	2062	765

□4) Is it affected by radiant heat from direct sunlight or other heat sources such as boilers?



□5) Please install the water chiller indoors. This product is an indoor installation product and shall avoid wind and rain. If it is installed in a windy and rainy place, the machine cannot startup when the external temperature drops.



□6) Please pay attention that in the installation site: (Please avoid locations described as not suitable for installation in the preface.)

1 This product shall not be used in the combustible environment.

2 Although this water chiller adopts the non-combustible, non-toxic and odorless safe refrigerant (R134a), in case of leakage, the refrigerant (R134a) will produce toxic gas when it contacts with the fire source. In addition, the proportion of refrigerant (R134a) is greater than that of air. In case of leakage and stay near the ground, it may lead to anoxia. Therefore, when the refrigerant (R134a) leaks, or the eyes or throat feel the irritation, stop running immediately, and extinguish the fire source (close the stove, etc.), take full ventilation, and contact the dealer.

[When handling]

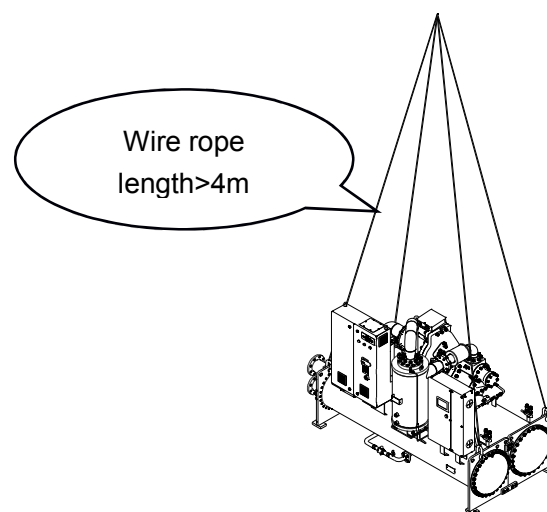
□1) When lifting the water chillers by wire rope, please hoist the whole unit with the steel rope set on the top.

Please prepare 4 wire ropes with the length no less than that specified in the Figure below.

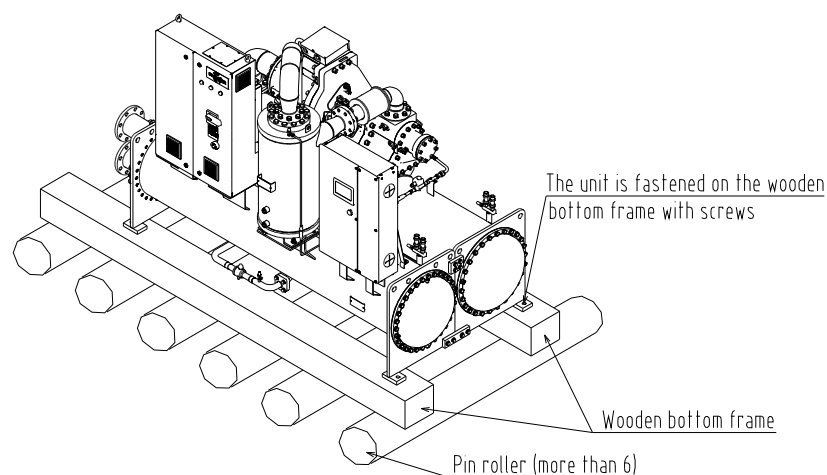
The angle between the water chiller and the steel rope shall be more than 60°.

When lifting up, do not stand below the unit to prevent accidents.

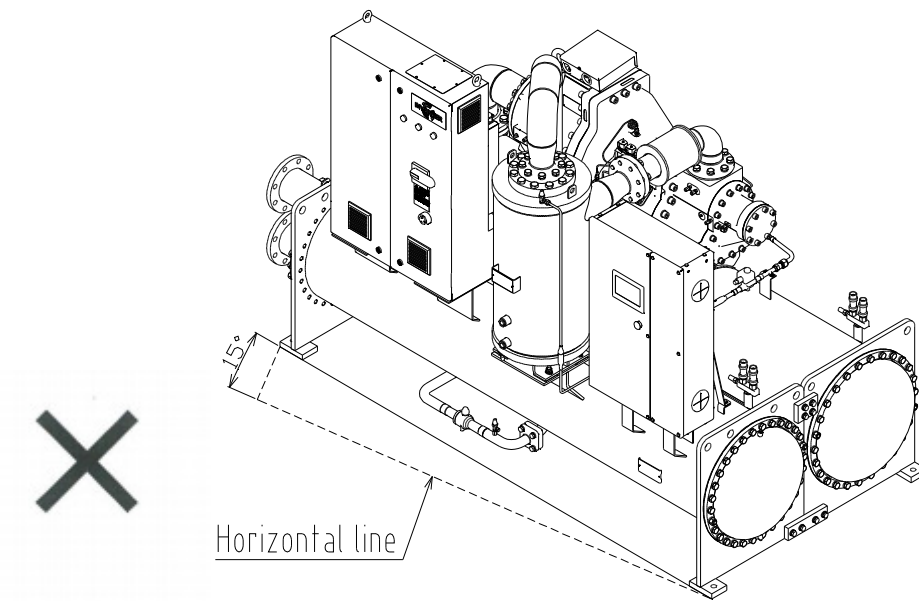
Cloth is added between the unit and the wire rope to prevent the unit from being damaged.



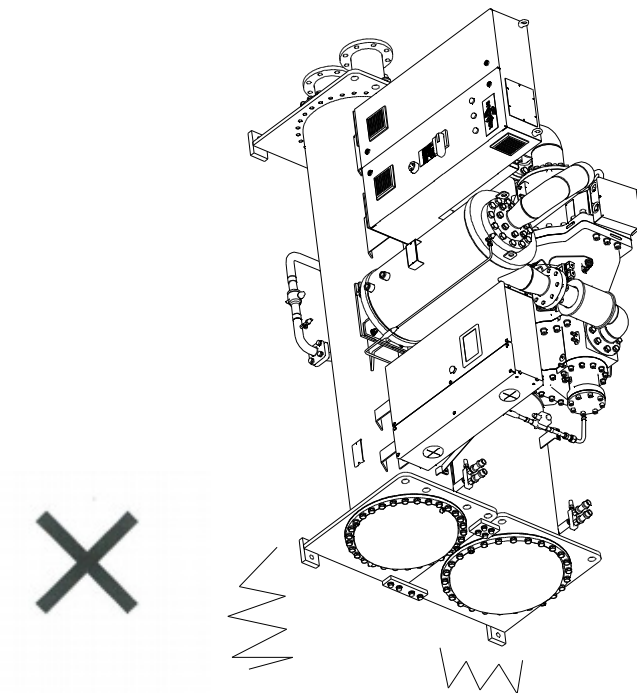
□2) More than 6 rollers must be used when moving with rollers.



- 3) The tilting of the water chiller shall not exceed 15°.



- 4) Do not drop or strike the water chiller.



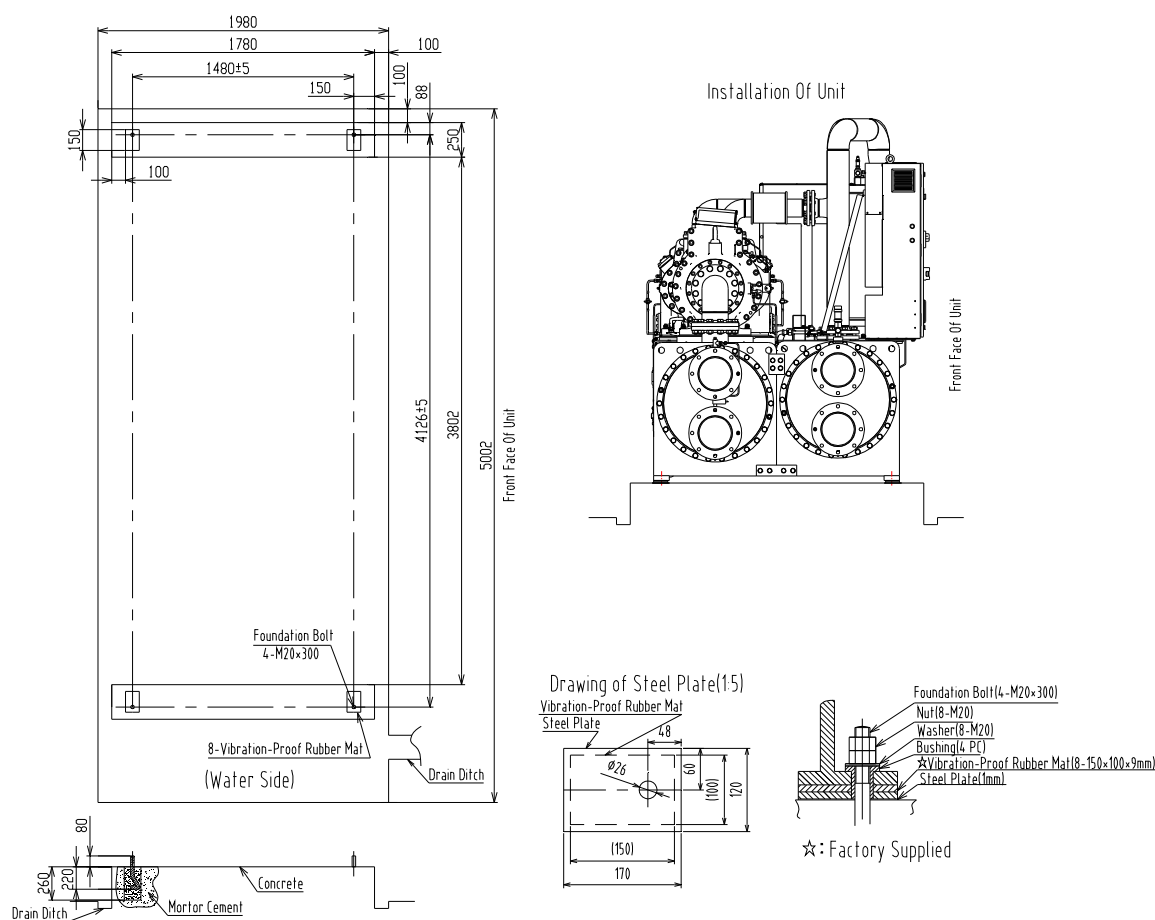
□1) Does the installation foundation adapt to the water chiller? Is anti-vibration taken into consideration? The following figure is the basic construction example of the anti vibration pad for water chiller parts. Anti vibration pad is a very simple anti vibration device. When it is installed on roof and other locations, it may cause noise due to vibration.

Unit mm



Basic example (RCUF310/365/420/470/520WVY(-S))

Unit mm

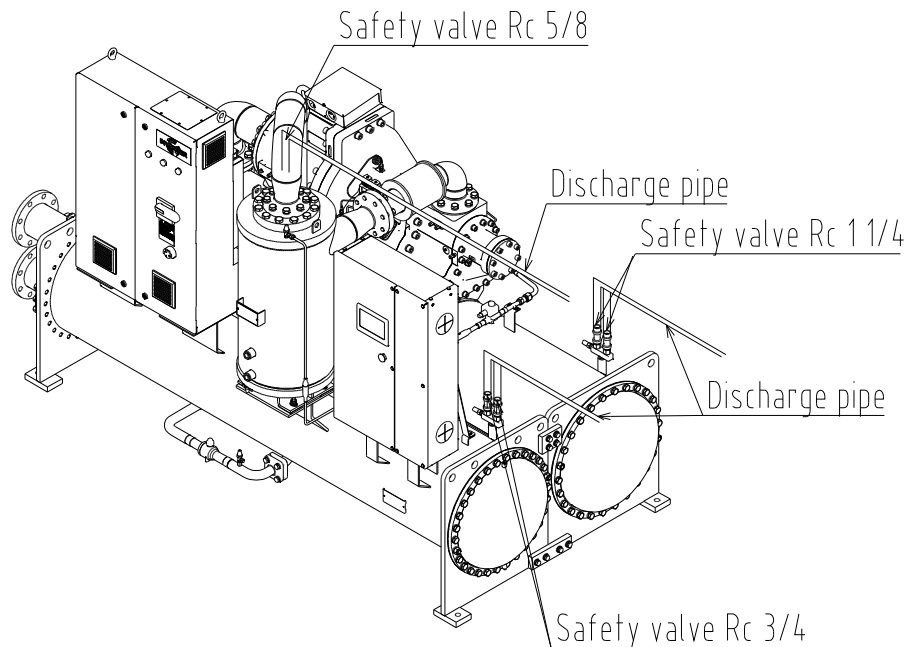


<Note>

1. The basic drawings indicate only one example.
2. The steel plate for foundation installation shall be provided by the user, with specifications referred to the detailed dimensional drawing of the steel plate.
3. The damping rubber cushion is provided with the unit, and the other parts shall be provided by the users. The damping rubber cushion shall be installed according to the figure, namely, two pieces take overlapping installation.
4. This water chiller belongs to the low vibration machine. However, vibration may occur when the installation surface is not firm enough, so the vibration-proof bracket can be installed or the strength of the installation surface can be enhanced.
5. The foundation shall be integrated with the floor in principle. In addition to calculate the vibration resistance during installation, please also consider the vibration resistance of the unit + foundation, so as to confirm the strength of the dumping or movement.
6. Drainage measures shall be taken around the foundation. Please design the drainage ditch according to the foundation drawing.
7. It is possible to have water logging when there is rainfall. Therefore, the foundation shall be flat and have waterproof treatment measures.
8. The flatness of the base shall be controlled within 3mm/m.
9. Please use the hose to connect the water pipe.

[Safety valve and discharge pipe]

□1) According to actual needs, a discharge pipe extending to the outdoor safe position can be installed on the water chiller to prevent the anoxia caused by the retention of refrigerant gas. The safety valve used on the product can be connected to the discharge pipe.



□2) The following content shall be taken into consideration in the structure of the discharge pipe

- ① The inner diameter of the discharge pipe is larger than that of the safety valve.
- ② When the discharge pipe is collected together, the sectional area of the discharge pipe shall be larger than the sum of sectional area of each safety valve collecting together (but the water chiller with the maximum capacity only have 5 discharge pipes accumulated in order).
- ③ The opening of the discharge pipe shall be installed at a high place to ensure that the refrigerant gas ejected out can be fully diffused into the atmosphere, so as to avoid directly endangering the third party.
- ④ The opening of the discharge pipe shall be higher than the height of the nearby buildings or work pieces and in a safe position.
- ⑤ The discharge pipe shall adopt the durable material. However, outdoor pipes without pressure raise when the refrigerant gas is ejected out can adopt polythene and other resin materials.
- ⑥ During construction, please make sure to have no leakage for refrigerant gas flowing in the discharge pipe.
- ⑦ Avoid bypass of the drainage pipes if possible, no valve, water return bend shall be set on the bypass.

4. Piping

□1) Can the appropriate flow be ensured? The flow of cold water and cooling water are as shown in Table 1.

Table 1 Cold water and cooling water flow (Unit: m³/h)

Item		RCUF155WVY(-S)	RCUF210WVY(-S)	RCUF260WVY(-S)	RCUF310WVY(-S)
Cold water	Maximum water flow	148.4	195.0	245.9	223.0
	Minimum water flow	47.2	62.9	78.7	94.4
Cooling water	Maximum water flow	151.0	204.1	253.1	269.7
	Minimum water flow	55.3	73.7	92.2	110.6
Item		RCUF365WVY(-S)	RCUF420WVY(-S)	RCUF470WVY(-S)	RCUF520WVY(-S)
Cold water	Maximum water flow	259.4	294.6	332.0	369.3
	Minimum water flow	110.1	125.9	141.6	157.4
Cooling water	Maximum water flow	311.4	352.0	397.8	442.6
	Minimum water flow	129.2	147.7	166.2	184.9

□2) Is there sufficient amount of water in the device?

In order to control the frequent start and stop of chiller under no load or extremely low load, the water quantity in the cold water circulation system shall be kept in accordance with Table 2 and Table 3 above.

The minimum retaining water amount is the required minimum amount of water to control the start & stop frequency of the compressor within the reference, rather than the amount of water necessary to stabilize the water temperature, and attention shall be paid to it. In addition, the minimum retaining water amount depends on the set value of the recovery temperature difference. When the corresponding set value is changed according to the usage, the minimum retaining water amount will also change.

Table 2 Minimum Retaining Water Amount of Cold Water Circulation System (Unit: m³)

Item	RCUF155WVY(-S)	RCUF210WVY(-S)	RCUF260WVY(-S)	RCUF310WVY(-S)
Minimum water retention volume	5.95	7.94	9.92	11.91
Item	RCUF365WVY(-S)	RCUF420WVY(-S)	RCUF470WVY(-S)	RCUF520WVY(-S)
Minimum water retention volume	13.89	15.88	17.86	19.85

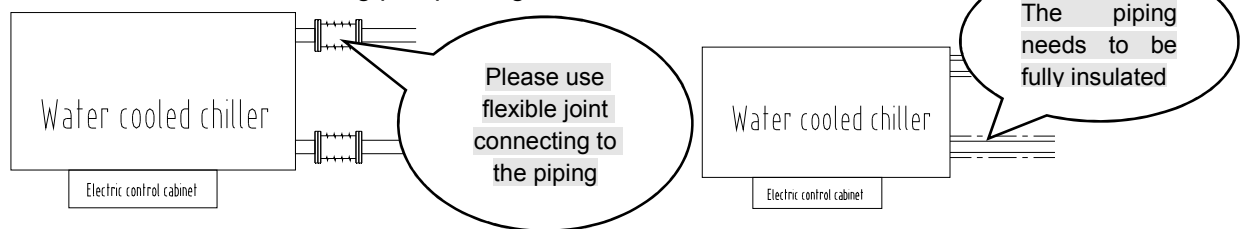
<Notes> The recovery temperature difference setting value of the chillers at the time of shipment is 2 °C.

Table 3 Heat Exchanger Volume of Water Chiller Unit (Unit: m³)

Model	Condenser volume (1 set)	Evaporator volume (1 set)
RCUF155WVY(-S)	0.499	0.641
RCUF210WVY(-S)	0.458	0.606
RCUF260WVY(-S)	0.418	0.569
RCUF310WVY(-S)	1.021	1.076
RCUF365WVY(-S)	0.97	1.035
RCUF420WVY(-S)	0.92	0.994
RCUF470WVY(-S)	0.87	0.953
RCUF520WVY(-S)	0.821	0.912

□3) Is the flexible joint connection adopted at the outlet and inlet of the water pipe?

Please adopt the flexible joints to connect the water pipe outlet and inlet to prevent the vibration of the water chiller passing through the water pipe to the buildings, or to prevent the vibration of the circulating pump being transferred to the water chiller unit.



□4) Is the water pipe adequately insulated?

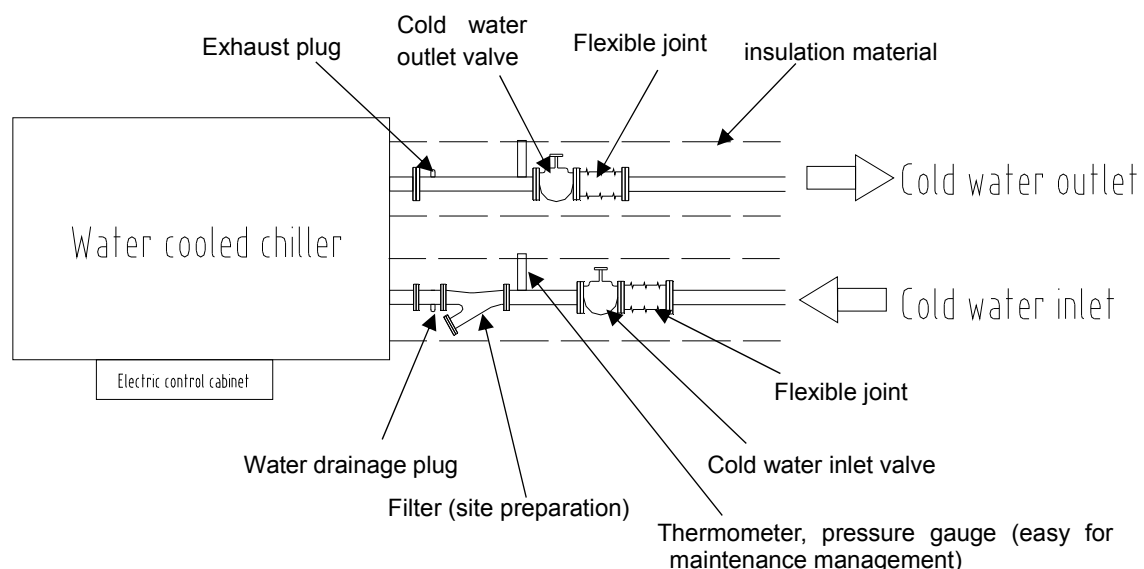
Please conduct adequate heat insulation treatment to prevent freezing of heat exchangers during winter or long term out of service.

(Outdoor piping also requires anti wetting treatment)

□5) The outlet valve and inlet valve (valves to adjust the flow) are installed at the inlet and outlet of the cold water piping and cooling water piping, the exhaust plug is installed on the cold water outlet and the cooling water outlet pipelines, and the water drainage plug is installed on the cold water inlet and the cooling water inlet piping, for water drainage at the end of season or for long term out of service. No load shall be applied on the piping side of the evaporator.

In addition, the liquid seal must not be taken on the heat exchanger under the closed condition of the inlet and outlet gate valves. Otherwise, the heat exchanger may be damaged. The following figure is the construction drawing of the cold water pipe. (It is recommended to install the thermometers and pressure gauges) cooling water pipes are installed in the same way.

In addition, please pay close attention to the inlet and outlet directions of cooling water and cold water. Please make sure that the inlet and outlet are installed correctly.

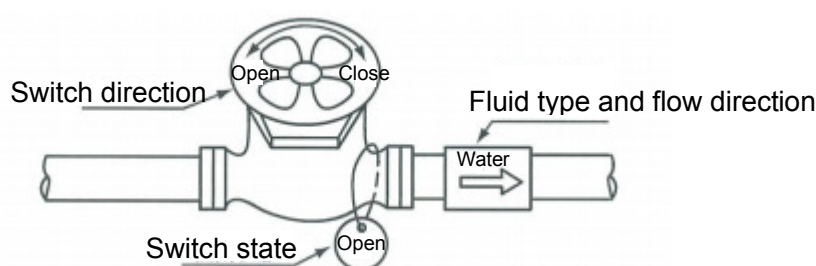


□6) Preparations for the drug cleaning of the condensers and water coolers

According to the different water quality, the scale may occur on the condensers and evaporators. Therefore, chemical cleaning shall be carried out regularly. Generally speaking, the inlet valve and outlet valve are closed during cleaning, and the piping is removed for cleaning. However, when the piping cannot be taken off, the piping interface for the chemical drug cleaning needs to be set in advance. When using exhaust plug and water drainage plug, consider their operability and pay attention to the connection size. In addition, the end covers of the condenser and evaporator can be removed and cleaned with a brush.

□7) Is there any marking on the inlet and outlet valve of the cold water pipe and the cooling water pipe?

All valves on the cold water pipe and cooling water pipe are pasted with the markings of switch direction, switch state, fluid type and flow direction.



□8) When used in winter, please pay attention to prevent cooling water and cold water from freezing.

O Prevent the freezing of cooling water piping system

Piping heat protection, or install the liquid heater in the middle of the piping and in the cooling tower water tank when using the cooling tower, to ensure that the cooling water circulation pump can run continuously when the equipment is stopped.

O Prevent freezing of cold water piping system

Use antifreeze (glycol and other glycol system brine). When using, please contact the pharmacy manufacturer. In addition, when using antifreeze, please use cast iron or stainless steel filters.

At the same time, compared with water, the use of antifreeze may reduce the performance of water chillers, which shall be paid attention.

□9) Confirm the setting and selection of the pump

O Please install the pump at the inlet side of the heat exchanger. (Prevent cavitation phenomenon of the pump or poor exhaust plugs of heat exchangers, etc.)

O Ensure the pressure head required for the circulation pump.

5. Wiring

- Follow the "Electrical Engineering Related Technical Benchmarks", "Internal Line Regulations" and the guidance of various power companies.

- The wiring shall be taken by the electricians.

□1) The voltage of the power supply must be rated voltage.

Too high or too low power supply voltage will seriously affect the performance of the machine.

□2) Is the capacity of the power supply, the size of the electrical wiring, the capacity of the wiring equipment and the capacity of the transformer adequate?

Confirm whether the selection is based on the maximum current selection of the unit.

□3) Has the protection device for the field power supply been installed?

1. The leakage circuit breaker (ELB) must be installed on the power supply circuit.

2. The leakage circuit breaker must have grounding protection, short circuit protection and overload protection function.

3. When the leakage protection special switch ELB or leakage relay is used for the leakage protection, over current protection circuit breaker FFB, or fuse and manual transfer switch shall be installed additionally for short circuit protection and overload protection.

4. When the circuit breaker or manual transfer switch is far away from the products, the manual transfer switch shall be installed additionally in a position which is easy to operate (the location of the product can be seen).

5. The capacity and wire size of each protection device can refer to the electrical wiring capacity table, and the rated cut-off capacity must be chosen to meet the capacity of the equipment.

□4) Is the grounding wire installed?

The connecting screw of the grounding wire is located near the terminal block for the power connection of the water chiller's electric box.

In addition, the grounding wire must be installed by the electricians.

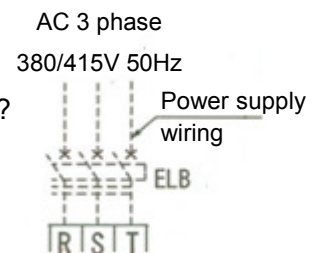


Table 7 Electrical Characteristics and Electrical Wiring Capacity (380V/415V 50Hz)

★ Electrical data of screw type water chiller

Model	Unit Main Power		Application Voltage(V)		Compressor(Three-phase)		Maximum Unit Current(A)
	VOL	Hz	Maximum	Minimum	RNC(A)	IPT(kW)	
RCUF155WVY(-S)	380	50	418	342	167	93.7	251
RCUF210WVY(-S)					224	125.3	336
RCUF260WVY(-S)					282	157.8	423
RCUF310WVY(-S)					337	188.3	505
RCUF365WVY(-S)					395	221.2	593
RCUF420WVY(-S)					453	253.3	679
RCUF470WVY(-S)					512	286.4	768
RCUF520WVY(-S)					572	319.9	857
RCUF155WVY(-S)	415	50	456	374	153	93.7	230
RCUF210WVY(-S)					205	125.3	307
RCUF260WVY(-S)					258	157.8	387
RCUF310WVY(-S)					308	188.3	461
RCUF365WVY(-S)					362	221.2	542
RCUF420WVY(-S)					415	253.3	621
RCUF470WVY(-S)					469	286.4	702
RCUF520WVY(-S)					524	319.9	784

1. The above data are measured according to the following conditions:

cooling water inlet temperature: 30°C

unit nominal cooling water flow rate: 0.215 m³ / (h·kW)

chilled water outlet temperature: 7°C

unit nominal chilled water flow rate: 0.172 m³ / (h·kW)

2. The "maximum current" mentioned above is the total operation current measured according to the following conditions, and the selection of power supply will depend on these data:

Power supply voltage: 90% of standard voltage

Cooling water outlet temperature: 40°C

Chilled water outlet temperature: 20°C

Refrigerating capacity: 100%

Wires and fuses shall be chosen properly in accordance with standards and regulations.

□5) When connecting terminal blocks and cables, please apply the below the tightening torques according to terminal block screws.

Tightening torque

Screw Size	Tightening Torque (N · m)
M4	5.5
M5	5.5
M6	5.5
M8	17
M10	42~60
M12	42~60
M14	42~60
M16	120

□6) Are the circulating pumps, remote operation wiring, etc. connected correctly?

Please connect correctly according to the electrical wiring drawing.

Tools and equipment - a set of wiring tools and universal tester (Clamp meter).

Program check—



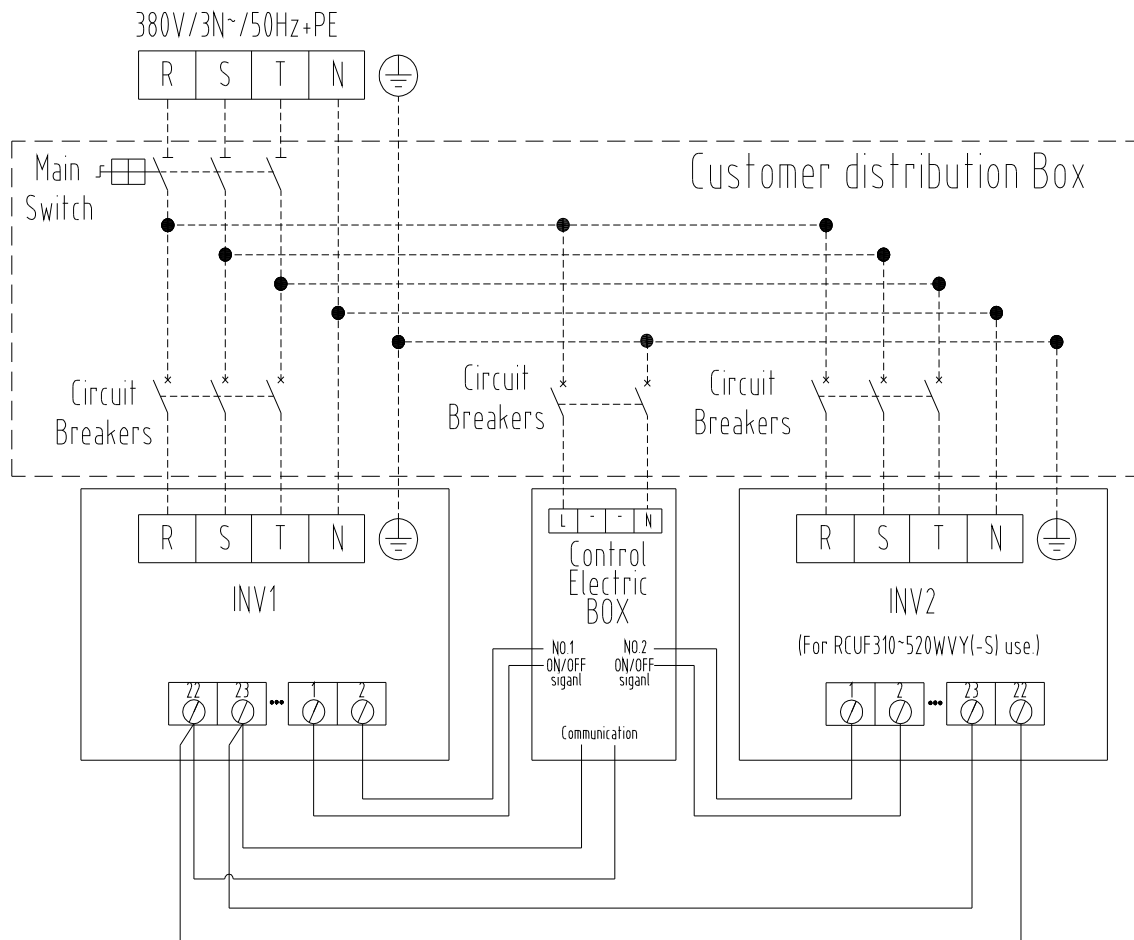
Warning

- The electrical components (such as main power switch, fuse, wire, wire conduit joint and connection seat, etc.) at the site of the construction are properly selected according to the Table 7 "Electrical Data" of this Data and are ensured to be in compliance with the local regulations.
 - Before the installation is completed, the power shall be always placed on the "off" position to prevent accidents.
 - Check and ensure that the unit is properly grounded. The ground line can prevent electric shock. It is suggested that the leakage protector to be adopted.

Main power wiring -- first, make sure that there is no current passing through the electrical installation location.

- (1). Install main power switch control box in the proper position.
- (2). Install the wire pad on the main power supply connection hole.
- (3). Connect the main power supply wire, power neutral wire and grounding wire into the electric box through the wire connecting hole, and connect to the wiring base and the ground base properly.
- (4). Firmly connect the wires to the wiring bolts of R, S, T and MP.
- (5). The main power supply wire and the field supply electromagnetic switch connection.
- (6). The main power supply shall be selected in a position that is not easy to be "off", as when the unit stops, the oil heater shall be still open.

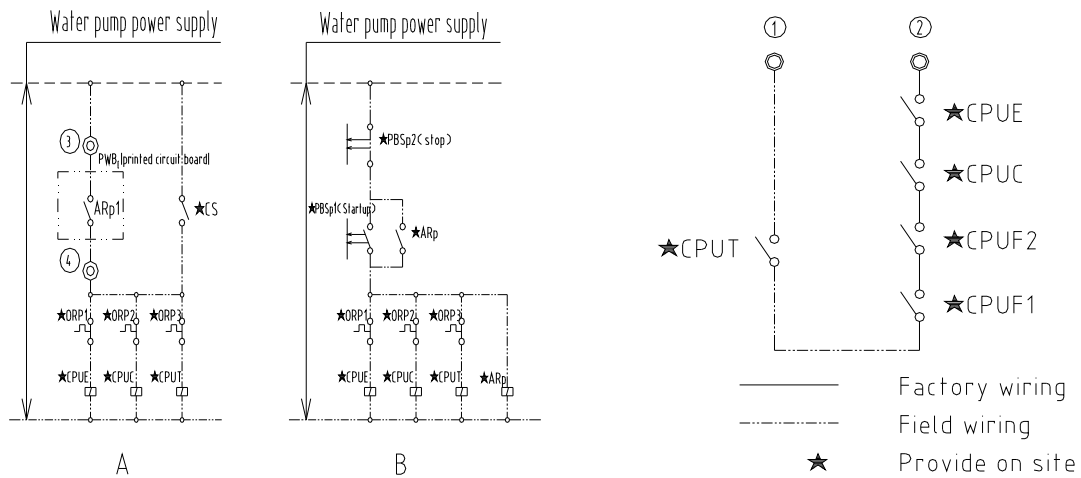
Standard Wire Connection



Control wiring - the interlocking control wire between the unit and the water pump and the starting magnetic switch of the cooling tower. The long distance control and long distance indicator connection (optional)

Control Line Connection

- (1). Working line of water pump (2). Interlocking line for water pump and cooling tower



Note:

a. Select A or B according to the operation requirements and connect the lines according to the above figure.

A: For integrated operation switch.

B: For long distance button switch.

b. If long distance indication of above figure is applied, shielded wires shall be selected to avoid incorrect display due to interference.

c. The maximum current of the switch ARp1 shall be lower than 5A.

Mark	Name
★CPUE	Freezer pump electromagnetic switch
★CPUC	Cooling water pump electromagnetic switch
★CPUF1	Chilled water flow switch
★CPUF2	Cooling water flow switch
★CPUT	Cooling tower electromagnetic switch
★AR _p	Auxiliary relay for operation confirmation
★PBS _{P1..2}	Water pump control opening/closing button
★CS	Field connection confirmation switch

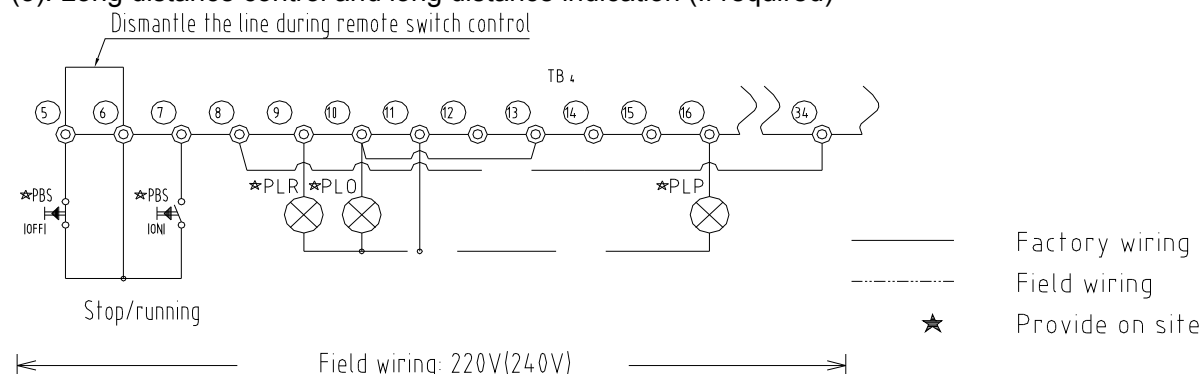
Note:

According to the operation requirements, please select the connection lines recommended above;

Warning:

If the water flow switch interlock is not connected, the unit may alarm and have other bad phenomena due to lack of water and even the damage to the unit may occur.

(3). Long distance control and long distance indication (If required)



Model	RCUF155/210/260WVY(-S)	RCUF310/365/420/470/520WVY(-S)
Corresponding connection point	8、9、10、11、16、34	8、9、10、11、13、16、34

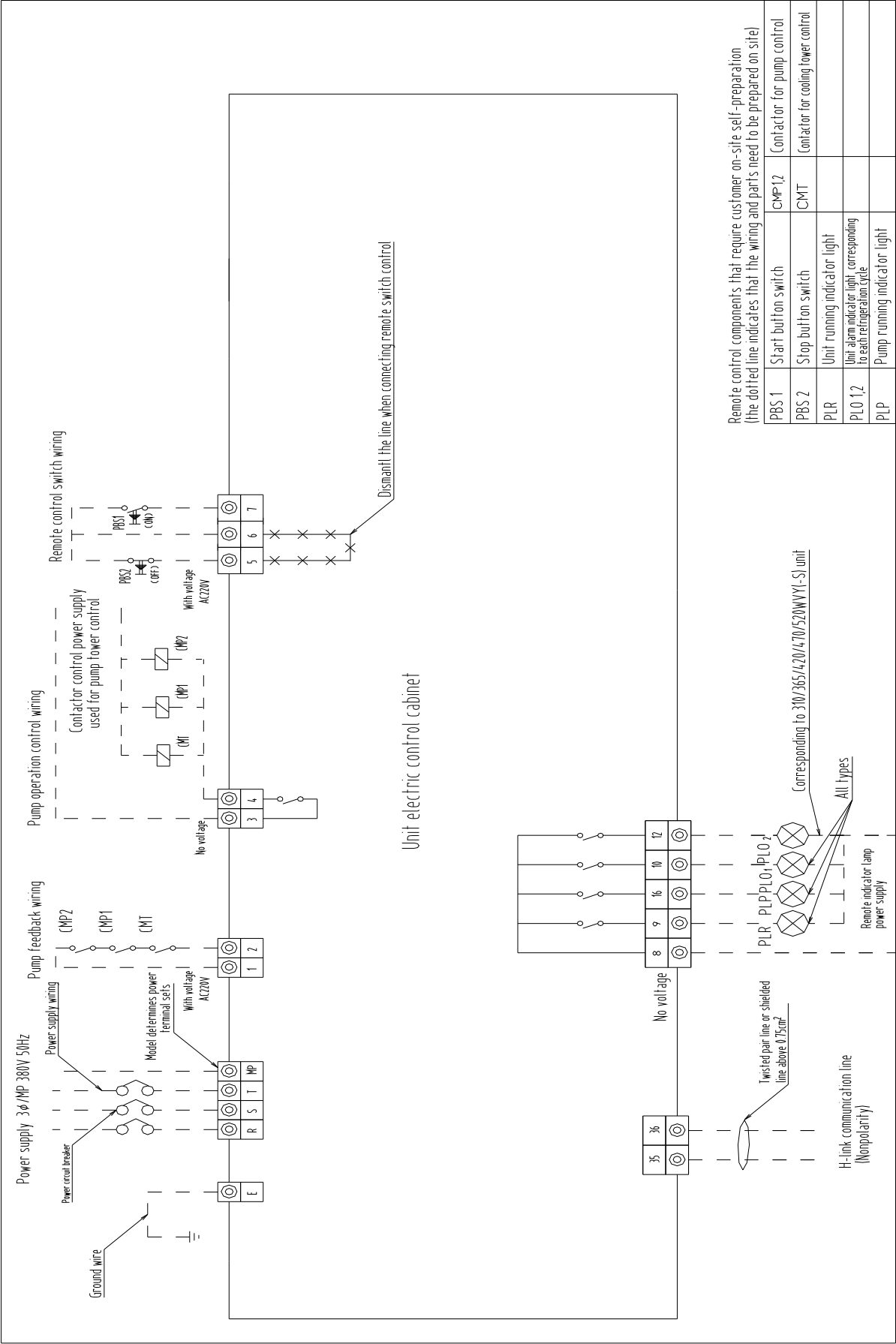
Note:

a. If long distance indication of above figure is applied, shielded wires shall be selected to avoid incorrect display due to interference

b. The maximum current of the long distance display shall be lower than 5A. (Also applicable to the liquid crystal screen unit of the corresponding type)

Mark	Name
★PBS ON/OFF	Long distance control on/off button
★PLR	Long distance operation indicator
★PLO	Long distance warning indicator
★PLP	Long distance pump indicator

General Drawing of Long Distance Control Line



6. Delivery

□1) Explain the contents of the operation instructions to the customer carefully and let the customer operate accordingly. In addition, when specific modifications are made as requested by the customer, the operation steps may change, and the customer shall be fully explained.

□2) Finally, explain the relevant contents of the installation instructions to the customer, record and stamp on the instruction before handing over.

Please inform the customer not to touch the electrical accessories except the normal operation. In case that the electrical accessories need to be checked, please press the stop switch first, shut down the water chiller, and turn off all power switches.

The installation of Hitachi water chiller can be completed according to the above instructions. Please deliver the instruction to the customer and request the customer to keep it properly.

The standard utilization of the unit shall be explained in these instructions. Therefore, the utilization of the unit other than those indicated in these instructions is not recommended. Please contact your local agent, as the occasion arises. Hitachi's liability shall not cover defects arising from the alternation performed by a customer without HITACHI's consent in a written form.

We reserve the right to revise and update the product information without further notice, which will help HITACHI to bring the latest technological innovation to customers at any time. The specific product performance is agreed by both parties in the contract.

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