

# DINDAN

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Enclosure cooling unit

Model

**14ACU/005**

User's guide



## Authorized Service Center

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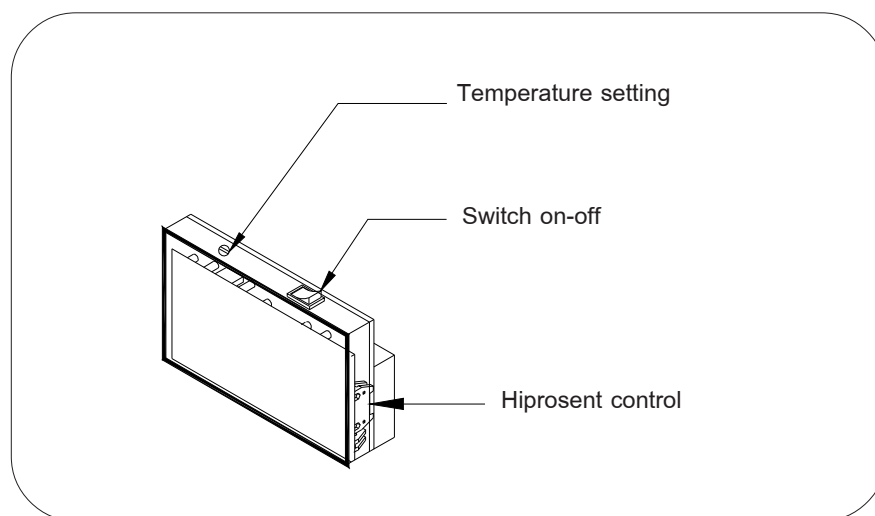
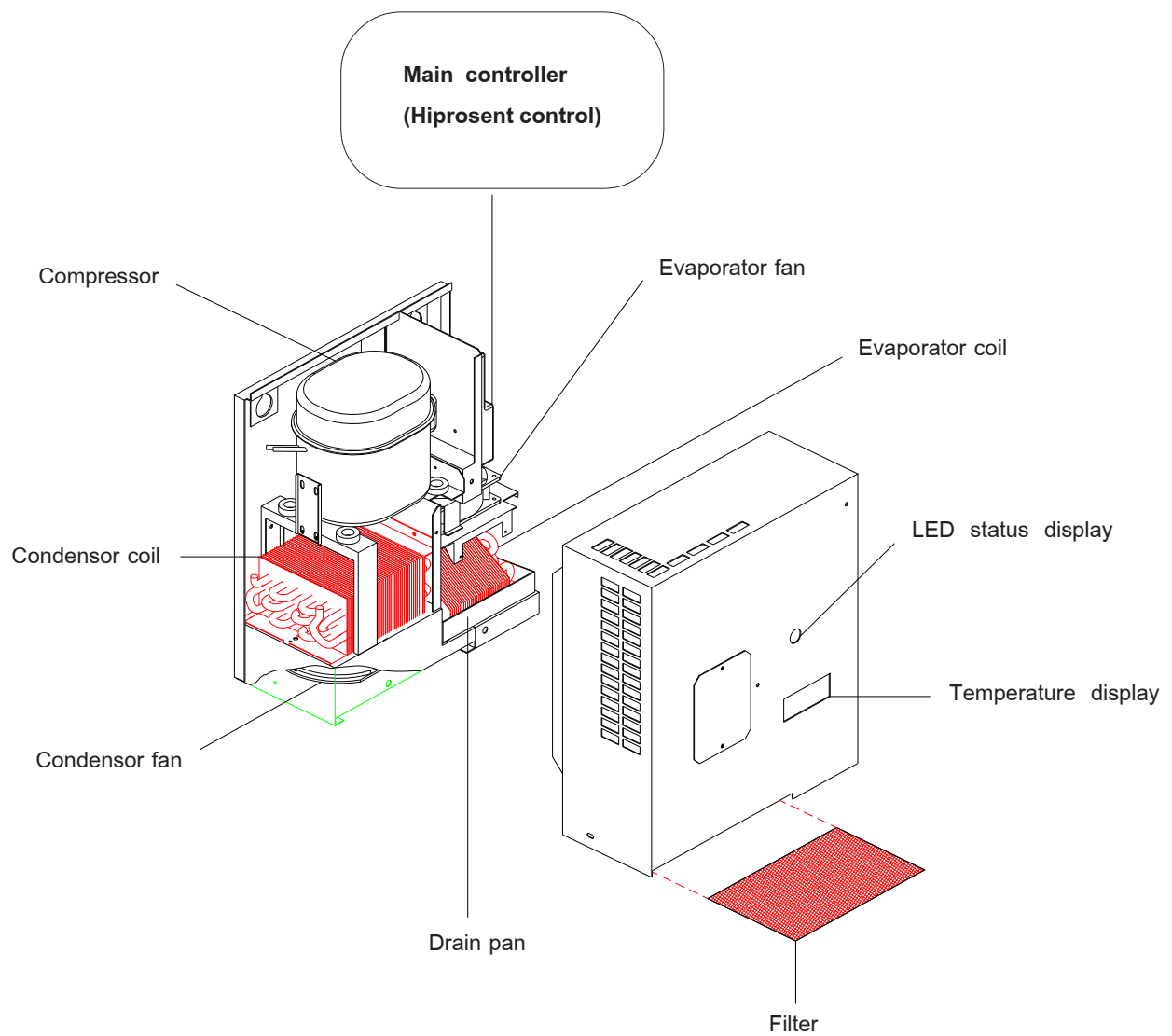
## **Introduction**

Cooling unit for control cabinet is used for diminishing internal heat by providing cool air to the control cabinet that can protect sensitive equipment. It is specially designed to resist surrounding temperature as high as 40-50 °C and can function well in any factories including those with intensive dust, particles and oil mist or with high acidity.

## 1. Over view

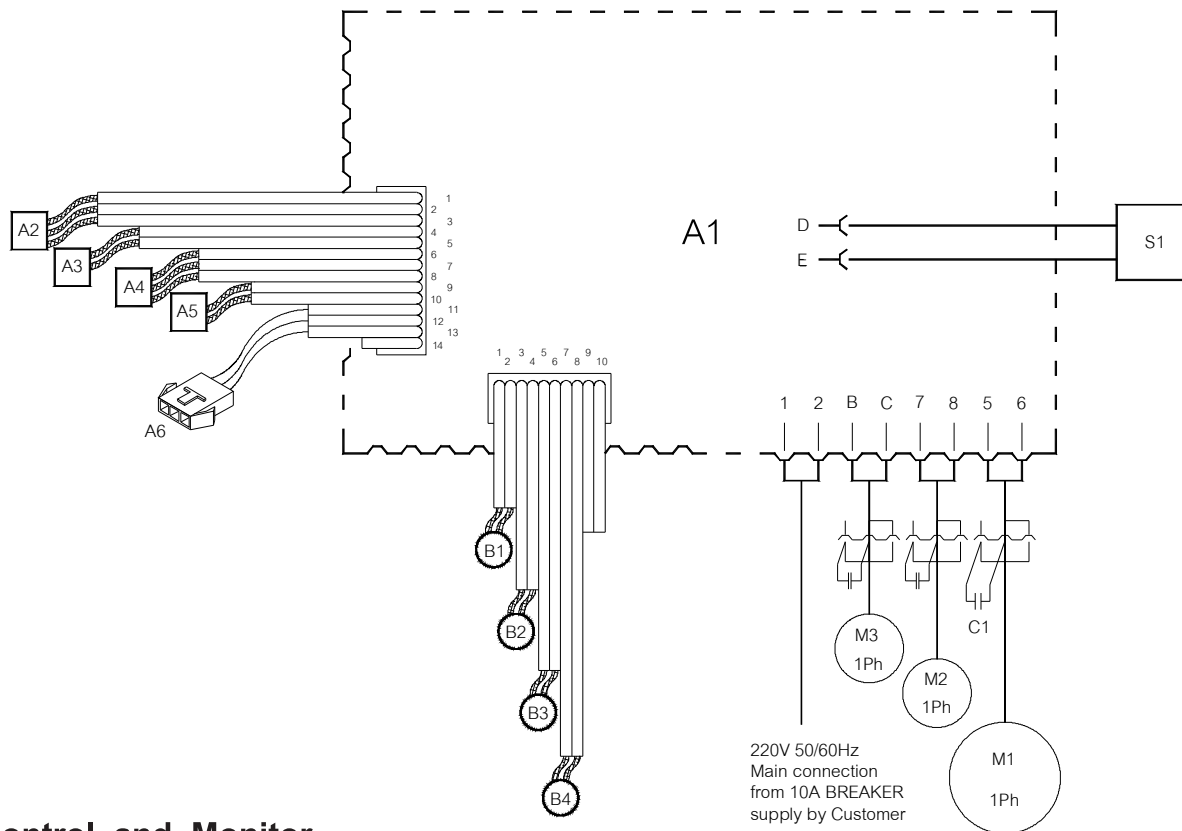
14ACU/005





**Main Controller box**

## **HIPROSENT CONTROL (EGS033-2)**



### **Control and Monitor**

A1 = Main Controller

A2 = Temperature Adjustment

A3 = LED compressor's status

A4 = LED operating status

A5 = LED Hi-Lo Voltage

A6 = Socket for Output Alarm (not appropriate with Cooling Unit)

### **Cable and signal**

B1 = Temperature sensor

B2 = Drainage failure sensor

B3 = Ice Sensor

B4 = Over heat sensor

### **220VAC**

C1 =Capacitor

M1 = Compressor

M2 = Condenser Fan

M3 = Evaporator Fan

S1 = On/Off switch

## 2. Specifications

# DINDAN

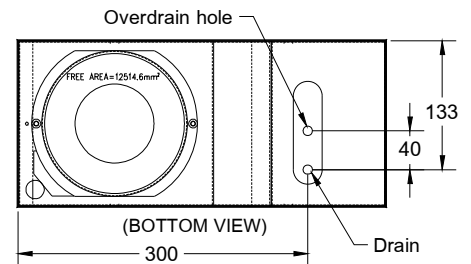
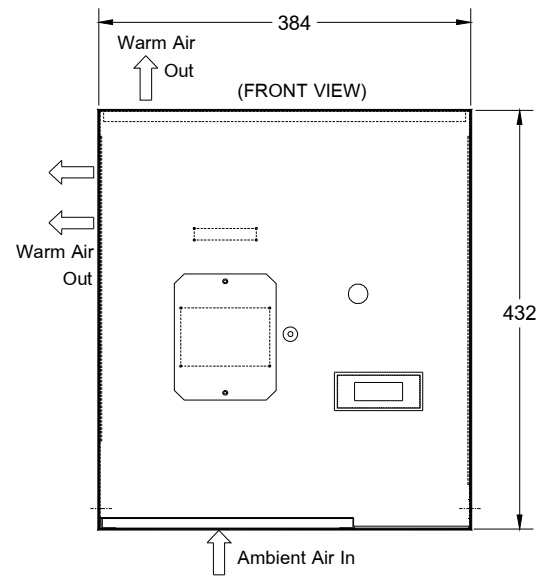
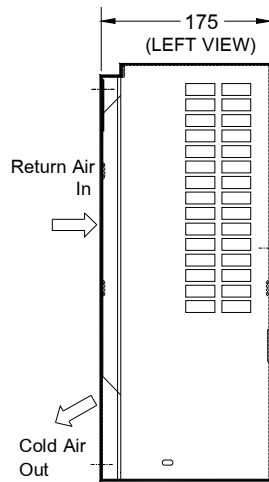
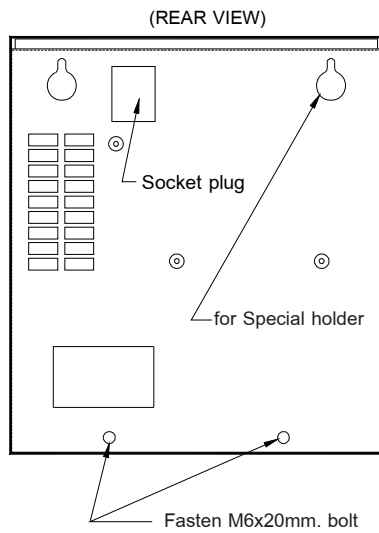
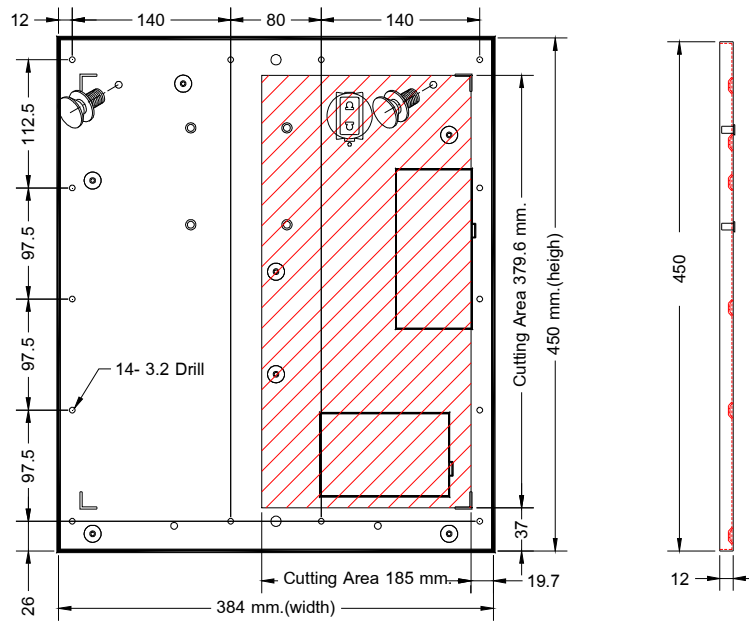
**Characteristics** (under normal operating condition at ambient temp. +35 °C.)

<b>Model</b>		<b>14ACU/005</b>
<b>Capacity W.</b>		300
<b>Installation type</b>		panel
<b>Input</b>	single-phase (V.)	220V+20% / -15%
	frequency (Hz.)	50/60
	current (A.)	1.83
<b>Compressor</b>	hermetic type	reciprocate
	torque start type	low
	refrigerant type	134a
	lock rotor (A.)	8.30
<b>System operate</b>	direct expand	yes
<b>Hi-prosent ctrl1.</b>	thermostat	yes
	condensor thermal detector	yes
	anti-freeze detector	yes
	compressor overheat detector	none
	water detector	none
<b>Protection</b>	over drain protect system	yes
<b>Display</b>	thermometer (red 7 segment 19 mm.)	yes
	system status (2 colour LED)	yes
<b>Electrical equip.</b>	safety device	7A slow-blow fuse
<b>Evaporator coil</b>	face area x rows	25.5 sq.inch x 2
	servo fan (r.p.m.)	2700
	number of fan x cfm (0.18 inH <sub>2</sub> O)	1 x 50
<b>Condenser coil</b>	face area x rows	33.75 sq.inch x 3
	servo fan (r.p.m.)	2850
	number of fan x cfm (0.2 inH <sub>2</sub> O)	1 x 158
<b>Physical data</b>	approx.weight (kgs.)(include Inst.Pl't)	26
	dimension (mm.)	W:384 D:175 H:432
	condensate drain	OD. 3/8 inch
	internal casing	electro-galvanize
<b>Air filter</b>	width x lenth (mm.)	168 x 250



# Installation Plate & Templet for cutting Area

View From Outside of Cabinet



### 3. Notification

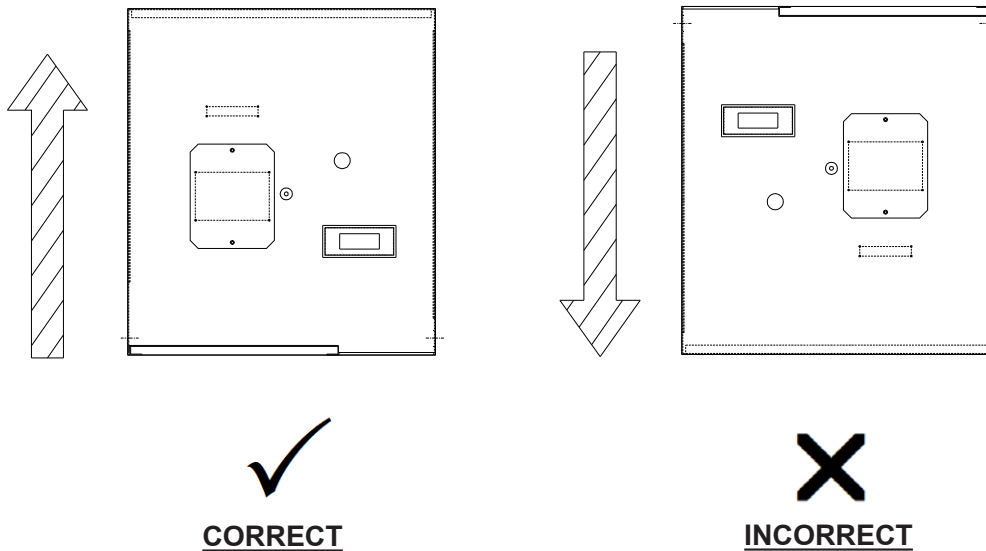
- Before, drilling, and cut. should use clean dry cloth, or the inventory doesn't lead the electricity, covers the equipment for protects iron dust touches the electrical equipment while installing. (In case of machine still operate.)
- Cooling unit should be installed in the good circulation area
- Check vertical and horizontal level of which their error shall be allowable within  $\pm 2^{\circ}$  in order to facilitate efficient drainage
- Should always install gasket between Installation plate and Cooling Unit before hang the cooling unit on the installation plate
- Installing of drain tube (Page 18)
- In order to minimize water condensation, cabinet doors should be tightly closed during operation
- Circulation fan should be installed in cabinet if various equipment is densely installed inside
- In order to obtain highest performance and durability, repair and alteration of cooling unit should be under care of distributor
- Should not adjust temperature difference more than  $10^{\circ}\text{C}$  between environmental temperature and cooling space, to prevent moisture build up on some part in the cooling area when you open the cabinet panel
- If it is necessary to set temperature lower than  $25^{\circ}\text{C}$ , it is recommended to use precision cooling unit or contact your Professional Maker.
- The equipments that are locate in the cooling air stream have to be obstructed by the insulator to prevent water condensation

## General Condition

Storage: Cooling unit should be stored at temp not exceeding 70 °C

Transportation: This type of cooling unit can't be laid down horizontally.

Installation: It shall be installed in vertical direction only  
(please see figure below)



## Disposal of damaged Cooling Unit

As its refrigeration system contain Refrigerant and lubricating oil for compressor, in order to protect environment, these substances should be disposed of properly or other under direction given by distributor.

## 4. Technical information

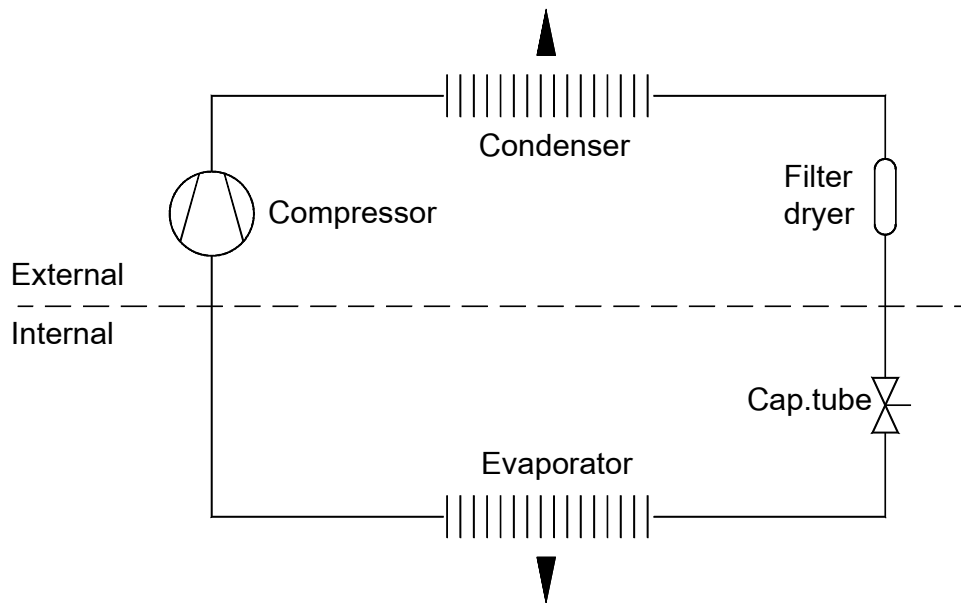
### Protective equipment

Refrigeration system has been tested with high pressure device at 350 PSI. This series of cooling unit also contains electronic circuit and sensors are installed at significant points to monitor any defect of refrigeration cycle in order to reduce burden of the user and to prolong use life of cooling unit at more costeffective practice.

### Note

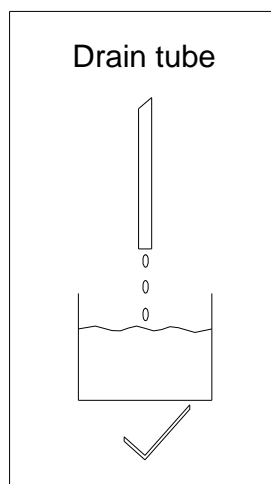
- LED light will display green colour (continuously) to indicate condition.
- Under any abnormal condition, please see pages 21.

## Refrigeration Cycle

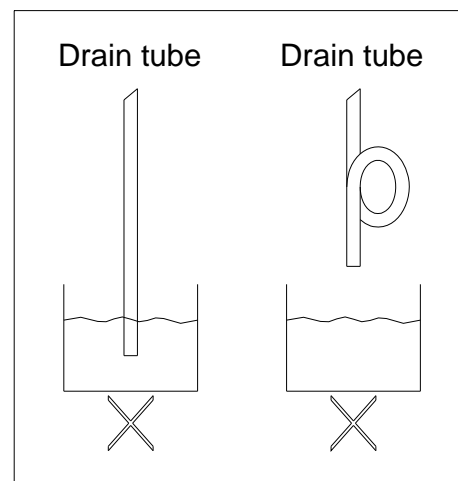


## Drainage

Drainage of condensed water from cooling system shall be done by inserting drain tube under drainpan (see page 18) and trying not to left it twisted. Make sure, the other end of drain tube is not lower than water level in the container, in order to avoid water reflux



**Correct installation**



**Incorrect installation**

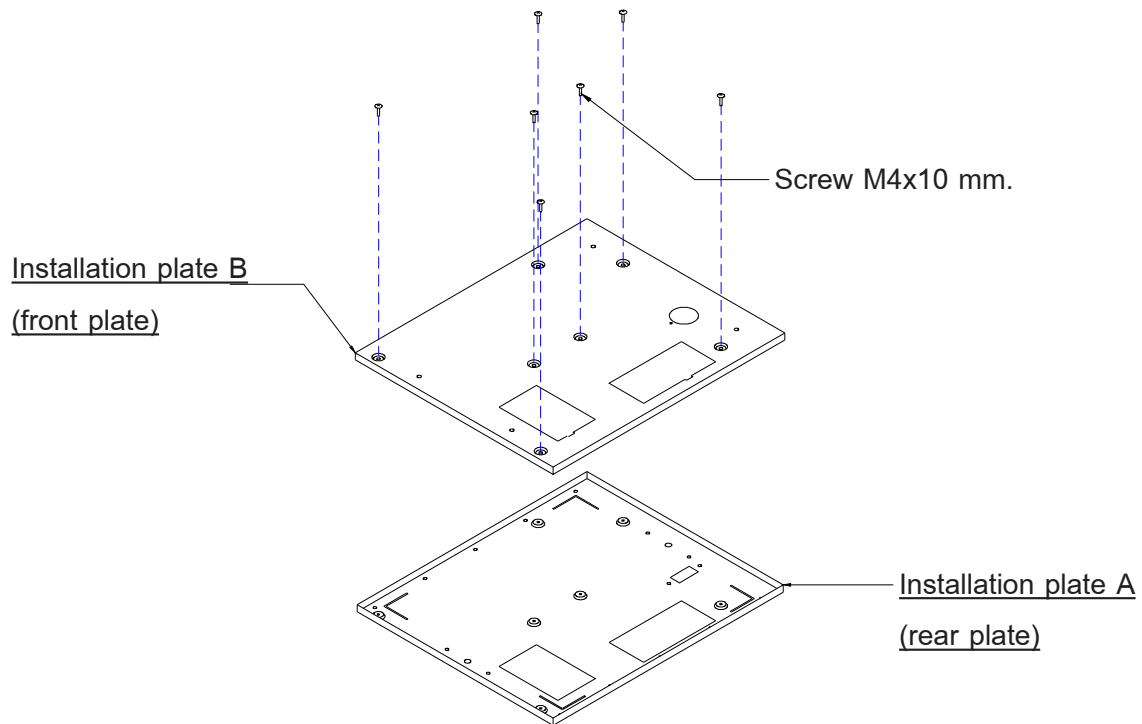
## 5. Installation

### Accessories for 14ACU/005

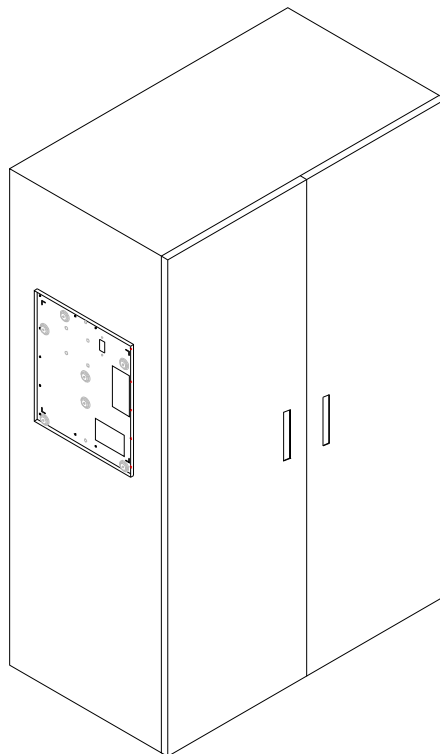
<u>Items</u>	<u>Quantity</u>
Cooling unit	1
User's guide & Warranty card	1
Socket plug	1
Socket plug base plate	1
Special holder	2
Foam gasket	1
Air filte	1
Socket plug cover (circle)	1
Installing plate	1
3/8" Drain Tube (200 cm.)	1
3 x 1 Sq.mm VCT power cord. (200 cm.)	1
Self tapping screw 1/8" x 3/8" ( <i>for Installation plate</i> )	17
Fiber washer ( <i>for Installation Socket plug cover</i> )	1
M6 x 20 mm. bolt	2
Plain washer ( <i>for M6 x 20 mm. bolt</i> )	2
Spring washer ( <i>for M6 x 20 mm. bolt</i> )	2
1/2" Cable clamp	2
6" Cable tie	3

## Installation procedure

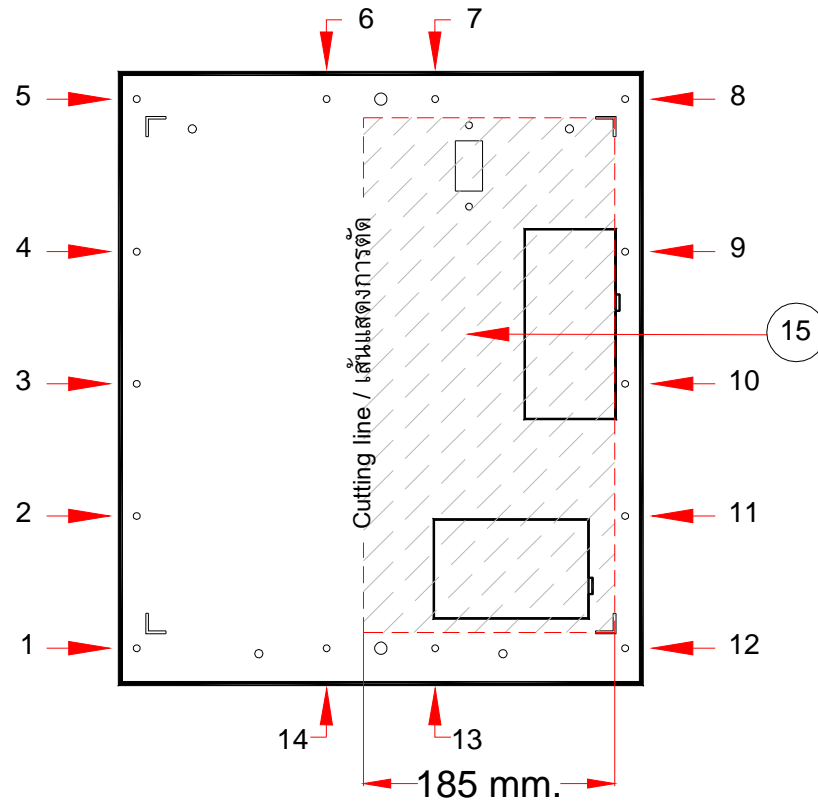
1. Remove Installation plate B (front plate) from Installation plate A (back plate)



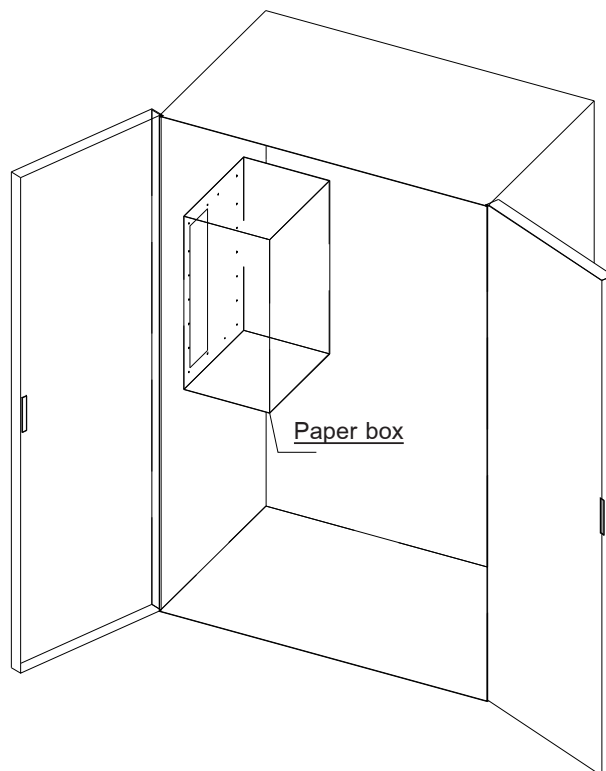
2. Align installation plate(rear plate) in the position to be installed.



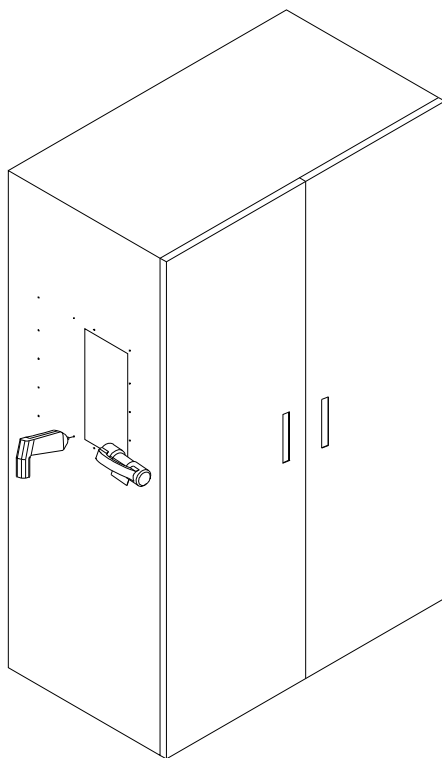
3. Layout 1-14 positions for drilling and cutout along the dot line with Jigsaw



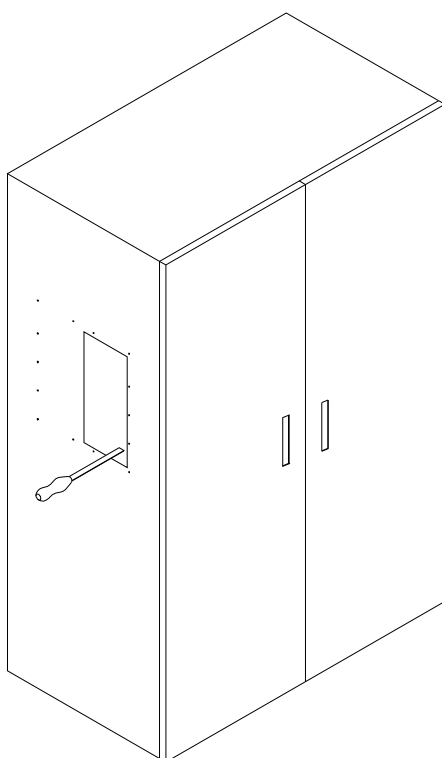
4. Cover equipments inside cabinet with clean and dry cloth, and cover with paper boxes at position will be drilled and cutted in order to prevent metal scrap falling in cabinet.



5. Drill and cut the holes and area as be pointed out from installation plate.



6. Chamfer the cutted edge and paint rust proff colour.

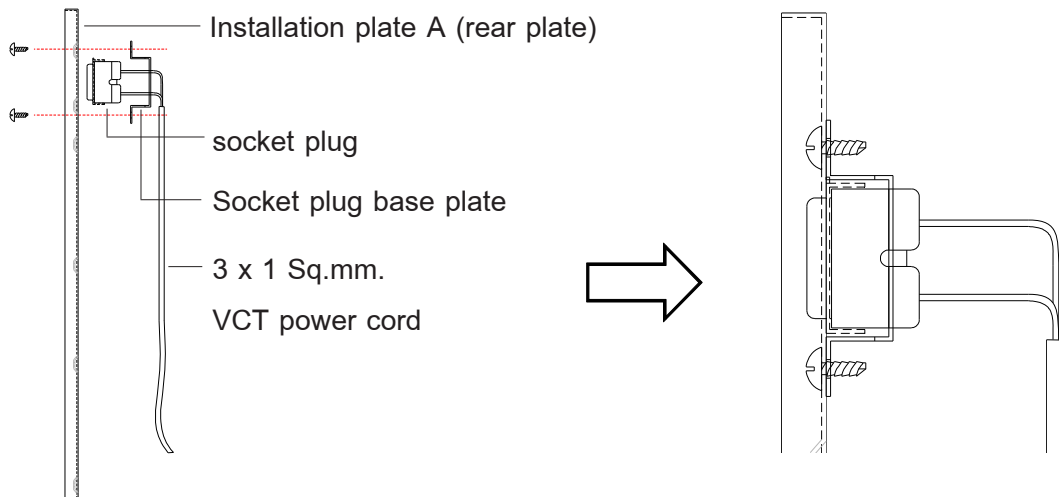




## 7. Socket plug Installation

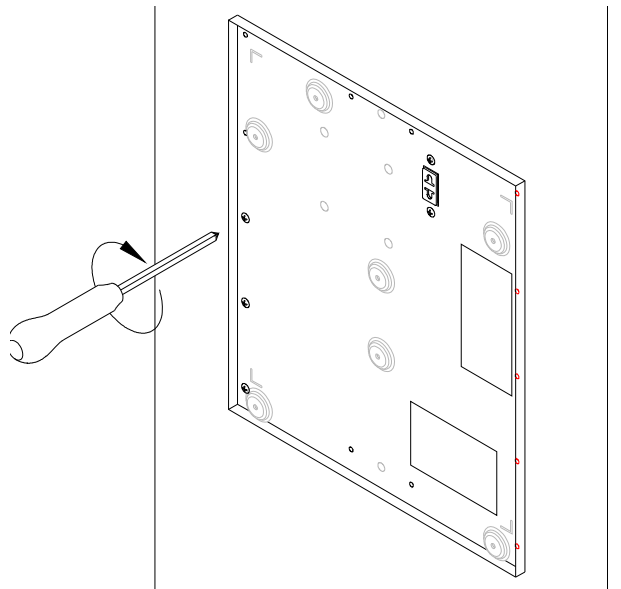
7.1 Put the cable in the socket plug and screw.

7.2 Put the socket plug and Socket plug base plate in the position and screw it



## 8. Installation plate attachment

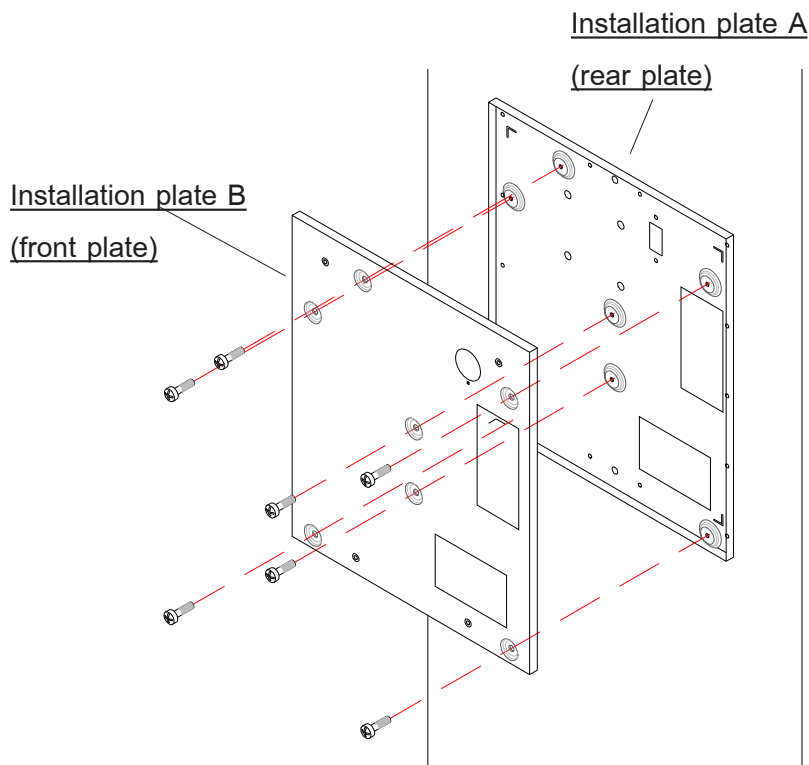
8.1 Install the Installation plate A (rear plate) with 14 self tapping screws



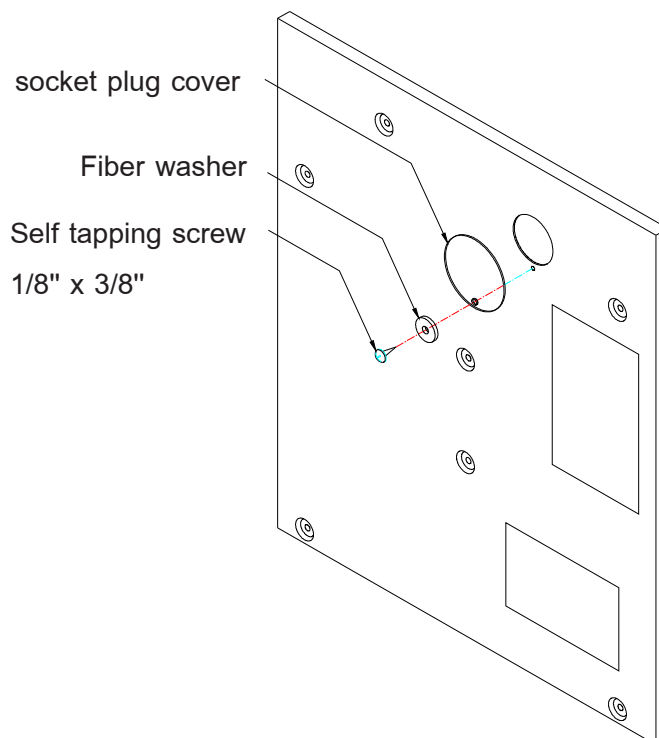
8.2 Connect main power line with 220VAC which be connected to 10 Amp. breaker (Main power is 1 Sq.mm.)

Beware Breaker shouldn't be shared its load with any other components.

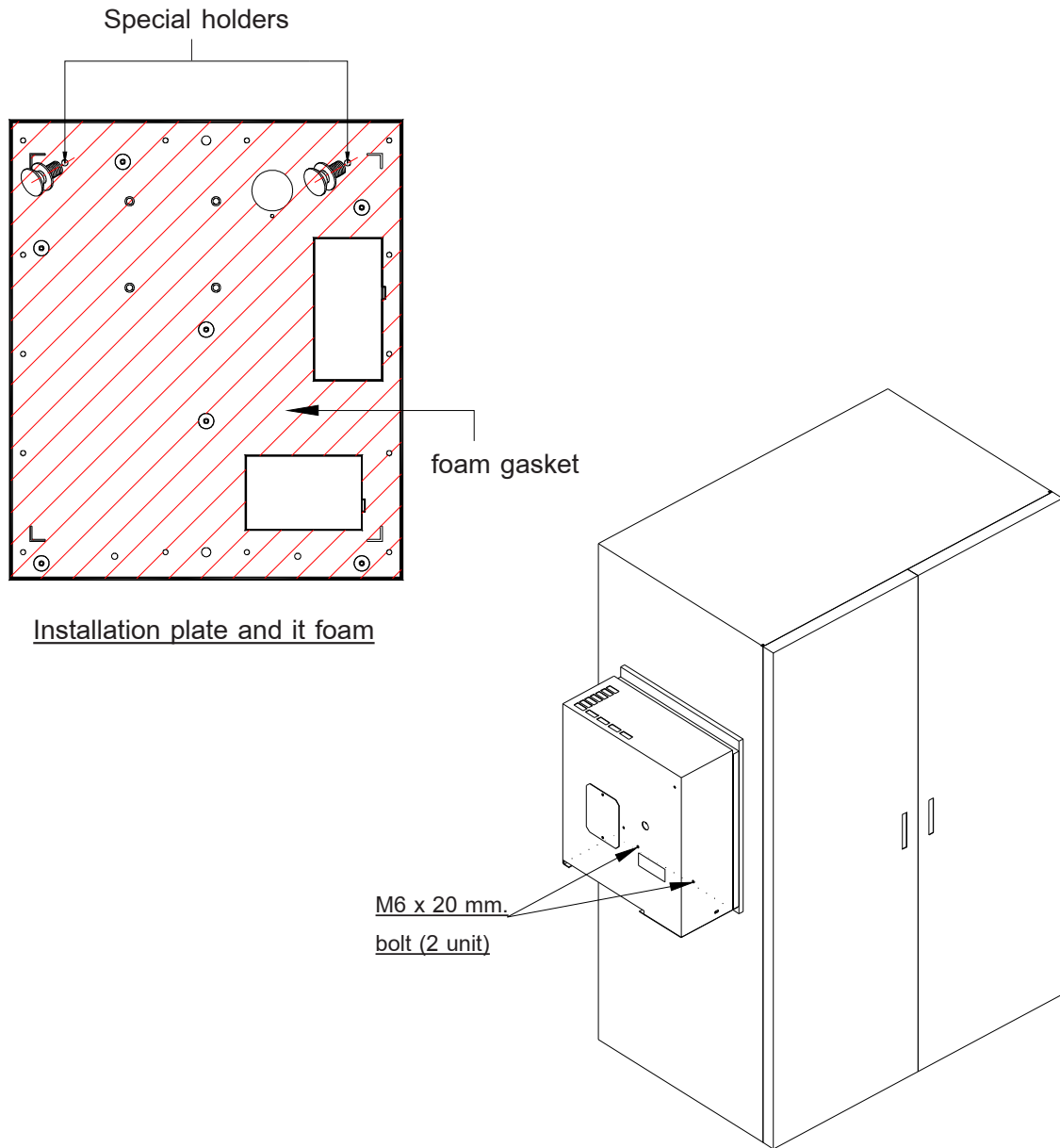
9. Install the Installation plate B (front plate) to Installation plate A (rear plate)



10. Install the socket plug cover.

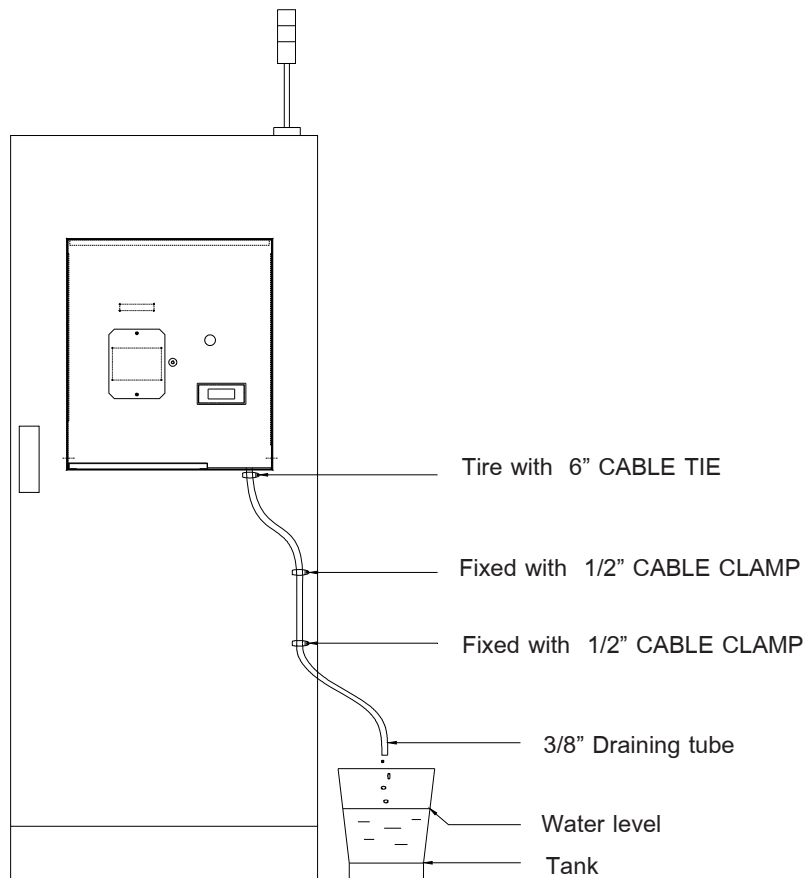


11. Attach the foam gasket to the installation plate and fasten the special holders on it and then hang the cooling unit on this holders, fasten another 2 screws M6 x 20 mm. at the bottom of the cooling unit.



12. Uncover the frontal case of cooling unit then plug-in the plug.

13. Install the draining tube by the illustrature below



Illustrate of drainage wiring

Beware:

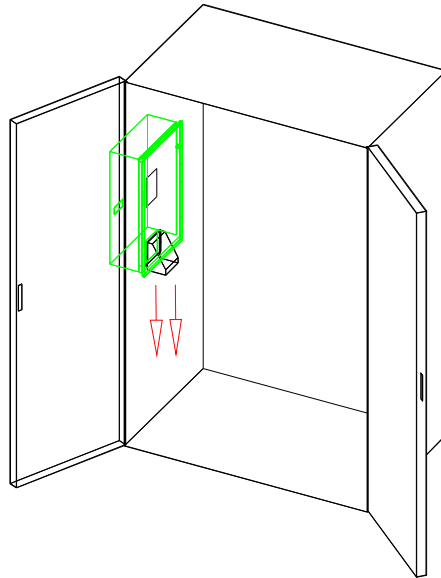
Avoid dipping draing tube below than water level  
which be clogged its drainage

14. Turn on breaker for operation

## Air diverter installation(In the necessary case)

### 1. Divert air down

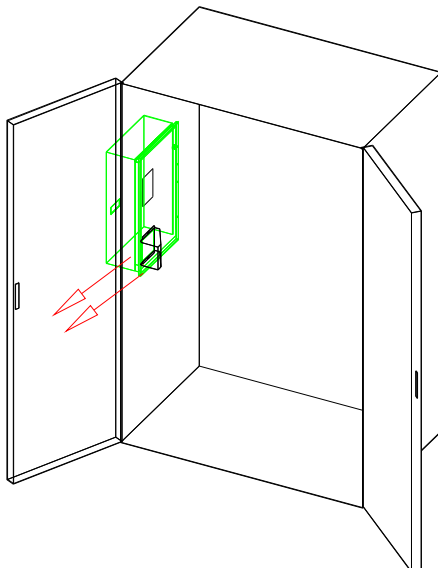
Turn the air diverter to blow air down as shown below the drill and fix it.



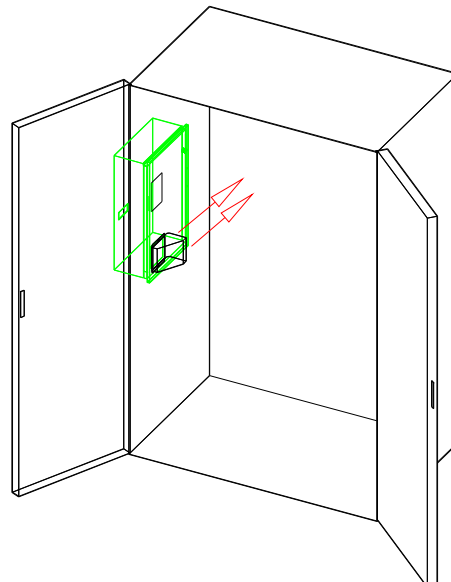
### 2. Divert air to left and right

Turn air diverter to left or turn air diverter to right

Drill and fix the diverter as shown below



Illustrate diverting the air to left



Illustrate diverting the air to right

**Note** : Air diverter is the additional, not appropriate with common installation equipment.

## **6. Maintenance**

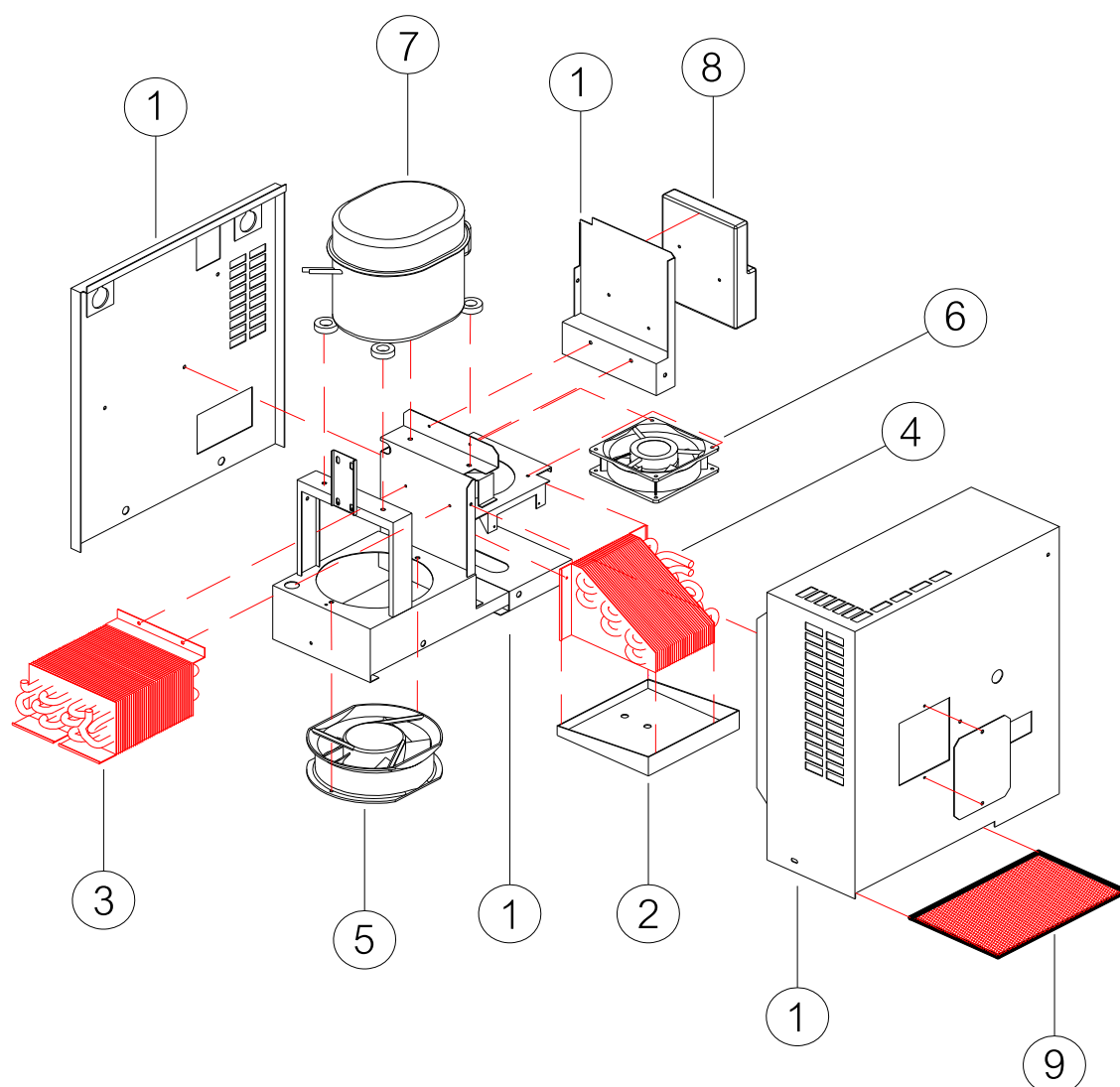
Maintenance of DINDAN cooling unit can be simply done by giving care to the air filter and condensor coil not to be clogged up. The cleaning interval for the air filter depends on how dirty it is of the area where it is installed.

In case of abnormal function, it can be noticed from LED light which is to change in corresponding with abnormal condition of cooling unit. For more details please see page 21.

## 7. Fault indication and analysis:

<b>Fault display</b>	<b>Nature of fault</b>	<b>Cause</b>	<b>Remedy</b>	<b>Unit's operation</b>
Red color continuously blink	Hi-pressure in refrigerant system	Ambient temperature too high	Unit's specified range of application exceed	The unit still operate
		Condenser contaminated	Clean	
		Filter mat contaminated	Clean or replace	
		Condenser fan defective	Replace	
		Operational indication, icing up	Raise the set point value of the internal temperature	
Red color blink	Risk of icing	Evaporator contaminated	Clean	Automatically shut off
		Evaporator fan defective	Replace	
		Lack of coolant	Carry out of cooling service	
		Control panel switch off	Switch on the control panel	
No signal	Unit not operate	No voltage supply	Supply new line power	Unit not operate
		Breaker's tripped	Replace or switch on	
		Under voltage	Check line voltage connection	
		Internal fuse has broken	Carry out of cooling service	

## 8. Assembly and part number



ITEM	DESCRIPTION	PART NUNMBER	Qty.	PART AVAILABLE
1	main casing	-	1	No
2	drain pan	-	1	No
3	condenser coil	-	1	No
4	evaporator coil	-	1	No
5	servo fan 6"	EP-03-012	1	Yes
6	servo fan 4"	EP-03-102	1	Yes
7	compressor	EP-04-101	1	Yes
8	control board	XEE-22-011	1	Yes
9	filter	CR-15-102	1	Yes