



OWNER'S MANUAL AP30

READ AND SAVE THESE INSTRUCTIONS



Read all instructions carefully before setting up and operating this unit. This manual is designed to provide you with important information needed to setup, operate, maintain, and troubleshoot your cooler. Due to continuous research and development the specifications herein are subject to change without notice.



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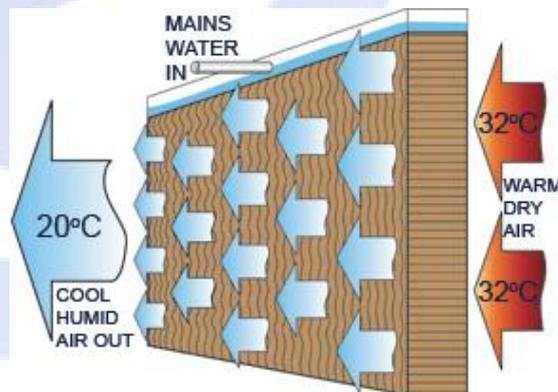
1. Check before operation:

1. Is the cooler installed horizontally?
2. Is there any foreign object in the sump?
3. Is the water supply leaking?
4. Is the power supply connected correctly (particularly for three phase machine)?
5. Is the voltage correct?
6. Is the operation current within the rated range?
7. Is the signal cable connected with wall controller correctly?
8. Is there foreign object in the vent?
9. Does cooler vibrates noticeably while operating?
10. Is drain pipe connected to the machine?

2. PRINCIPLE: How Evaporative cooling works

Evaporation cooling is to cool and humidify air by water evaporation to absorb heat. Do you ever wonder why you feel cooler by the ocean? It is because hot air is blown over water causing some of the water to evaporate and absorb heat. Evaporative air cooler working this evaporation principle.

In an evaporative cooler a circulation pump keeps the cellulose filter pads fully soaked. As warm air passes over wet filter pads water naturally evaporates into the air. The air is cooled as it gives up the heat required to evaporate the water.



3. SPECIFICATIONS

APSERIAL	Down discharge			Top discharge			Side discharge		
	25AP1	30AP1	30AP2	25AP1-T	30AP1-T	30AP2-T	25AM1-S	30AP1-S	30AP2-S
Item	25AP1	30AP1	30AP2	25AP1-T	30AP1-T	30AP2-T	25AM1-S	30AP1-S	30AP2-S
Airflow (cmh)	25000	30000		25000	30000		25000	30000	
Pressure (Pa)	250	300		250	300		250	300	
Cooling area (m ²)	150~220	200~250		150~220	200~250		150~220	200~250	
Power	2.2kw	3kw		2.2kw	3kw		2.2kw	3kw	
Noise	≤78db								
Water tank	60L								
Water consumption	25-30L/H								
Net weight	115kg								
Load quantity (FULL) per 20'/40'	8pcs/16pcs								
Load quantity (SKD) per 20'/40'	16pcs /32pcs			--			--		
Dimension	1350*1350*1200mm			1350*1350*1200mm			1350*1350*1200mm		
Vent size	900*900mm			900*900mm			900*900mm		
Phase	3	3	3	3	3	3	3	3	3
Speed	1	1	2	1	1	2	1	1	2
Wall controller	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD
Remote control	●	●	●	●	●	●	●	●	●
Auto water drain	●	●	●	●	●	●	●	●	●
Overload protection	●	●	●	●	●	●	●	●	●
Pump protection	●	●	●	●	●	●	●	●	●
Thermostatic	option	option	option	option	option	option	option	option	option

4. Parts

4.1 Motor:

- To drive the fan



4.2 Water level probe:

- Sense the water level
- If probe only has one float, it is to protect water pump from running without water in tank. When water level is lower than required, it will send signal to MCU and stop water pump.
- Two floats switch has another function besides protect pump. If there is no water in the tank, it will send signal to MCU, to open solenoid valve to let water in.

4.3 LCD Controller and remote control:



- To operate the cooler. The white LCD controller shall be fixed on the wall. The LCD controller can receive signal from infrared remote.
- Detailed operation of wall controller is referred in chapter 11

4.4 Drain valve:

- To drain water out



4.5 Inlet valve:

- Mechanical float valve. To let water in as long as water level is lower than set
- Note: Shut-down Clean function is not available if with mechanical float valve.



4.6 Water pump:

- Pump the water to wet the pads

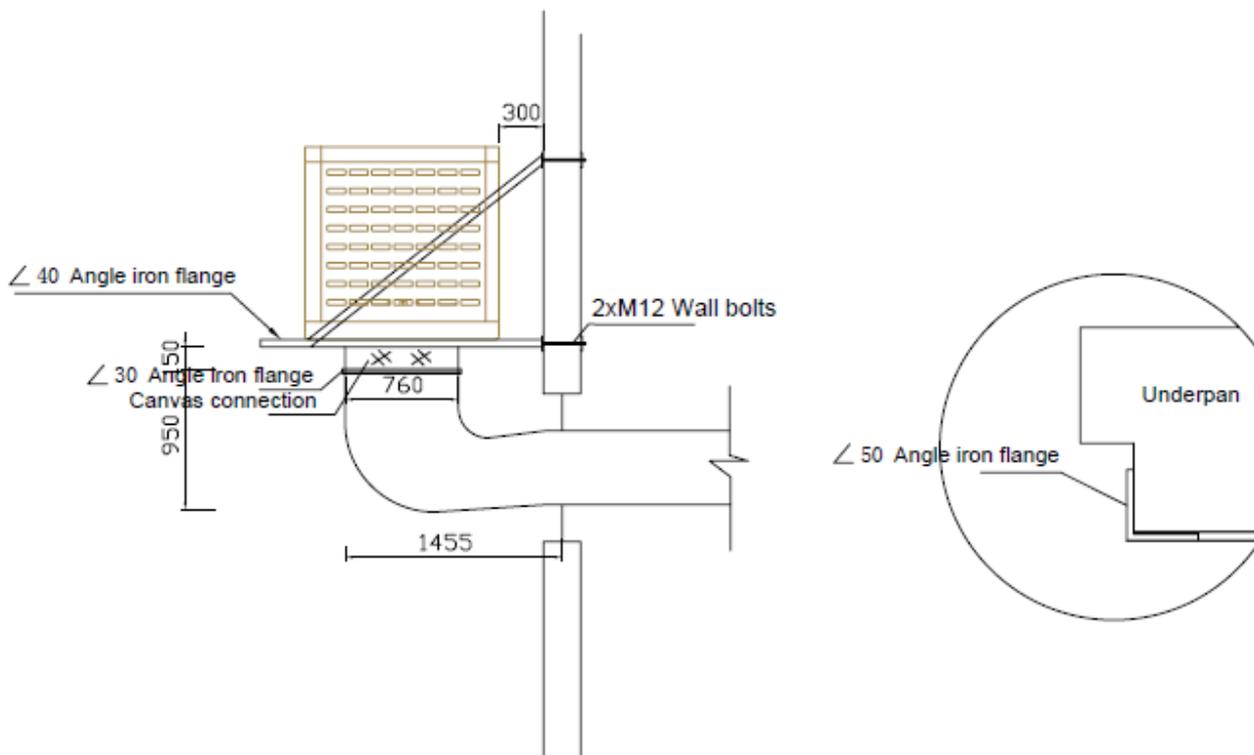
5. Important Notes

1. The best effect is achieved when the unit is used in a well ventilated and dry place, where the unit takes in 100% fresh air from outside and no re-circulation occurs.
2. Avoid discharging cool air into a closed space. There must be enough space for discharged air, even use exhaust fans
3. For a place without powered exhaust, 0.8m² of exhaust area is needed for every 3600m³/h air discharge. When using a powered exhaust, the designed exhaust volume shall not be less than 85% of air intake.
4. Keep the unit away from any source of fire. Especially keep the unit away from welding sparks during installation.
5. The unit must be tested and adjusted. E.g.: adjusting water level floats before operation. Ensure that

the unit is operating within the rated electrical currency.

6. Ensure correct wiring of the power and controller. The section in the power socket shall not be less than 1.5mm². The units shall use a dedicated power line instead of sharing a power line with other equipments.
7. Voltage of power supply shall be within 10% vibration from the rated voltage. Lower voltage may cause motor start failure or undue frequent starts and stops. Long-term low voltage or high voltage will cause damage to the motor. Keep the voltage only between 210-250v.
8. The controller and its wire shall be kept away from strong electronic and magnetic interference, such as frequency converter, silicon speed and temperature controller, high frequency heater circuit or high power motor. Avoid wiring the power supply lines parallel to these cables. In the case of unavoidability, the power line must maintain a distance of more than 30cm from parallel interference source.
9. The water must be clean, tap water is often used and water source pressure should more than 1.0kgf/cm.
10. There should be a stop valves in the hose and obligate a pine joint.
11. There should be a switch to prevent creepage. It also should avoid short circuit, overload and electric shock.

6. Installation instruction



6.1. Cooler can be installed on the outer wall, with a side diffuser (an electromotive swing air diffuser can be used to cover greater area);

6.2. Cooler can be installed on the roof, with a multi-side air diffuser penetrate through the roof and into the room;

6.3. One or more coolers can be installed on the roof or outer wall, each connected to a duct to deliver the cooled air evenly to the room or to the desired spot;

6.4 Tips for better duct work

(1).the duct uses zinc coated steel, glass steel and plastic duct also can be used.

(2).the air diffuser should be installed in the places where the temperature actual need to be cooled. It depends on volume and velocity to select the specification of the air diffuser. The air diffuser is made of aluminum, alloy or wood and the type can be selected according to the actual situation. We recommend both single and double deflection grille. The average velocity in the duct is supposed to be at 3-6m/s. The air draft can be controlled by a regulating valve.

(3).the specification of duct depends on flow velocity, the wind velocity in the main duct is kept at 6-8m/s while in the branch is 4-5m/s and 3-4m/s in the end.

- (4).the duct system is required to be economical and to be kept smooth as well as quiet, which makes the perfect air draft. To reduce flow resistance, the elbow's radius of curvature is not less than 1.5 times the width of duct.
- (5).the air duct should not be too long, the maximal length is 40m.
- (6).keep the duct in a straight line is much better. To reduce the pressure drop, some unnecessary elbow and branch should be refrained.
- (7).try to use motor driven diffuser in the plane layout. The air duct should be designed as short as possible in some places where air duct must be applied.
- (8).according to the volume air, different specification of the duct is used in different section.
- (9).the air duct and cooler should be connected with hose.
- (10).if there are branches in design, a valve and verge board can be used to control the air volume which reach the design requirement.

7. Maintenance

- (1).It is to be noted to change the water while the cooler is in work to avoid incrustation.
- (2).The filter pads should be cleaned more often to keep the cooling efficient. Do not use water above 40°C. Banister brush can be used softly to scrub away the dust on the pads.
- (3)The water supply should be shut off to avoid bacteria as well as cold weather. It is also recommended covering to protect the cooler in some dusty and snowy cities.
- (4).All the type of this series has the function of auto timing cleaning. (the cooler will operates auto cleaning function after accumulative 8 hours under persistence power supply.)
- (5).We recommend to clean the pad every month to keep the cooler under best condition. (No need for units with INTELLIGENT CLEAN)

8. Temperature decrease form of Evaporative air Cooler

Exit °C \ Intake air °C	Intake air Relative humidity(%)								
	10	20	30	40	50	60	70	80	90
10	3.2	4.0	4.8	5.6	6.4	7.2	8.0	8.6	9.4
15	6.6	7.8	8.8	9.8	10.8	11.7	12.6	13.4	14.3
20	10.1	11.4	12.8	13.9	15.2	16.2	17.2	18.2	19.2
25	13.4	15.0	16.6	18.0	19.4	20.6	21.8	22.9	24.0
30	16.6	18.6	20.4	22.0	23.6	25.0	26.4	27.7	28.9
35	19.8	22.2	24.2	26.2	28.0	29.6	31.0	32.4	33.7
40	23.0	25.6	28.1	30.4	32.3	33.9			
45	25.9	29.2	32.0	34.3					
50	29	32.7	35.8						

9. Troubleshooting

The following troubleshooting guide is intended to address the most common symptoms and is by no means exhaustive. If symptoms persist, call a qualified serviceman. Only a certified electrician should complete electrical work. Turn off all power to the cooler before attempting to troubleshoot any of following symptoms.

Number	Symptom	Cause	Action
1	Unit fails to start or deliver air	No electrical power to unit: A. Fuse blown B. Circuit breaker tripped C. GFCI tripped D. Cords unplugged or Damaged	Check power: A. Replace fuse B. Reset breaker C. Reset GFCI D. Plug in cord or replace if damaged
		Motor overheated	Try restart after cool down
		Motor frozen	Replace motor
		Capacitor aged. Symptom: Motor is able to free spin but does not run while press VENT.	Replace capacitor
2	Unit starts but air Delivery inadequate	Insufficient air exhausts	Open windows or doors
		Insufficient water-pad not wet: A. Cooling pads plugged B. Dry streaks on pads C. Large dry spots on pads D. Pump not working E. Loose water connections	Check water distribution system: A. Clean or replace pads B. Check water level C. Make sure cooler is level D. Clean or replace pump E. Check for leaks and correct
3	Musty or unpleasant odor	Stale or stagnant water in sump	Drain, flush and clean sump
		Pads mildewed or clogged	Replace pads
		Pads not completely wet before cooler is turned on	Turn on pump before starting fan
4	Knocking, shaking or rattling sounds	Loose parts	Check and tighten where needed
		Blower wheel loose or rubbing	Inspect and adjust, or replace
5	Water droplets in the discharge air stream	Too much water delivered to the cooling pads	make sure pads are properly positioned in the pad frames and The unit is level. If necessary, reduce the flow of water to the pads by tightening the screw on the hose restrictor clamp found on the pump discharge hose.
		Outdoor humidity level is too high or it is raining	Use cooler as a fan only (turn pump off) or discontinue use of cooler until outdoor humidity level drops.

10. Warranty

Our evaporative air cooler extends one year limited warranty to the original purchase of evaporative air cooler operated under normal conditions.

- I. One year coverage applies to all components and accessories furnished by Jinghui company. We supply a quantity of spare parts together with machines, these spare parts by way of one year limited warranty. At our option, we will exchange or repair part which fails due to non-conformance of material or workmanship during the first year from the date of initial purchase.
- II. What this warranty does not cover:
 1. This warranty does not cover any failure or damage resulting from unauthorized modification or service; or from the use of products or replacement parts other than those from Jinghui; including, but not limited to, motors and pumps.
 2. This warranty does not cover any damage or malfunction unless caused by a non-conformance in material or workmanship. Damage or malfunction which is not cover by this warranty includes, but is not limited to, water damage to the motor, abuse, misuse, alteration, improper installation / maintenance / operation, and transportation damage.
 3. Mineral accumulation, dirt and dust on the pad are not defects and are excluded from this warranty. Refer to the owners manual supplied with your cooler for maintenance instructions to help minimize these conditions.
 4. The warranty does not cover the cost of a service call at the site of installation to diagnose cause of trouble, the cost of labor to install the part, or mileage allowance to or from the site. Jinghui does not pay freight or postage on any exchange.
- III. Do not use cooler cleaner, cooler treatments, or other additives in this evaporative cooler. The use of any of these products will void your warranty and may impair the life of your evaporative cooler.
- IV. To obtain service under this warranty, contact the dealer where you purchased your evaporative cooler. As a final step, if you cannot locate your dealer, contact customer service on Jinghui company. Include your name, address and zip code, the model number and serial number of your evaporative cooler, date of installation, and a description of your problem.

This warranty is the only warranty extended by Jinghui to suppliers and/or purchases of this evaporative cooler. Jinghui disclaims all other warranties, express or implied that arise by the operation of the law, except that implied warranties of merchantability or fitness for a particular purpose are limit to the duration of the warranty period. Jinghui shall not be liable for any incidental or consequential damage which may have resulted from any alleged breach or warranty.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the limitations or exclusions stated above may not apply to you.

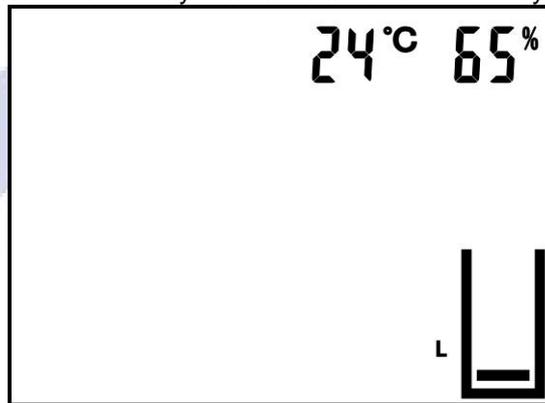
This warranty gives you specific legal right and you may have other rights, which vary from state to state. Since Jinghui company, follows a policy of continuous products improvement; it reserves the right to change design and specification without prior notice or liability.

11. Thermostat Wall Controller User Manual

1. Turn on/off

When the cooler is turned on, it will continue settings while last turn off. When cooler is turned on first time, or turned on after power cut, the LCD will display as follows.

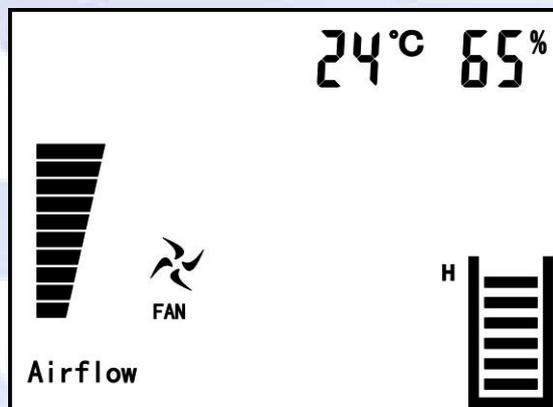
Note: after turn off, the cooler will automatically continue run 5 minutes to dry the pad. This is normal.



PIC 1-1 : turn on

2. VENT

VENT is to turn on the fan. The fan will run and blow air into room.

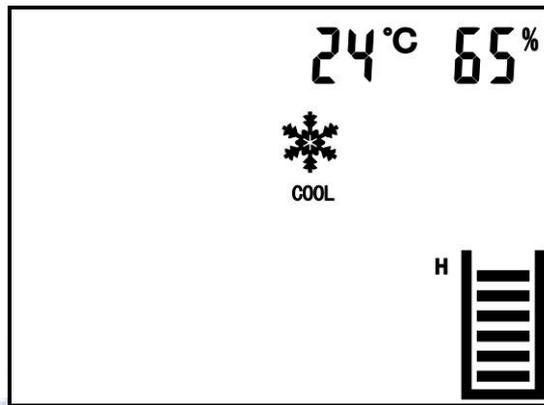


PIC 2-1 : VENT ON

3. COOL

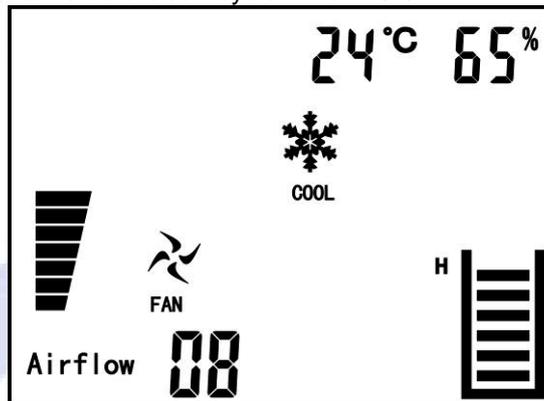
COOL is to control the water pump.

Press COOL to turn the water pump on. The water pump will lift water to the top of cellulous pad and wet the pad. While VENT on, the fan will run and suck air from outside. While fresh air through wet pad, it will accelerate water evaporation. Water evaporate and absorb heat from air. As a result, the fresh air will be cooled.



PIC 3-1 : COOL on

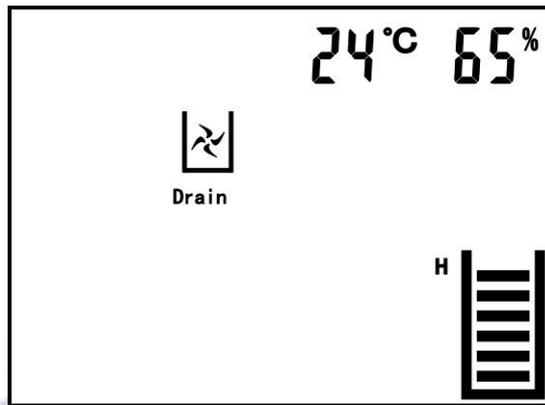
While COOL and VENT is on both, if the AUTO-CLEAN function is on, there will be a figure shown under the fan icon. This figure means auto-clean cycle. Like PIC 3-2.



PIC 3-2 : COOL, VENT and AUTO-CLEAN on

4. CLEAN (DRAIN)

CLEAN is to let the water drain out, and replace with new water.



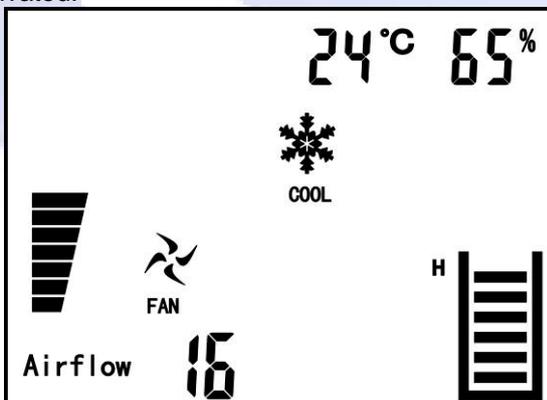
PIC 4-1 : DRAINING

4.1 Manual Clean

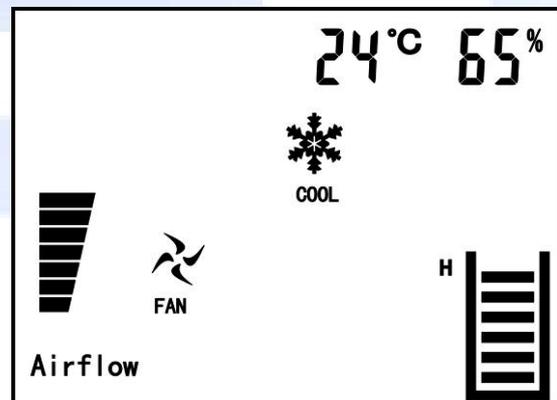
Press and key CLEAN (DRAIN) to let the drain valve open. It will continually open within 5 minutes. If the cooler will not run for long time, please cut off the water supply and drain all water out.

4.2 AUTO-CLEAN (AUTO-DRAIN)

While COOL and VENT are both on, you can set the auto drain cycle. It means the cooler will automatically drain water out in set hours. The set hour figure will be shown under the FAN icon on LCD. If press the CLEAN (DRAIN) key in 3 seconds, the figure will flash. Then you can press the CLEAN (DRAIN) key shortly to change the cycle. The unit is hours. If the figure is 0, the AUTO-CLEAN function is not activated.



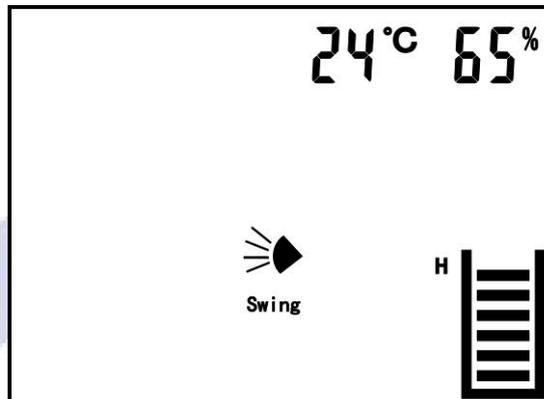
PIC 4-2 : SET 16 hours auto-clean



PIC 4-3 : AUTO-CLEAN not activated

5. SWING

There is one reserved socket for motor-driven auto-swing diffuser. You can press SWING function to control the swing motor.



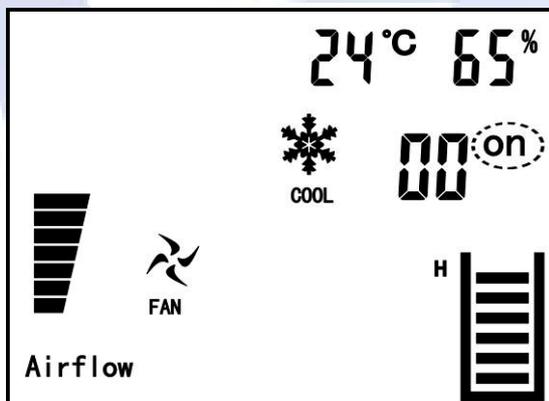
PIC 5-1 : AUTO SWING ON

6. TIMING

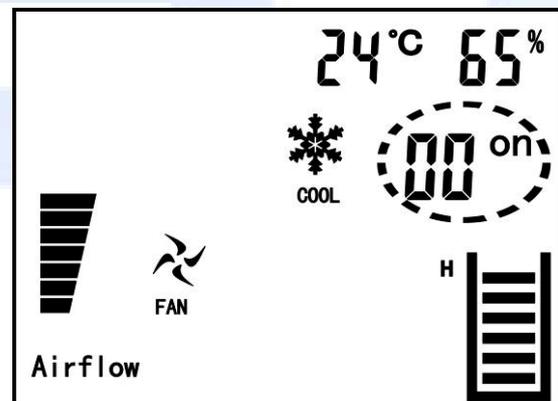
TIMING function can turn on/off the cooler automatically in set hours.

6.1 TIMING ON

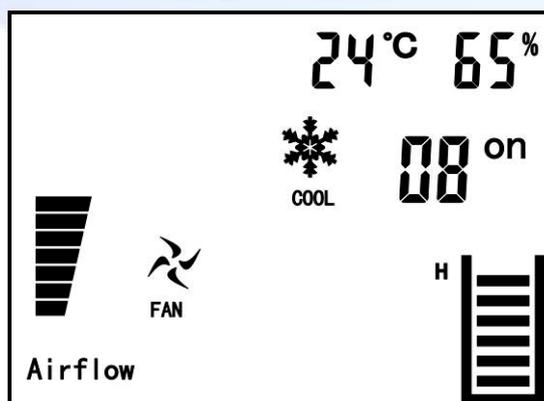
Press TIME to enter set function. When the ON is flashing, press the UP and DOWN keys to change the hours. In the end, press the TIME again to confirm the new set hour and end the set function. It is same process to set AUTO OFF.



PIC 6-1 :



PIC 6-2 :



7. THERMOSTATIC

THERMOSTATIC function is to let the cooler work, until the measured temperature or humidity reach set level.

NOTE: the temperature and humidity sensor is in the wall controller. Please install the wall controller in proper place.

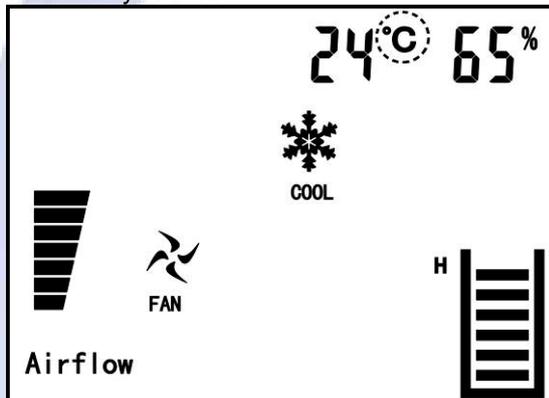
7.1 TEMPERATURE CONTROL

Press SET key to enter THERMOSTATIC set function.

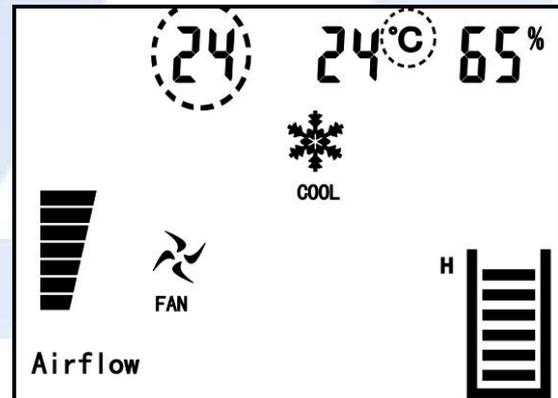
NOTE: if COOL is not on, thermostatic function cannot be activated.

While the °C is flashing, it means to enter temperature control mode. If the % is flashing, it means to enter temperature humidity control mode.

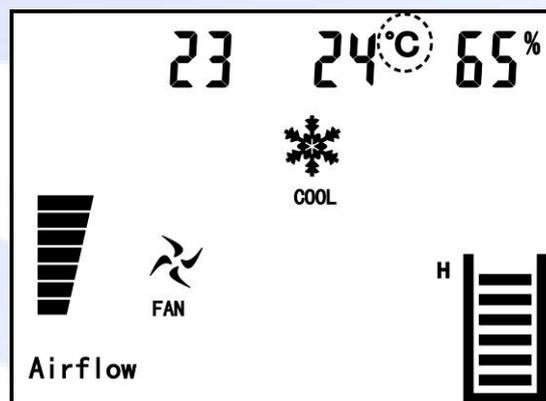
Press SET key again, the temperature figure and °C will both flash. Press UP and DOWN keys to change the temperature figure. While finish, press SET again to enter temperature automatically control mode. Until the measured temperature reach set temperature, the water pump will always run. During this process, the °C icon will always flash.



PIC 7-1 : Choose temperature control



PIC 7-2 : temperature set

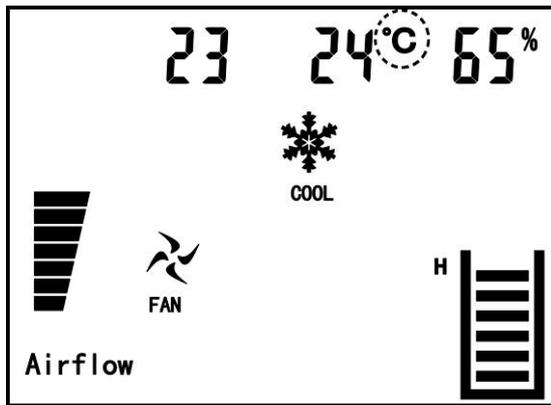


PIC 7-3 : end temperature set

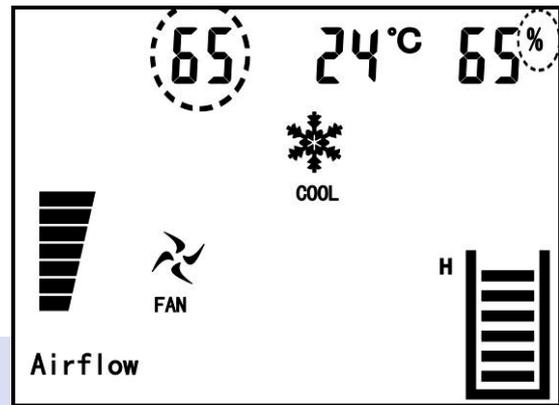
7.2 HUMIDITY CONTROL

Press SET key to enter THERMOSTATIC set function. While the °C is flashing, it means to enter temperature control mode. Press UP or DOWN keys, the % will flash, it means to enter temperature humidity control mode.

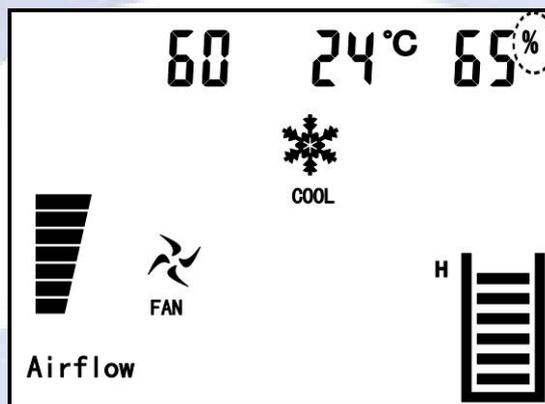
The setting method is similar with temperature control.



PIC 7-3 : Choose mode



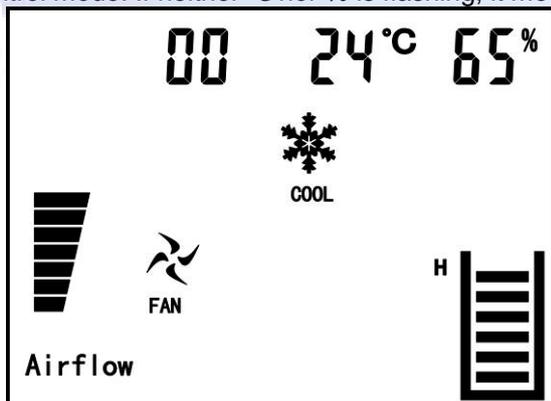
PIC 7-4 : set humidity



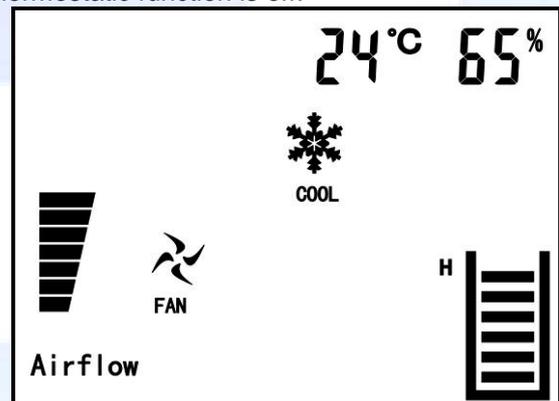
PIC 7-5 : end humidity set

7.3 THERMOSTATIC OFF

Press SET key to enter THERMOSTATIC set function. While the °C is flashing, it means to enter temperature control mode. Press UP or DOWN keys, the % will flash, it means to enter temperature humidity control mode. If neither °C nor % is flashing, it means the thermostatic function is off.



PIC 7-3 : Cancelling



PIC 7-4 : Cancelled



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