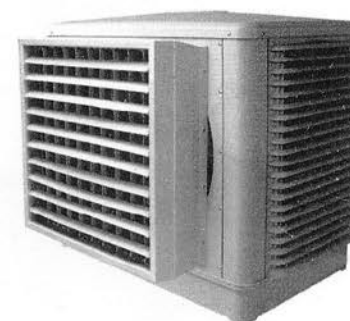
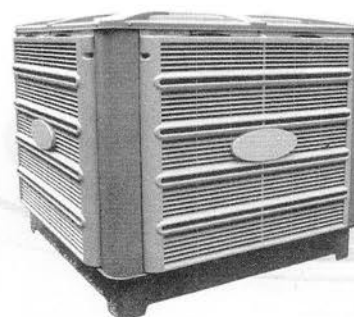


Evaporative Air-Cooler Units

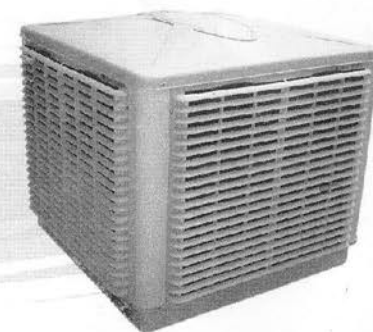
KD12/18、KS10/12/15/18、KT18 Operation Manual



KS10B



KD18A



KS18A

Patented product(s), counterfeiting forbidden.

Statement: All rights reserved, copy is not allowed.

The company reserves the right to change the product design and the specification without further notice.

Passed ISO 9001: 2008
International Quality System Certificate

Accessories List

KD12A/12B/18A/18B/18C KS10B/12B/15B/18A/18B/18C Units Accessories List					
N0.	Name	Specification	Unit	Quantity	Note
1	Shockproof foot	M10	Piece	4	
2	Nut	M10	Piece	8	
3	Pats	Ø10	Piece	8	
4	Spring washer	Ø10	Piece	4	
5	Soft water pipe	1/2 inch*80cm	Piece	1	
6	Copper gate valve	1/2 inch	Piece	1	
7	Plastic filter	1/2 inch	Piece	1	
8	Certificate of conformity		Piece	1	
9	Control box		Piece	1	
10	Operation instruction		Piece	1	
11	Female adapter	1 inch	Piece	1	

KT18A/KT18B/KT18C Units Accessories List					
N0.	Name	Specification	Unit	Quantity	Note
1	E type plastic cushion	1m	Piece	4	18a2/18c2series
2	E type plastic cushion	1m	Piece	2	18b series
3	E type plastic cushion	1.4m	Piece	2	18b series
4	Soft water pipe	1/2 inch*80cm	Piece	1	
5	Copper gate valve	1/2 inch	Piece	1	
6	Plastic filter	1/2 inch	Piece	1	
7	Female adapter	1 inch	Piece	1	
8	Certificate of conformity		Piece	1	
9	Control box		Piece	1	
10	Operation instruction		Piece	1	

Attention:

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

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.

Content

Accessories List

Preface

Content

Basic principle and application	1
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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.

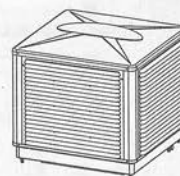
Application

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.

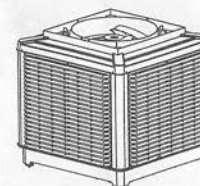
Unit model and air supply mode

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



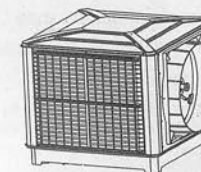
KS18A

(Air supply from the bottom)
(Injection moulding bottom)



KS18C

(Air supply from the top)
(Injection moulding bottom)



KS15B/KS18B

(Air supply from one side)
(Injection moulding bottom)

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)	Power consumption (KW)	Water capacity (L)	Outer Size LxWxH (mm)	Size of Air Orifice (mm)	Weight (kg)	Noise DB(A)
KS10B	10000	0.75	27.5	1100x800x950	670x670	50	≤73
KS12B	12000	0.75	45	1170x1100x950	670x670	62	≤73
KS15B	15000	0.75	45	1170x1100x950	670x670	58	≤73
KS18A	18000	1.1	25	1100x1100x1000	670x670	65	≤75
KS18B	18000	1.1	45	1170x1100x950	670x670	62	≤75
KS18C	18000	1.1	45	1100x1100x1020	735x735	65	≤75
KT18B	18000	1.1	50	1560x1090x1075	670x670	100	≤75
KD12A	12000	0.75	25	1115x1115x950	670x670	62	≤73
KD12B	12000	0.75	45	1170x1115x950	670x670	63	≤73
KD18A	18000	1.1	25	1115x1115x950	670x670	62	≤75
KD18B	18000	1.1	45	1170x1115x950	670x670	63	≤75
KD18C	18000	1.1	45	1115x1115x1020	735x735	68	≤75
KS18Y	18000	1.1	45	1185x1100x1950	900x600	110	≤75

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

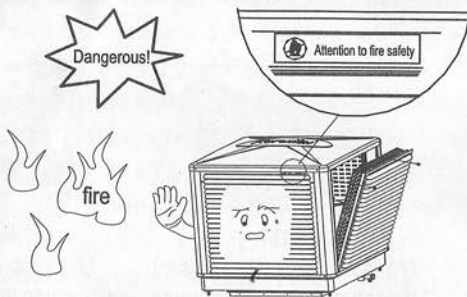
Cautions

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

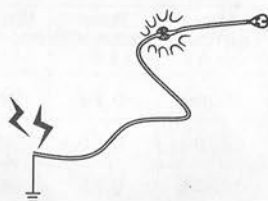
Running the unit correctly under the following items:

- Environmental temperature : 18-45℃.
- Environmental relative humidity: ≤85%.
- Atmospheric pressure: 86KPA-106KPA.
- The supplied water should be soft water, water temperature ≤45℃, 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 "Kerulal evaporative air cooler unit", the air cooling expert.

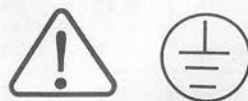


Keep far away from fire during transportation, installation and operation.

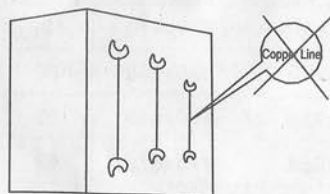


The wiring should be connected correctly and kept solid, keep away from mouse biting and overweight pushing, stretching, or changing of power cord and control wire.

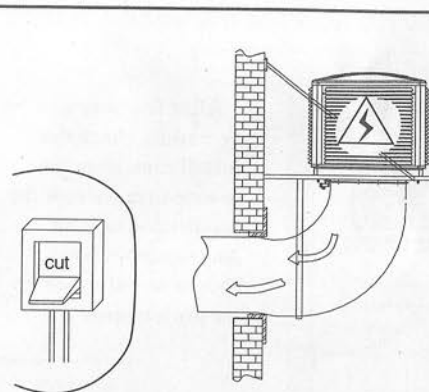
Power cord should be changed by the manufacturer or qualified personnel if there is damage.



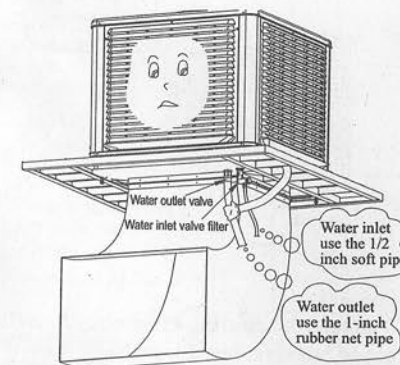
Grounding: Must be touched to ground! Grounding wire must be connected with the specially grounding board device of the building!



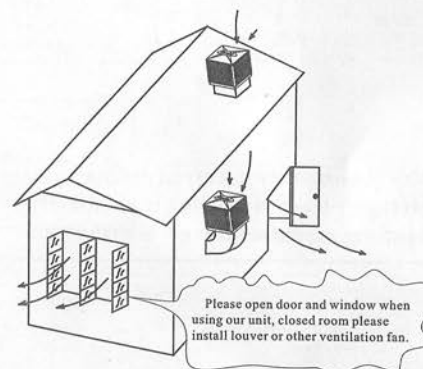
Don't use the incorrect fuse or other metal fuse, it might cause fire.



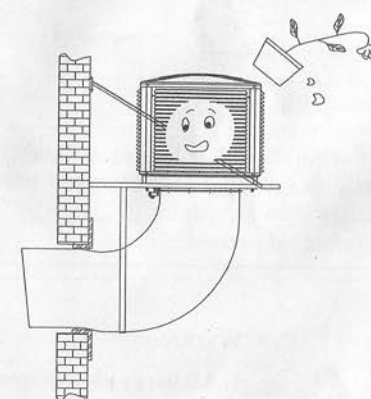
Don't open or repair the unit when it is working, make sure power supply is off before repair and maintenance.



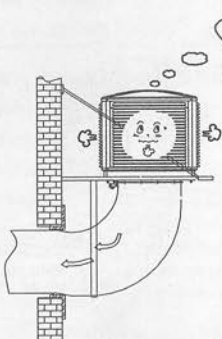
Please ensure the water inlet pipe and the water outlet pipe both in good connection, water leakage will cause damage.



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

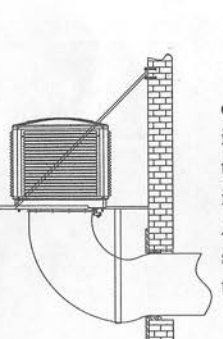


Don't stand or sit on the unit or put other things on it, it might cause damage.

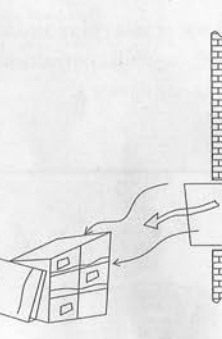


The air quality is so bad, please give me an additional filter net.

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

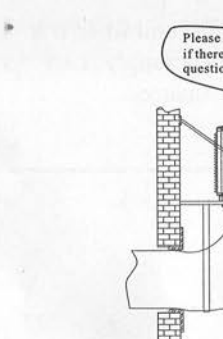


After few year's operation, check the installation from time to time to make sure the installation is solid. Any security risks should be informed to the professional



Please call us if there is any question.

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 : one

Negative ion
Only for models with ion function

Water shortage warning
When the water level is lower than normal level, the indicating light will flicker, and the pump stop working.

Wind swing
Only for models with wind swing function.

Malfunction
The indicating light will be on when malfunction.

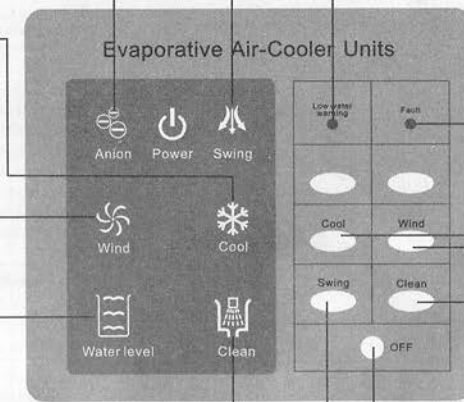
Cooling button
The pump work for 1 minute, then the fan will operate when press the button.

Wind button
The fan will work when press the button

Cleaning button
The machine will clean when press the button, and press it for 3 seconds to automatic cleaning, press again to stop.

Off button
The machine will turn off at any situation when press this button.

Evaporative Air-Cooler Units



Cooling
The indicating light will be on when cooling.

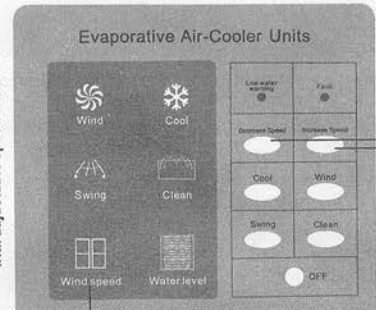
Operation of fan
The indicating light will be on when fan operate.

Water level
Water level will be showed by indicating light.

Cleaning
The indicating light will be on when cleaning.

Swing button
The swing will run left and right when press the button, and press again to stop; it's only for models with wind swing function.

Evaporative Air-Cooler Units



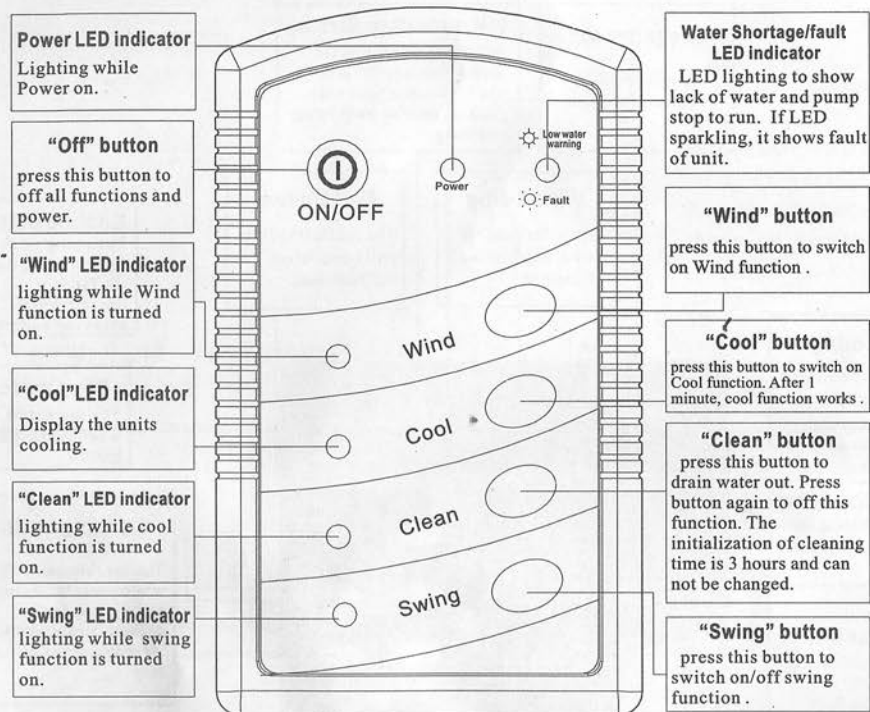
Speed-down button
Press the key, decreasing the air speed.

Speed-up button
Press the key, increasing the air speed.

Wind speed
Display the wind-speed.

Remark: The display panel of adjustable unit is different with non-adjustable unit, please see picture above-mentioned.

Operation illustration of control panel : two



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 lever 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.

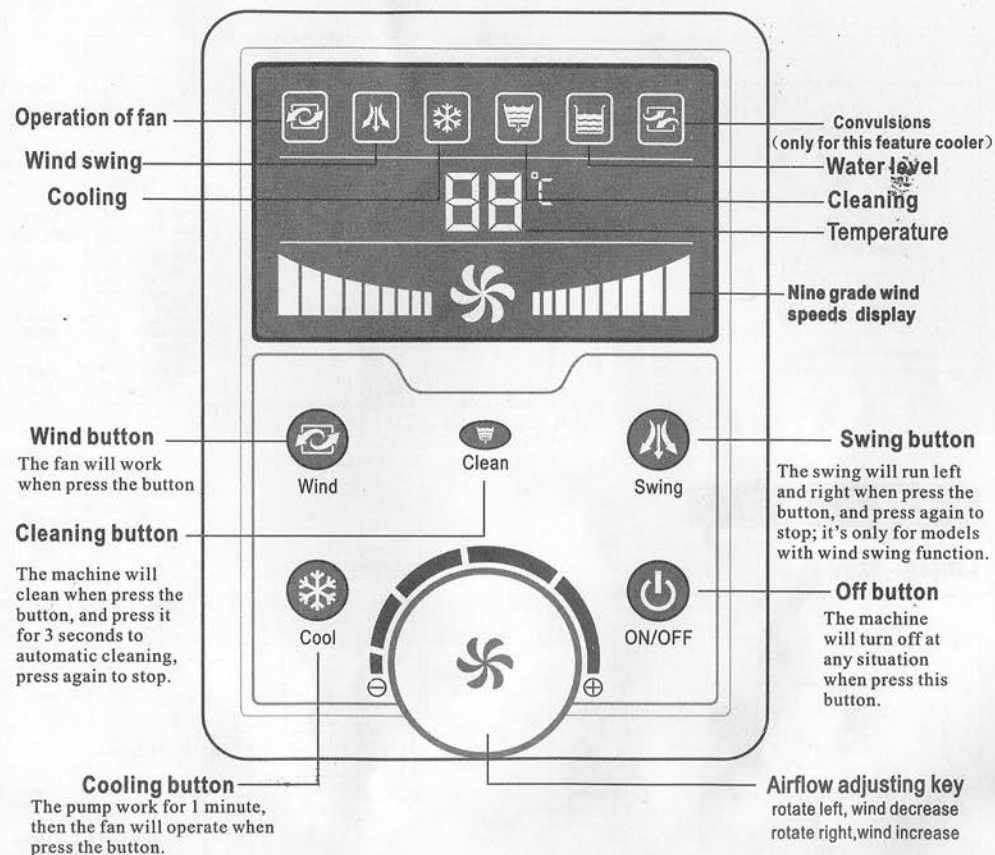
Air cooler unit protection function :

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 :

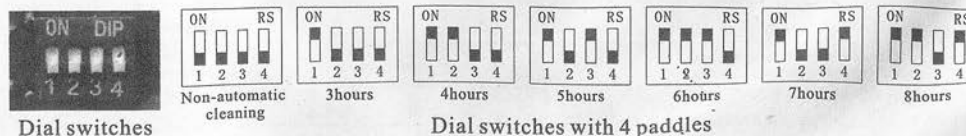
Under Cool or Wind condition, Fault LED is sparkling to show lack of current. If both Fault LED indicator is sparkling

Operation illustration of control panel : three



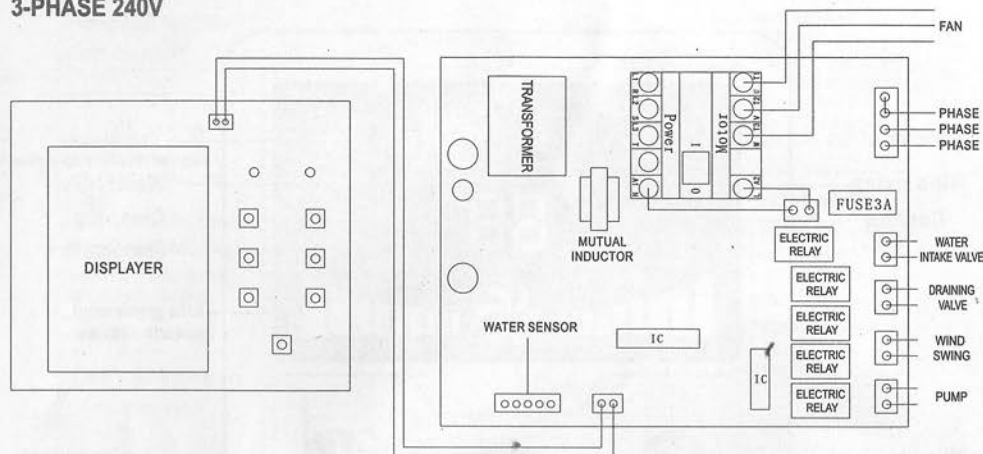
Instructions for automatic cleaning

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 charter below. Please cross-set the cleaning time if more than one machine installed.



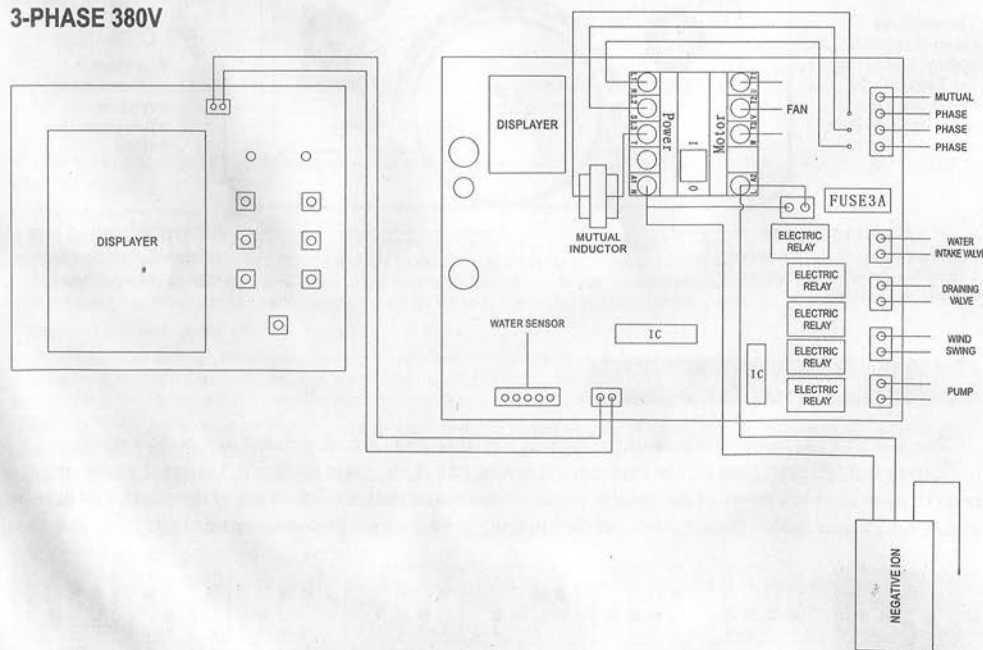
CIRCUIT DIAGRAM : ONE

3-PHASE 240V



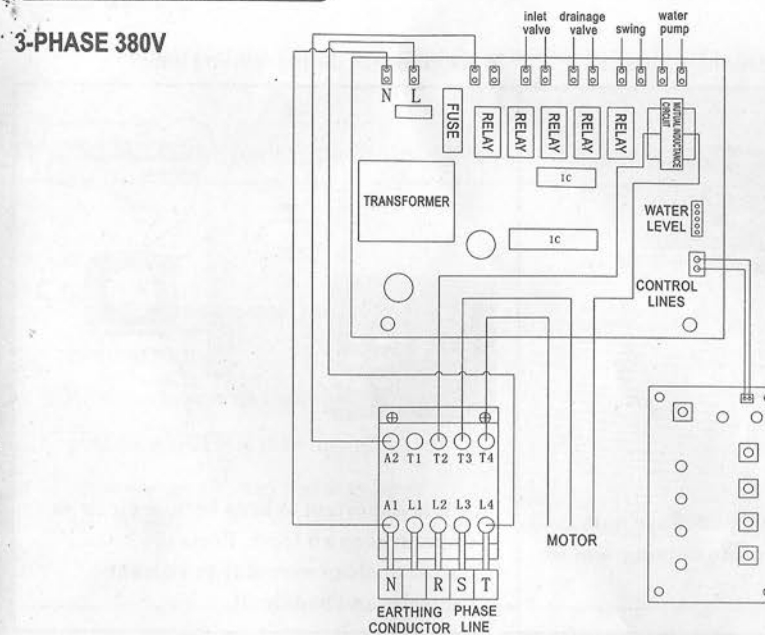
CIRCUIT DIAGRAM : TWO

3-PHASE 380V



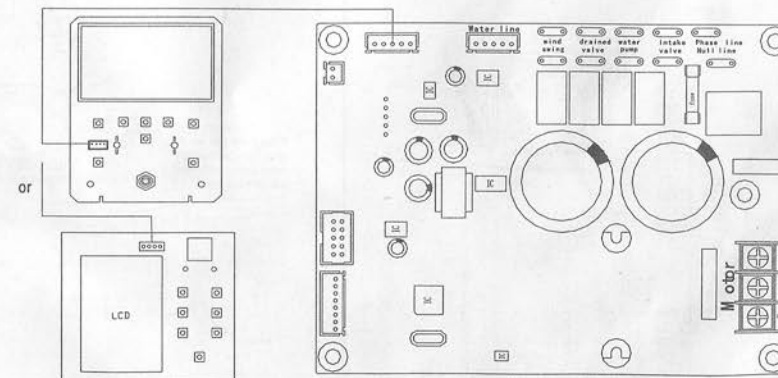
CIRCUIT DIAGRAM : THREE

3-PHASE 380V



Circuit diagram of machine with speed adjuster : four

SINGLE PHASE 240V



Dangerous!
High voltage!

High voltage inside,
do not open if not professional
personnel!!

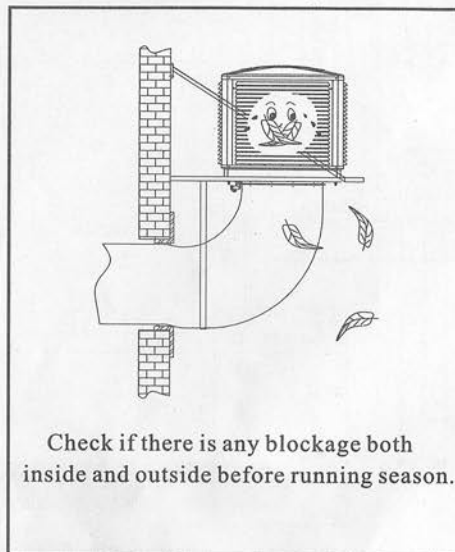
Warning

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!

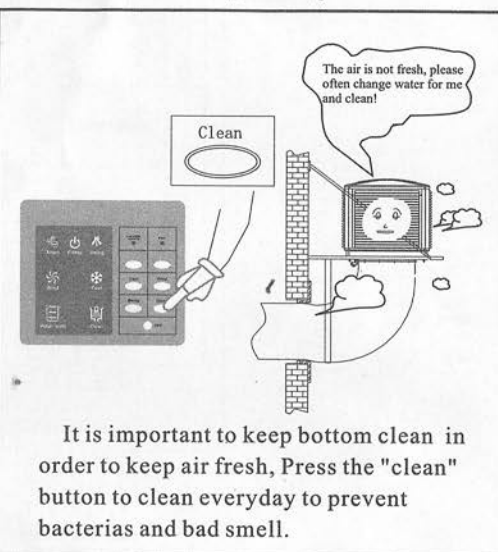
Attention: Single phase should be connected
with air-break switch, and plug is forbidden.
(Only for reference, for details pls refer to switch box)

Maintenance

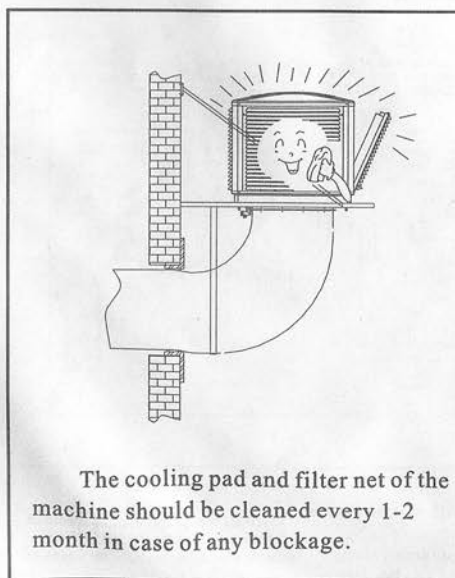
A. Maintenance before running season



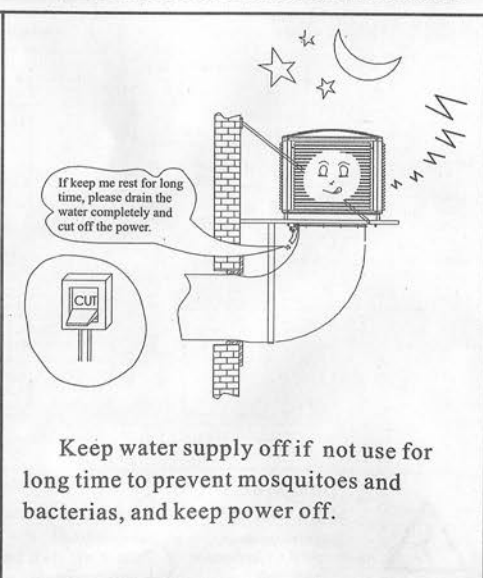
B. Maintenance during running time.



C. Maintenance from time to time



D. Maintenance at the end of service season

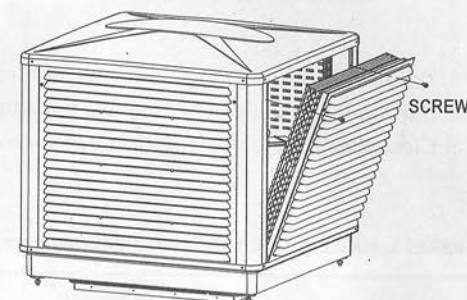


E. Inside cleaning

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

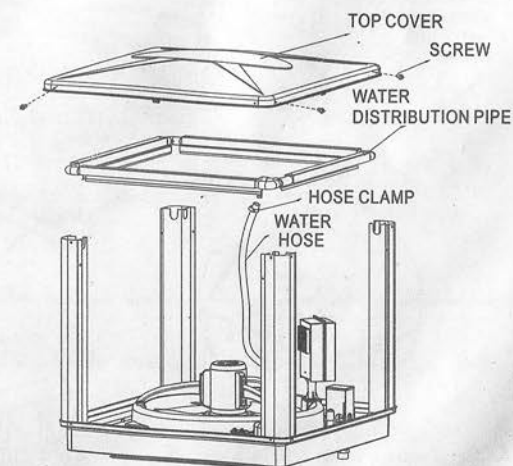
First: uninstall the cooling pad(total 4 pieces and regardless of order)

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.

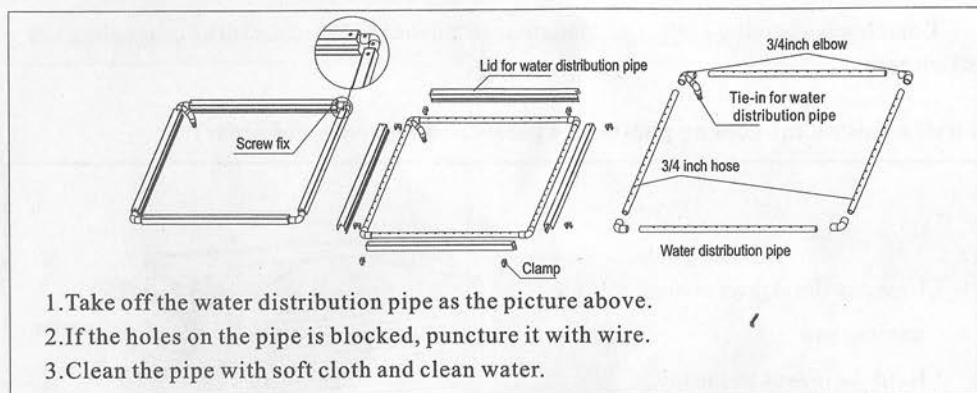


Second: Uninstall the top cover and water distribution pipe.

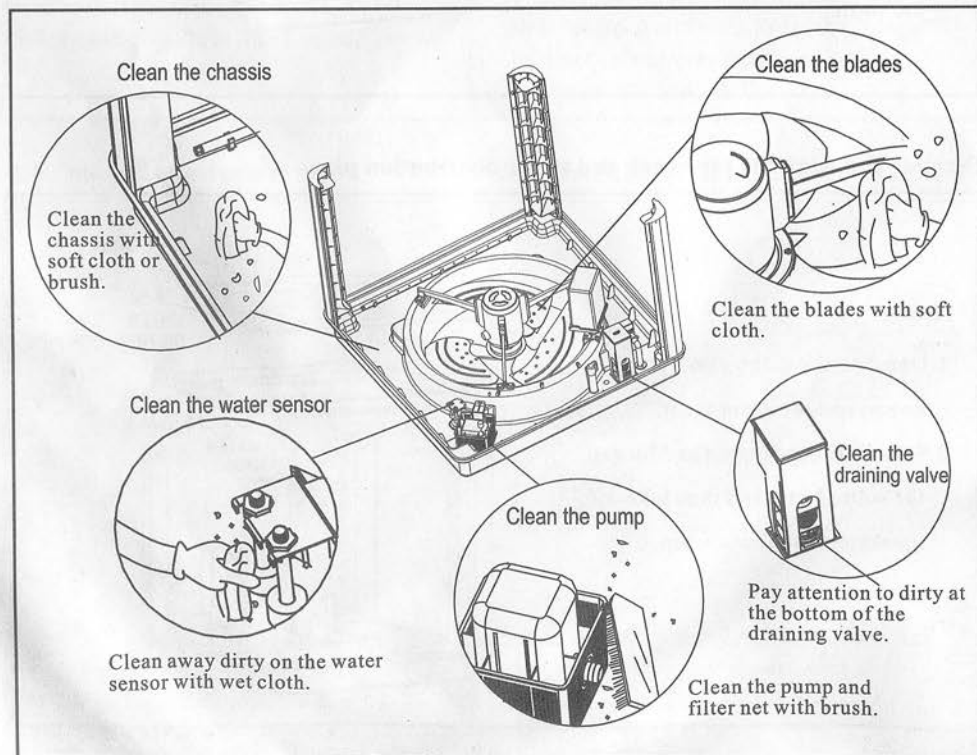
1. Unscrew the screws on the top cover, and then remove it.
2. Screw off hose clamp and loosen the water hose, and then take off the water distribution pipe.



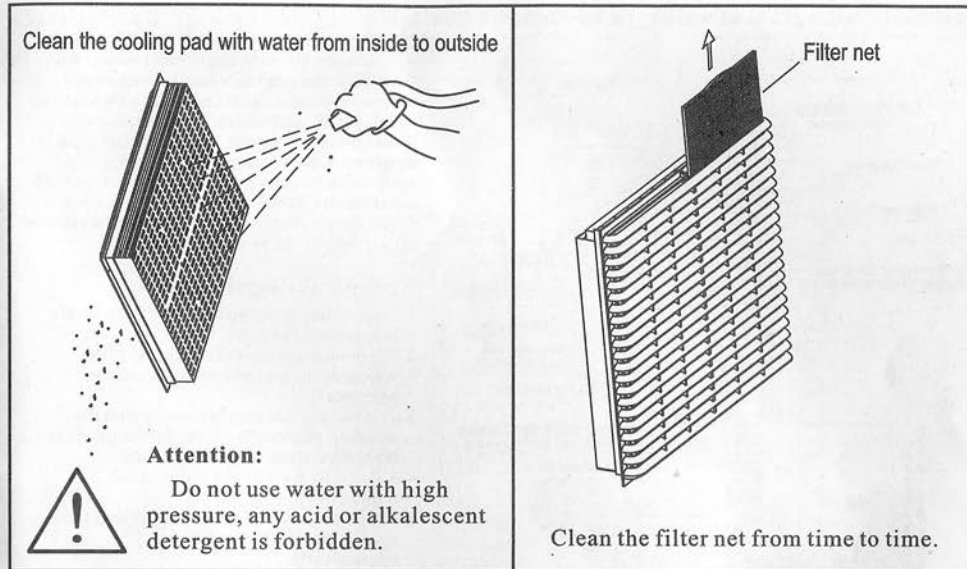
Third: Cleaning of water distribution pipe



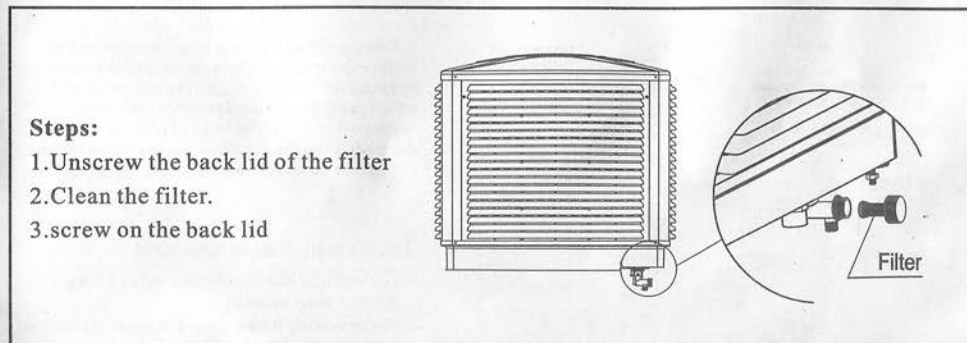
Fourth: Cleaning of chassis and accessories.



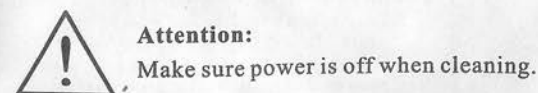
Fifth: Cleaning of cooling pad



Sixth: Cleaning of water filter

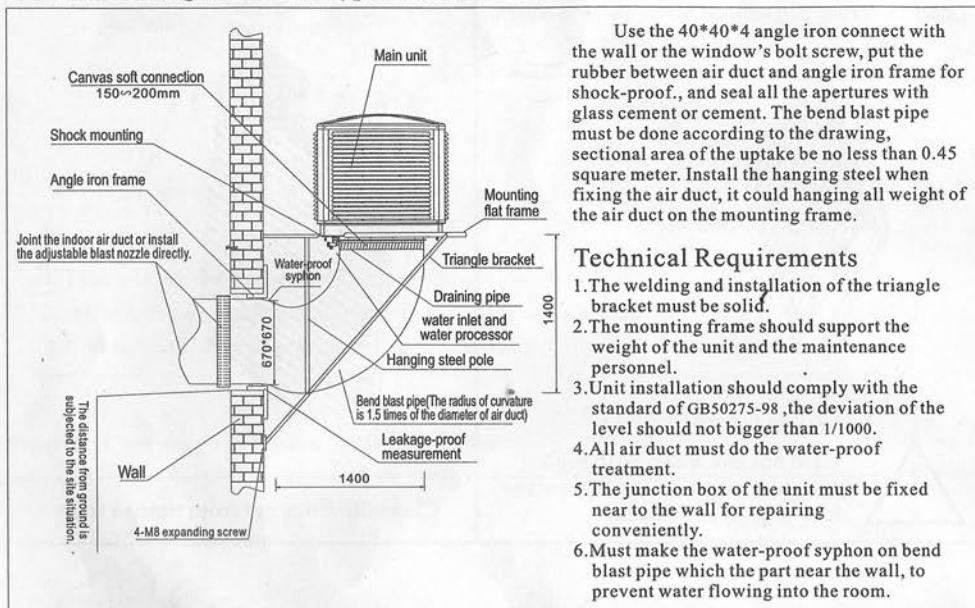


Seventh: Assemble the machine according to the converse sequence of disassembly.



Installation diagram of the unit

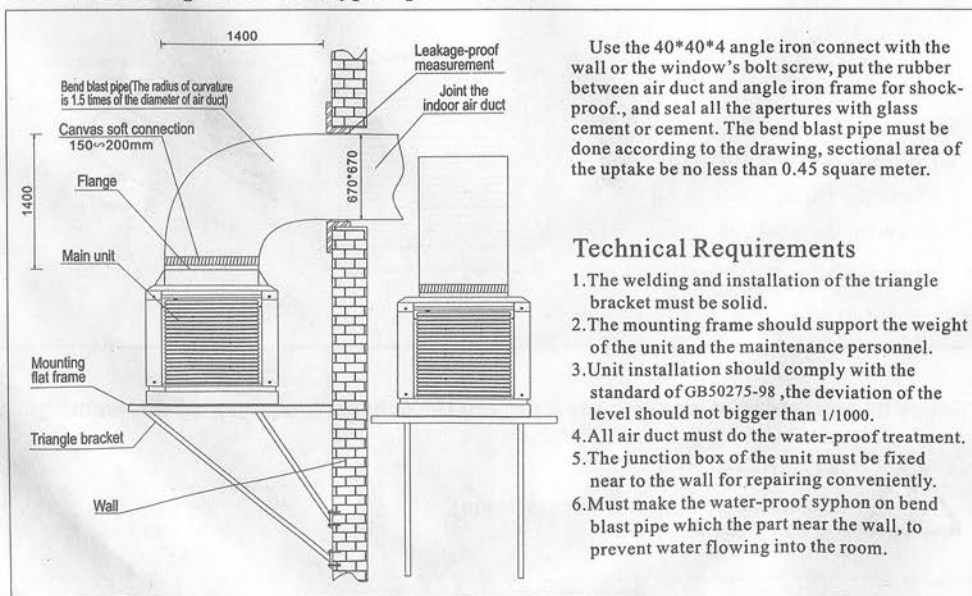
Installation diagram of wall-type Bottom wind outlet



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 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.

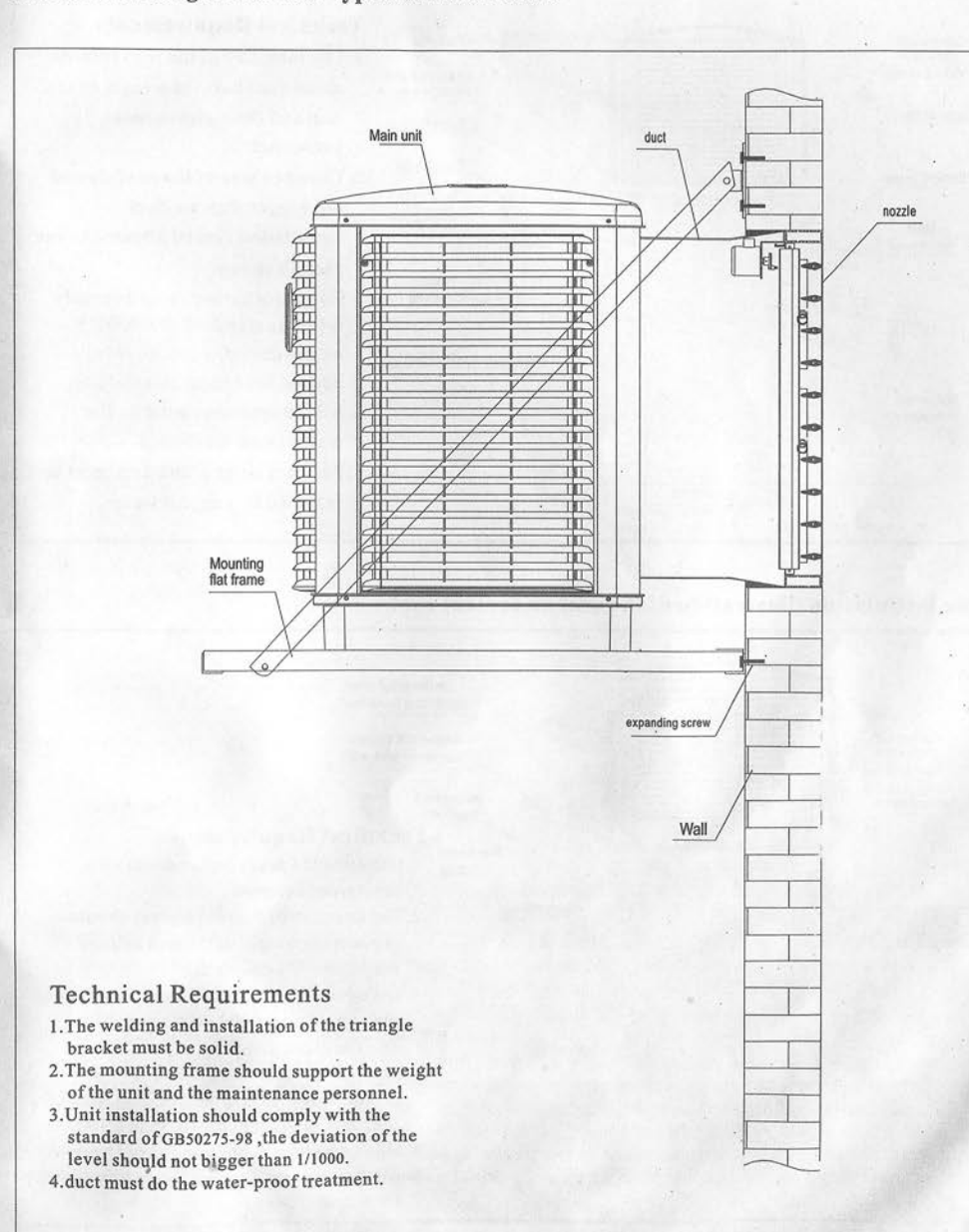
Installation diagram of wall-type top wind outlet



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.

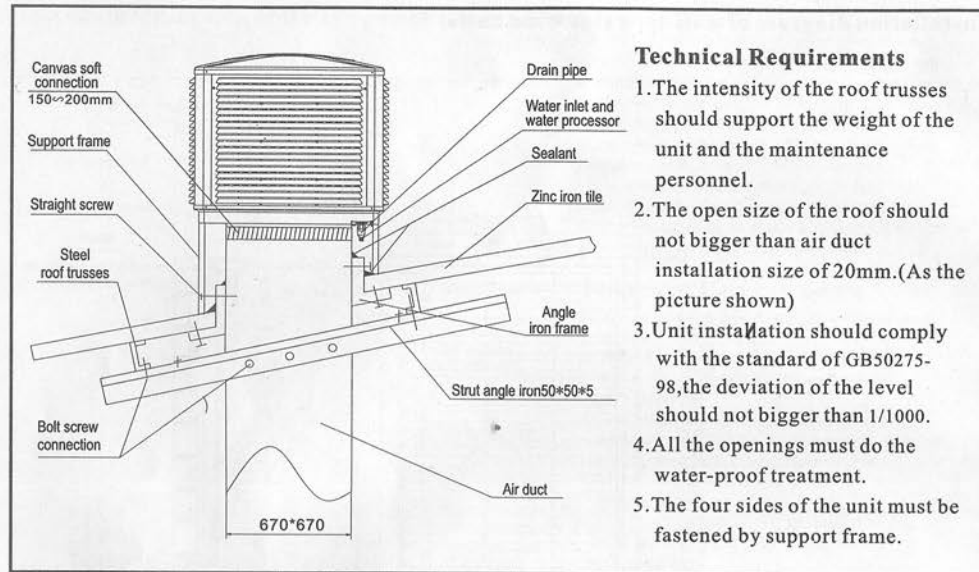
Installation diagram of wall-type side wind outlet



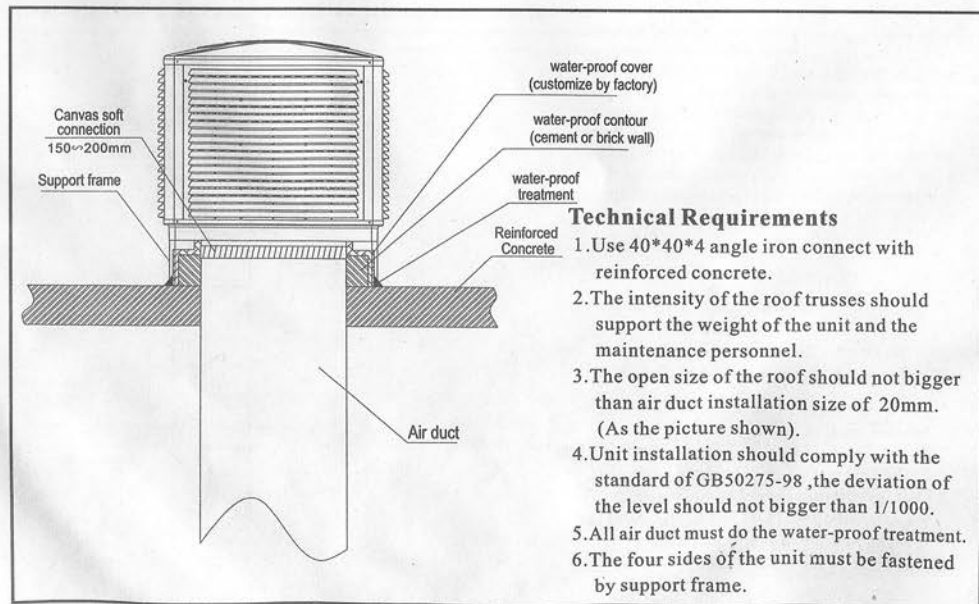
Technical Requirements

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 bigger than 1/1000.
4. duct must do the water-proof treatment.

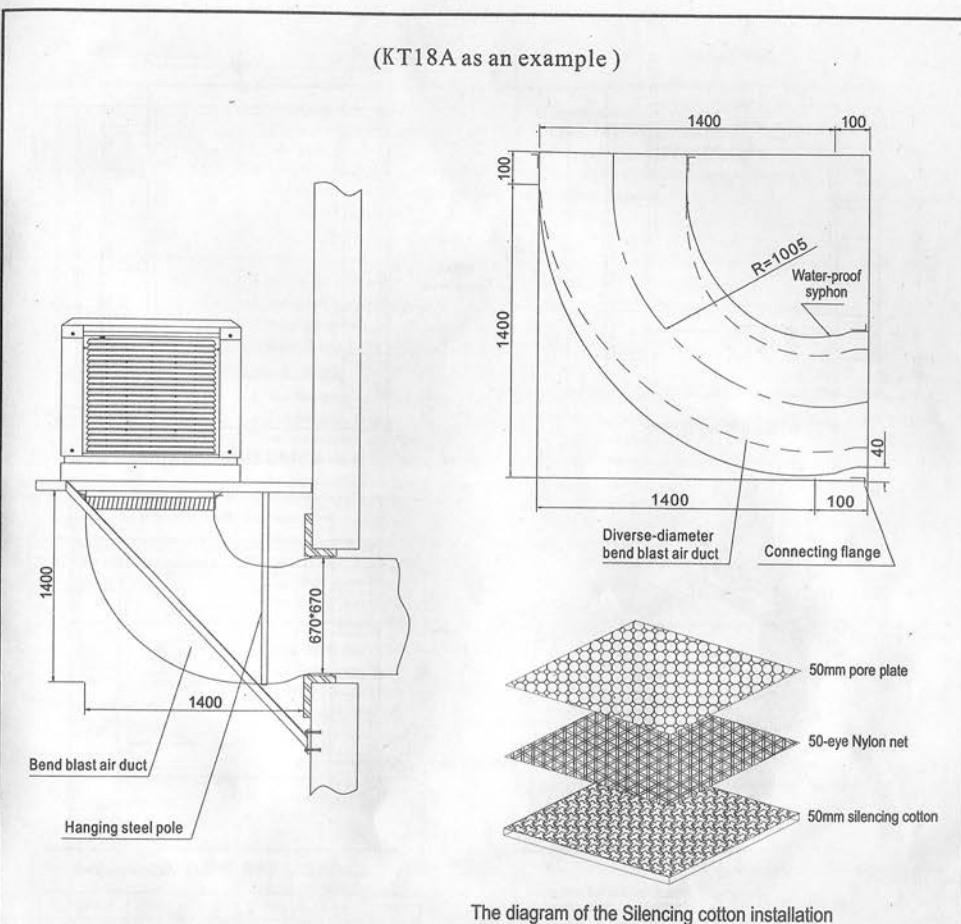
The installation illustration of the unit on zinc iron tile roof



The installation illustration of the unit on cement roof



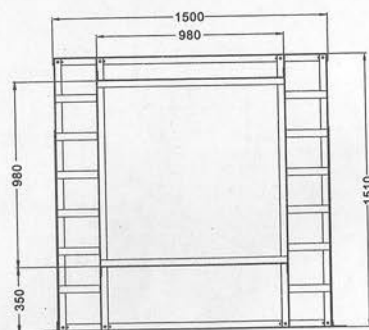
Specification diagram of the air duct



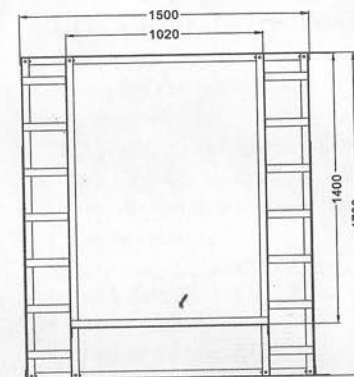
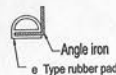
Remarks:

1. To ensure the minimal venting resistance, the curvature radius of the air duct from main unit should be 1.5 times of the air duct diameter. Use the material in the 1500*1500 steel sheet. The indoor air duct's curvature radius should be 1.5 times of whole air duct. To reach the best venting effect as comply with this method.
2. Under the principle of wind power concentrating on about three meters area of air duct and the wind power and wind pressure forming the airflow to impact the air duct and resulting in the noise, should make silencing measure that paste silencing cotton or fireproof sponge on the internal surface on the two to three meters forepart of the connecting inside air duct to increase the silencing acreage and to get rid of the prime mover of wind pressure swashing the air duct. Otherwise, to install the silencing cotton in the out-side air duct as the common installing procedure.

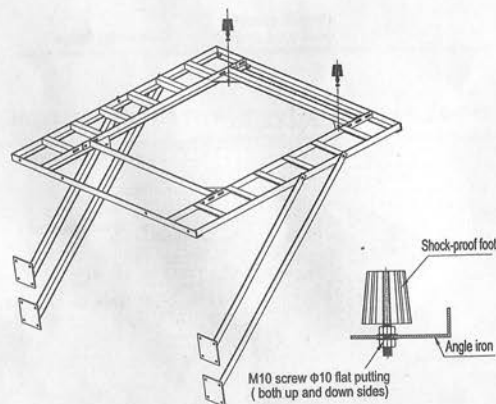
The diagram of the bottom frame and the shock-proof foot



KT18A Mounting frame



KT18B Mounting frame



KD12/18/KS12/KS15/KS18 Mounting frame

	A	B
KS10	513	1300
KS12/KS15/KS18/KD12/KD18	890	1510

Shock-proof installation

1. Plastic chassis use shock-proof foot, adjust the horizontal position of the unit by the angle iron's M10 screw.
2. The center distance of the shock-proof foot must be correct, in order to avoid the deformation of the unit's chassis.
3. "e" type rubber pad is used to make the stainless steel chassis shock-proof, put the "e" type rubber pad into the angle iron.

Troubleshooting

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 brocked. 5. Fan is distorted. 6. Main board goed 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 though 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 inside 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.