

Instruction Manual

iAC-18 SERIES



Evaporative Air Cooler

iAC-18A
iAC-18B
iAC-18C



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Our company reserves the right to make alternations to specifications, quantities, dimensions etc.

For production or other reasons, subsequent to publication.

The information contained herein has been prepared by qualified experts within our company.

While we believe the information is accurate and complete, we make no warranty or representation for any particular purposes. The information is offered in good faith and with the understanding that any use of the units or accessories in breach of the directions and warnings in this document is at the sole discretion and risk of the user.



Preface

The appearance of the product your purchased might be different with the this manual. However, it won't affect the operation and use.

To operate the unit better, read the instruction carefully before using it.

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Basic principle

Evaporative air cooler units is a high-tech product, introduced from Europe and American. Its basic principle is as follows: Water evaporation brings away the surrounding heat and causes the temperature to become low. Its working principle is that negative pressure occurs because of wind draining by exhaust fan. Air goes through the cooling pad and the water pump transmits water to the pipes of cooling pad at the same time. The water nourishes the touching surface evenly and the cooling pad angel makes water flow evenly to the side of wind inlet, absorbing amount of the heat from air, which cool the air in cooling pad and makes the wind cool, wet and fresh. The unevaporated water falls into the bottom, forming the water cycle. There is a water inductor in the bottom, so when the water falls to certain level, inlet valve will open automatically to add water; when water reaches the appointed level, the valve will close automatically.

Application

Manufacturing: textile, machinery, ceramic, refine chemical industry, metallurgy, glass, hardware and leather factories:

Processing: plating, electronic, shoe making, painting, plastic, clothes making, food package etc. Others: golf center, baking place, playground, hospital, waiting room, school, supermarket, washing room, kitchen, vegetable market, entertainment center, underground parking lot, park, greenhouse, poultry farms, garden, and places where air conditioning and ventilation fan has been installed but cooling is not enough.

Unit model and air supply mode

Before the installation of units, please read below information to choose model in different installation place. Model No. and appearance as below:



iAC-18A
(Air supply from the bottom)



iAC-18B
(Air supply from one side)



iAC-18C
(Air supply from the top)

Attention:

The product you bought might be different with pictures showed in this instruction manual because of modification or improvement of the model.

Specification

Model	Max airflow (m ³ /h)	Motor Power (kW)	Water capacity (L)	Unit Size LxWxH (mm)	Air Outlet Dimensions (mm)	Net Weight (kg)	Sound Pressure Level@1m dB(A)
iAC-18A	18000	1.1	25	1100×1100×1000	670×670	62	68
iAC-18B	18000	1.1	35	1190×1100×950	670×670	63	68
iAC-18C	18000	1.1	35	1100×1100×1020	735×735	66	68

Attention: If the product you bought is different with specification, standard shall be object to the real fitting.

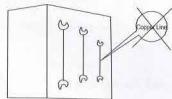
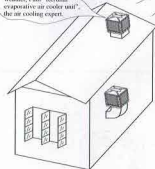
Cautions

Before operating the unit, please read the following instructions carefully:

Running the unit correctly under the following items:

- Environmental temperature : 18-45°C.
- Environmental relative humidity : ≤85%.
- Atmospheric pressure : 86KPa-106KPa.
- The supplied water should be soft water, water temperature ≤45°C, water supply pressure: 0.15-0.6Mpa.
- Voltage tolerance : +5%.
- Environmental Air quality should be no less than GB3096 third grade (including).
- Corrosion-free environment.

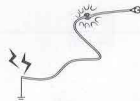
Don't worry about the hot weather, I am "Kondell evaporative air cooler unit", the air cooling expert.



Don't use the incorrect fuse or other metal fuse, it might cause fire.



Keep far away from fire during transportation, installation and operation.

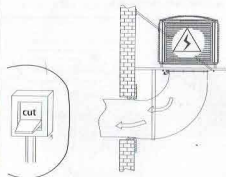


The wiring should be connected correctly and kept solid, keep away from mouse biting and overweight pushing, stretching, or changing of power cord and control wire.

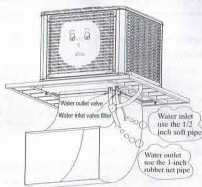
Power cord should be changed by the manufacturer or qualified personnel if there is damage.



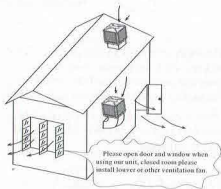
Grounding: Must be touched to ground! Grounding wire must be connected with the specially grounding board device of the building!



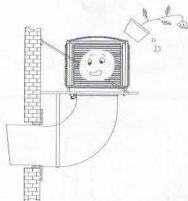
Don't open or repair the unit when it is working, make sure power supply is off before repair and maintenance.



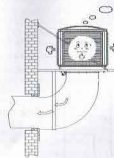
Please ensure the water inlet pipe and the water outlet pipe both in good connection, water leakage will cause damage.



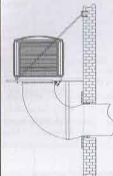
To ensure the best efficiency of our unit, please keep enough door and window open.



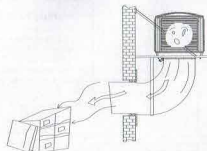
Don't stand or sit on the unit or put other things on it, it might cause damage.



To ensure the cooling efficiency, the filter net could be considered installing for protecting the unit.



After few year's operation, check the installation from time to time to make sure the installation is solid. Any security risks should be informed to the professional



If using the unit in the place where strict humidity and temperature needed, please install the unit under the guidance of professional personnel.



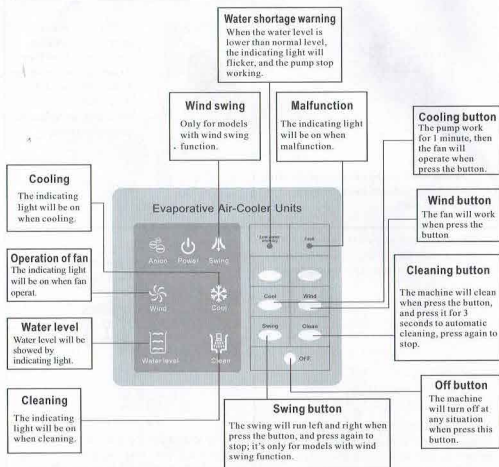
Any abnormality occurred during operation, please stop using immediately and inform manufacturer or distributor.



Warning :

1. All users please operate under above instructions, if not, any fortuitous accident occurred, our company shall not take any responsibility.
2. Don't change, repair or move the unit as you wish. All the installation and repair should be done by professional personnel, otherwise accidents may occur.

Operation illustration of control panel



Water Level control function (Assume : D is Maximum water level, A is Minimum water level, B is low water, C is Water shortage)

1. Preliminary power on :

If water level at C, it shows lack of water. Water intake valve will be turned on until water level up to A and Water Shortage LED indicator will be off. Water will be stop while water level reaches D. If water level is in between C and D, water pump will be working and water level indicator just shows B not C and Water shortage / fault LED indicator will not light on. Water intake valve is continuously on to fill in water until water level up to D.

2. Operating progress :

While water goes up to C, Water shortage LED indicator lights on and water pump will not run. While water level reaches A, water pump starts to run and Water Shortage LED indicator is off. While water level reaches D, water intake valve is stop. While water level reaches B, water intake valve is running continuously until water level reaches D.

Note : If Water level sensor is not yet connected, no control panel function will be work. Alarm indicator will be sparkling.

Water intake valve protection function : If water level is no change after water intake valve runs 15 mins, it will be stop to fill in water. After next 15 mins, it will run again. For example :

On 15min -> Off 15min -> On 15min -> Off 15min -> On 15min -> Off 30min -> On 15min -> Off 30min.

Air cooler unit protection function :

Under condition of wind or cool, the machine will stop after 10 seconds' working if the cable is interrupted between the control panel and main board.

Fault function :

Under Cool or Wind condition, Fault LED is sparkling to show lack of current. If both Fault LED indicator is sparkling

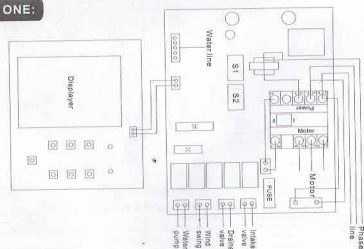
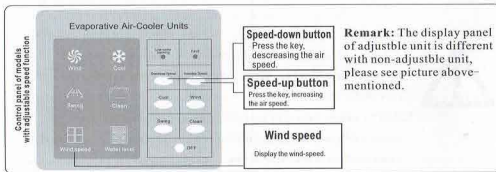
Instructions for automatic cleaning

The machine has automatic cleaning function. The automatic cleaning function operates when indicating light flicker, time can be set from 3-8 hours, and the tolerant setting is 3 hours. If you want to reset it: open the back cover of the control panel. There is one switch on the back of the panel, and details please see chapter below. Please cross-set the cleaning time if more than one machine installed.



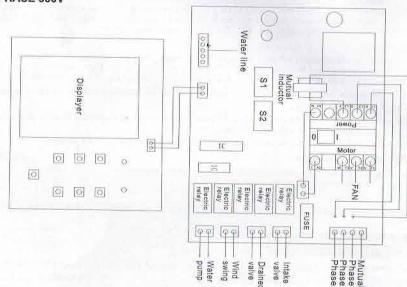
Circuit diagram ONE:

3-PHASE 220V



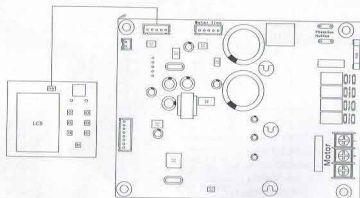
Circuit diagram TWO:

3-PHASE 380V



Circuit diagram of machine with speed adjustor THREE:

SINGLE PHASE 220V



Dangerous! High voltage!

High voltage inside,
do not open it and professional
personnel!

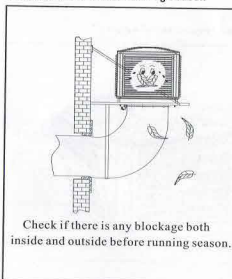
Warning

1. Plug has to be match with jack in power connecting!
2. Power off first before cleaning steps!
3. Keep water out of the power box!

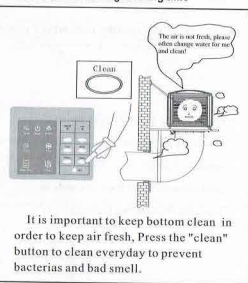
Attention: Single phase should be connected
with air-break switch, not plug is forbidden.
(Only for reference, for details pls refer to switch box)

Maintenance

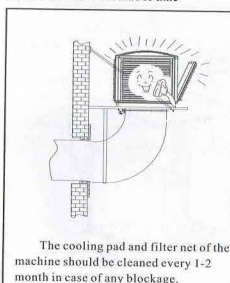
A. Maintenance before running season



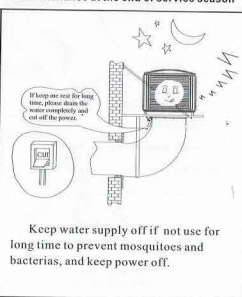
B. Maintenance during running time



C. Maintenance from time to time



D. Maintenance at the end of service season

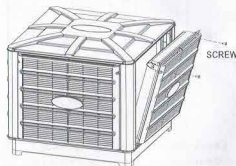


E. Inside cleaning

Completely cleaning every 1 or 2 month is recommended to make sure high cooling efficiency.

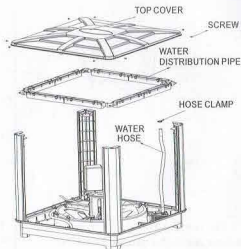
First: uninstall the cooling pad(total 4 pieces and regardless of order)

1. Unscrew the screws at the top of the cooling pad
2. Hold the louver on the top, pull outwards and then upwards to separate the cooling pad sets from the cooler.

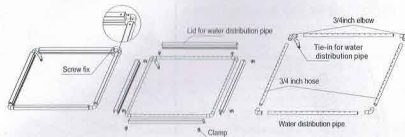


Second: Uninstall the top cover and water distribution pipe

1. Unscrew the screws on the top cover, and then remove it.
2. Screw off hose clamp and loosen the water hose, and then take off the water distribution pipe.

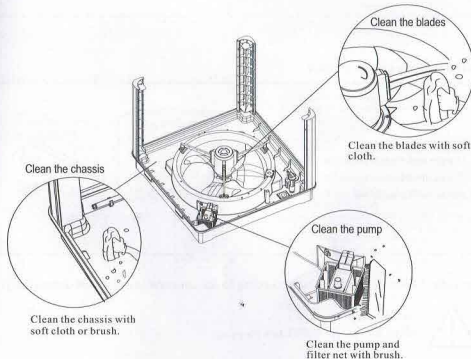


Third: Cleaning of water distribution pipe



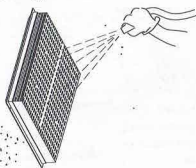
1. Take off the water distribution pipe as the picture above.
2. If the holes on the pipe is blocked, puncture it with wire.
3. Clean the pipe with soft cloth and clean water.

Fourth: Cleaning of chassis and accessories



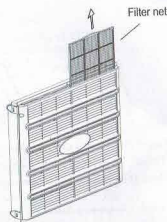
Fifth: Cleaning of cooling pad

Clean the cooling pad with water from inside to outside



Attention:

Do not use water with high pressure, any acid or alkaline detergent is forbidden.

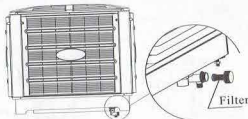


Clean the filter net from time to time.

Sixth: Cleaning of water filter

Steps:

1. Unscrew the back lid of the filter
2. Clean the filter.
3. screw on the back lid



Seventh: Assemble the machine according to the converse sequence of disassembly.

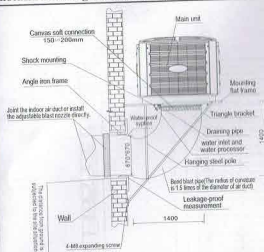


Attention:

Make sure power is off when cleaning.

Installation diagram of the unit

Installation diagram of wall-type Bottom wind outlet



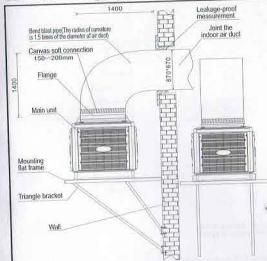
WARNING:
In order to avoid damage or any quality accident to the unit, please install the unit according to the Technical Requirements and schematic diagram.

Use the 40°40°4 angle iron connect with the wall or the window's bolt screw, put the rubber between air duct and angle iron frame for shock-proof, and seal all the apertures with glass cement or cement. The bend blast pipe must be done according to the drawing, sectional area of the uptake be no less than 0.45 square meter. Install the hanging steel when fixing the air duct, it could hanging all weight of the air duct on the mounting frame.

Technical Requirements

1. The welding and installation of the triangle bracket must be solid.
2. The mounting frame should support the weight of the unit and the maintenance personnel.
3. Unit installation should comply with the standard of GB50275-98, the deviation of the level should not bigger than 1/1000.
4. All air duct must do the water-proof treatment.
5. The junction box of the unit must be fixed near to the wall for repairing conveniently.
6. Must make the water-proof syphon on bend blast pipe which the part near the wall, to prevent water flowing into the room.

Installation diagram of wall-type top wind outlet



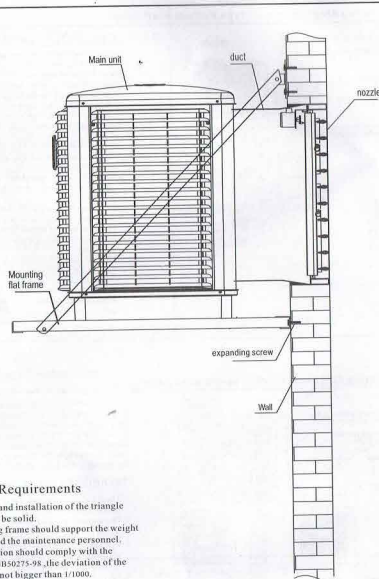
WARNING:
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Use the 40°40°4 angle iron connect with the wall or the window's bolt screw, put the rubber between air duct and angle iron frame for shock-proof, and seal all the apertures with glass cement or cement. The bend blast pipe must be done according to the drawing, sectional area of the uptake be no less than 0.45 square meter.

Technical Requirements

1. The welding and installation of the triangle bracket must be solid.
2. The mounting frame should support the weight of the unit and the maintenance personnel.
3. Unit installation should comply with the standard of GB50275-98, the deviation of the level should not bigger than 1/1000.
4. All air duct must do the water-proof treatment.
5. The junction box of the unit must be fixed near to the wall for repairing conveniently.
6. Must make the water-proof syphon on bend blast pipe which the part near the wall, to prevent water flowing into the room.

Installation diagram of wall-type side wind outlet

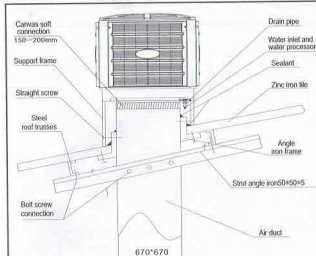


Technical Requirements

1. The welding and installation of the triangle bracket must be solid.
2. The mounting frame should support the weight of the unit and the maintenance personnel.
3. Unit installation should comply with the standard of GB50275-98, the deviation of the level should not be bigger than 1/1000.
4. duct must do the water-proof treatment.

WARNING:
In order to avoid damage or any quality accident to the unit, please install the unit according to the Technical Requirements and schematic diagram.

The installation illustration of the unit on zinc iron tile roof

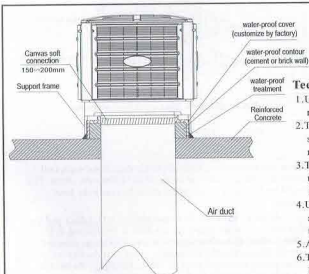


Technical Requirements

1. The intensity of the roof trusses should support the weight of the unit and the maintenance personnel.
2. The open size of the roof should not be bigger than air duct installation size of 20mm. (As the picture shown)
3. Unit installation should comply with the standard of GB50275-98, the deviation of the level should not be bigger than 1/1000.
4. All the openings must do the water-proof treatment.
5. The four sides of the unit must be fastened by support frame.

WARNING:
In order to avoid damage or any quality accident to the unit, please install the unit according to the Technical Requirements and schematic diagram.

The installation illustration of the unit on cement roof



Technical Requirements

1. Use 40*40*4 angle iron connect with reinforced concrete.
2. The intensity of the roof trusses should support the weight of the unit and the maintenance personnel.
3. The open size of the roof should not be bigger than air duct installation size of 20mm. (As the picture shown).
4. Unit installation should comply with the standard of GB50275-98, the deviation of the level should not be bigger than 1/1000.
5. All air duct must do the water-proof treatment.
6. The four sides of the unit must be fastened by support frame.

WARNING:
In order to avoid damage or any quality accident to the unit, please install the unit according to the Technical Requirements and schematic diagram.

Remarks:

- Instruction Manual

Shock-proof foot

Angle iron

M10 screw $\phi 10$ flat passing
(both up and down sides)

	A	B
iAC-18 series	890	1510

Shock-proof installation

- Instruction Manual

Trouble shooting

Malfunction	Reason	Solutions
1. The indicator doesn't light.	<ol style="list-style-type: none"> 1. No power. 2. Signal wire cut or incorrect connection. 3. Master control board goes wrong. 4. Air switch of Master control board is cut and fuse is burnt. 5. Panel goes wrong. 	<ol style="list-style-type: none"> 1. Supply electricity; check the circuit. 2. Change the Signal wire or adjust circuit. 3. Change the master control board. 4. Close the air switch or change the fuse. 5. Change the panel.
2. Out of control.	<ol style="list-style-type: none"> 1. Interfered by power. 2. Interfered by environment. 3. Panel goes wrong. 4. Control line is not connected well. 	<ol style="list-style-type: none"> 1. Power off, restart the machine. 2. Remove or keep far away from the interference. 3. Change the panel. 4. Connect the control line well.
3. Display normal, but without wind or wind speed is too low.	<ol style="list-style-type: none"> 1. The fan runs in reverse order. 2. The fan gets stuck. 3. Main contactor is damaged. 4. Water screen or dust-net is blocked. 5. Fan is distorted. 6. Main board goes wrong. 	<ol style="list-style-type: none"> 1. Adjust the phase. 2. Check the machine, fixing hoop and fan. 3. Change the contactor. 4. Clean or change water screen or dust-net. 5. Change the fan. 6. Change the main board.
4. The motor is out of control.	<ol style="list-style-type: none"> 1. The main magnet is damaged. 2. Main control board goes wrong. 3. The panel goes wrong. 4. The control line goes wrong. 	<ol style="list-style-type: none"> 1. Change the contactor. 2. Change the main control board. 3. Change the panel. 4. Change the control line.
5. Water lack indicator doesn't light, but the machine doesn't supply cooling air.	<ol style="list-style-type: none"> 1. Water level detector is out of control. 2. The water pump goes wrong. 3. The main control board goes wrong. 4. The panel goes wrong. 5. The control line goes wrong. 	<ol style="list-style-type: none"> 1. Change the water-level detector. 2. Change the water pump. 3. Change the main control board. 4. Change the panel. 5. Change the control line.
6. Water lack indicator lights, but the machine doesn't supply cooling air.	<ol style="list-style-type: none"> 1. No water in source. 2. The water can't pass through the inlet valve. 3. Main control board goes wrong. 4. Water-level detector is out of control. 	<ol style="list-style-type: none"> 1. Check the water source switch and water pressure. 2. Change inlet valve. 3. Change the main control board. 4. Change the water-level detector.
7. Water leak at draining valve.	<ol style="list-style-type: none"> 1. Inlet valve is damaged. 2. Draining valve is damaged. 3. The main control board goes wrong. 4. Water-level detector is out of control. 	<ol style="list-style-type: none"> 1. Change the inlet valve. 2. Change the draining valve. 3. Change the main control board. 4. Change the water-level detector.
8. Fail to power off.	<ol style="list-style-type: none"> 1. The indoor control board goes wrong. 2. The outdoor main control board goes wrong. 3. The main contactor goes wrong. 	<ol style="list-style-type: none"> 1. Change the indoor control panel. 2. Change the main control board. 3. Change the main magnet.
9. Wind throat leakage.	<ol style="list-style-type: none"> 1. Water pan leaks. 2. Wind throat is not well closed. 3. Water screen or dust-net is blocked. 	<ol style="list-style-type: none"> 1. Repair or change the water pan. 2. Close it again. 3. Clean or change the water screen or dust-net.
10. Too noisy.	<ol style="list-style-type: none"> 1. Angle head bends too much. 2. Wind outlet is too small. 3. Blades touch the cover or are distorted. 4. Wear the axle bearing of motor. 	<ol style="list-style-type: none"> 1. Redo the angle head or put some acoustic material. 2. Enlarge the wind outlet to the standard. 3. Change or adjust the fan blade. 4. Change the motor.

Note: The form is only for reference. Any help needed, please turn to the distributor or manufacturer.