



YR SERIES ICEMAKER END-USER MANUAL

YR140-AP-161 / YR280-AP-161 / YR450-AP-161 / YR800-AP-161

In order to provide the best service, Atosa requests that you register your warranty at www.atosausa.com

For any service issues, please contact us at:
Email: service@atosausa.com
or call us Toll Free:
1-855-855-0399



Please clean the filter frequently
DO NOT OVERLOAD

Content

I.	Summary	2
1.	Model	2
2.	Ice production	3
II.	Safety Notices.....	4
III.	Installation.....	5
1.	Power supply.....	5
2.	Construction.....	6
3.	Accessories.....	7
4.	Ice bin installation	7
5.	Ice machine head installation	7
6.	Obstruction panel installation (no in the self-contained machine)	8
7.	Connect the water inlet hose and drain hose	8
8.	Installation location.....	9
IV.	Operation	10
1.	Checklist before operation	10
2.	operation.....	10
3.	Ice weight per batch.....	11
V.	Maintenance	12
	Clean and sanitize	12
	Condenser air-filter wash.....	15
VI.	Service	16
1.	Diagram	17
2.	Safety protection.....	17
3.	LED indication.....	17
4.	Failures analysis.....	18
5.	Customer Support	19
6.	Waste disposal	20
7.	Commercial Ice Machine Warranty.....	20

I. Summary

The following data are for reference only

1. Model

Model	YR140-AP-161	YR280-AP-161	YR450-AP-161	YR800-AP-261
Cooling style	Air	Air	Air	Air
Power supply	110-120V/ 60Hz	110-120V/ 60Hz	110-120V /60Hz	220-240V /60Hz
Power(W)	363	704	965	1700
Max Ice production(lbs/24hr)	140lb	280lb	450lb	800lb
Dimension(mm)	601*725*981	601*725*981	765*610*557	765*610*801
Weight(kg)	65	70	57	90
Refrigerant	R290/90g	R290/90g	R290/150g	R404a/440g
Using temp. range	2~43℃	2~43℃	2~43℃	2~43℃
Water temp. range	1~32℃	1~32℃	1~32℃	1~32℃
Water pressure range	15~90Psi	15~90Psi	15~90Psi	15~90Psi
Power range	+10%/-15%	+10%/-15%	+10%/-15%	+10%/-15%

2. Ice production

YR140-AP-161 Ice production:

Ambient Temp. Water Temp.	Ice production(lbs/24hr)		
	70F(21°C)	90F(32°C)	100F(38°C)
70F(21°C)	142	105	90

YR280-AP-161 Ice production:

Ambient Temp. Water Temp.	Ice production(lbs/24hr)		
	70F(21°C)	90F(32°C)	100F(38°C)
70F(21°C)	283	225	201

YR450-AP-161 Ice production:

Ambient Temp. Water Temp.	Ice production(lbs/24hr)		
	70F(21°C)	90F(32°C)	100F(38°C)
70F(21°C)	460	415	385

YR800-AP-261 Ice production:

Ambient Temp. Water Temp.	Ice production(lbs/24hr)		
	70F(21°C)	90F(32°C)	100F(38°C)
70F(21°C)	810	650	550

II. Safety Notices

Please read this manual carefully before proceeding, otherwise, can result in death, serious injury or damage to the equipment.

• Caution	
*	Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

• Notice	
*	The ice making machine is commercial equipment, which is only suitable for the proper location,
*	The manufacturer shall not be liable for any loss caused by improper operation or usage.
*	Installation and necessary shift work, must be handed over to have the corresponding knowledge workers in accordance with the local laws and regulations according to the manufacturer's instructions.
*	Proper installation, care and maintenance are essential for maximum performance and trouble free operation of your equipment.

• Warning	
*	This equipment contains high voltage electricity and refrigerant charge. Installation and repairs are to be performed by properly trained technicians aware of the dangers of dealing with high voltage electricity and refrigerant under pressure. The technician must also be certified in proper refrigerant handling and servicing procedures. All lockout and tag out procedures must be followed when working on this equipment.
*	The ice maker is to be installed in accordance with the Safety Standard for Refrigeration Systems, ASHRAE 15 and shall not be installed in corridors or hallways of public buildings.
*	Component parts shall be replaced with like components and that servicing shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

III. Installation

Installation Check List

- 1, Is the Ice Machine level?
- 2, Have all of the electrical and water connections been made?
- 3, Has the supply voltage been tested and checked against the rating on the nameplate?
- 4, Is there proper clearance around the ice machine for air circulation?
- 5, Is the ice machine grounded and polarity correct?
- 6, Has the ice machine been installed where ambient temperatures will remain in the range of 35° - 110°F (1.6° - 43.3°C)?
- 7, Is there a separate drain for the potable water, bin and water-cooled condenser?
- 8, Are all electrical leads free from contact with refrigeration lines and moving equipment?
- 9, Has the owner/operator been instructed regarding maintenance and the use of the specified Cleaner and Sanitizer?
- 10, Has the owner/operator completed the warranty registration card?
- 11, Has the ice machine and bin been sanitized?
- 12, Is the ice thickness control set correctly? (Refer to Operational Checks to check/set the correct ice bridge thickness).

1. Power supply

• Warning
* All wiring must comply with national and local laws and regulations
* The ice maker must be earthed properly

All electrical operations involved must comply with the following:

- 1) the ice maker must be grounded;
- 2) each ice maker must be individually fitted with fuses or breaker;
- 3) a qualified electrician must be needed with the wires;
- 4) the ice maker starts with the maximum load and the maximum allowable voltage fluctuates by +/- 10%;
- 5) check that the socket is securely fastened before starting.

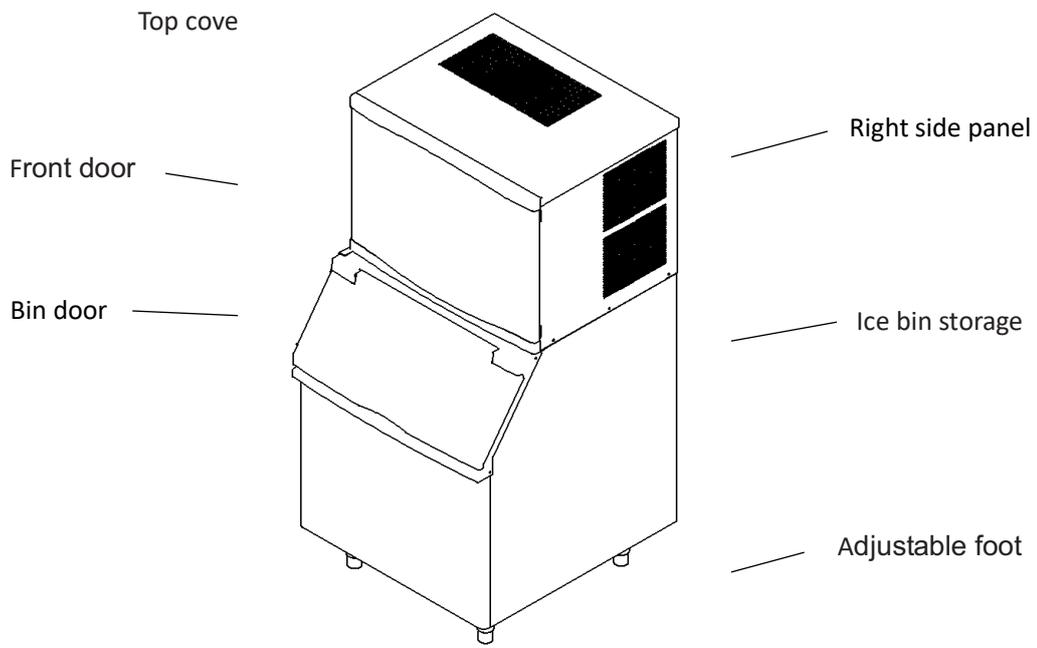
Match fuse or breaker and machine circuit current

Model	YR140-AP-161	YR280-AP-161	YR450-AP-161	YR800-AP-261
V/P/F	110V/1/60Hz	110V/1/60Hz	110V/1/60Hz	230V/1/60Hz
Fuse/breaker	10A	16A	20A	25A
Min circuit	3.5A	6.8A	9.7A	9.8A

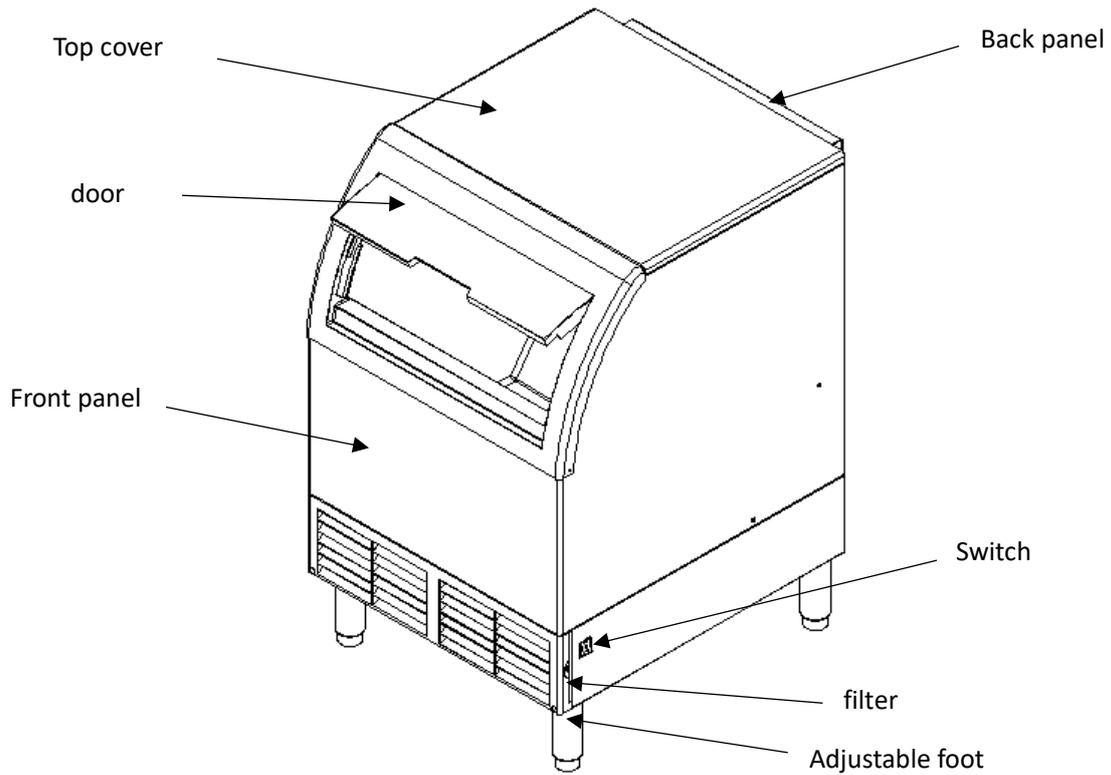
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2. Construction

Ice machine head outside view

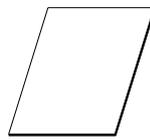


Self-contained ice machine construction



3. Accessories

Use manual	1
Water inlet hose	1
Drain hose	1
Obstruction panel	1
Ice scoop	1



User manual



Water inlet hose



Drain hose



Air baffle (No in the self-contained machine)



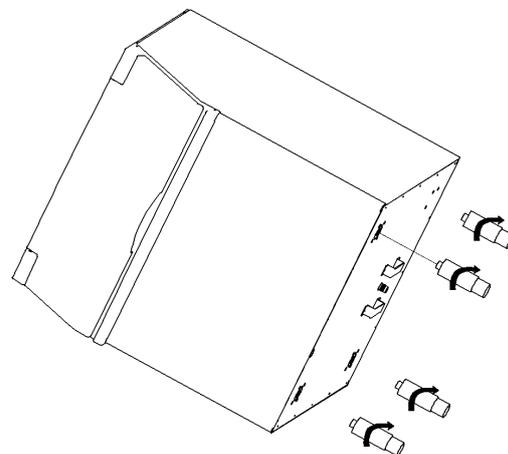
Ice scoop

4. Ice bin installation

• Caution

Adjustive foot must be tightened; otherwise the ice machine will be instable.

- 1)
- 2) carefully place the ice bin storage on the rear side. Then screw the four adjustable feet (accessories in the ice bin) into the four holes at the bottom of the storage and screw them down hardly.
- 3) after the foot is installed, put it right, and adjust the foot slowly until the level.



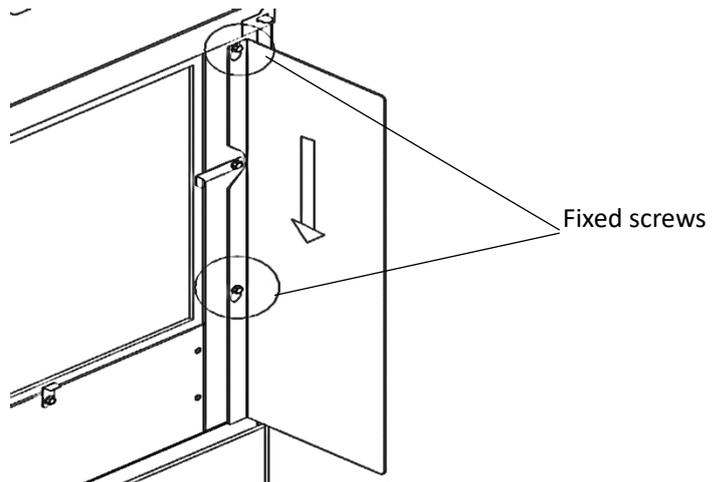
5. Ice machine head installation

- 4) carefully remove the machine head paper packaging (do not upside down to prevent compressor damage), slowly lift the head, placed it on the ice bin storage .
- 5) slowly move the ice maker until it is in right place on the ice bin.

6. Obstruction panel installation (no in the self-contained machine)

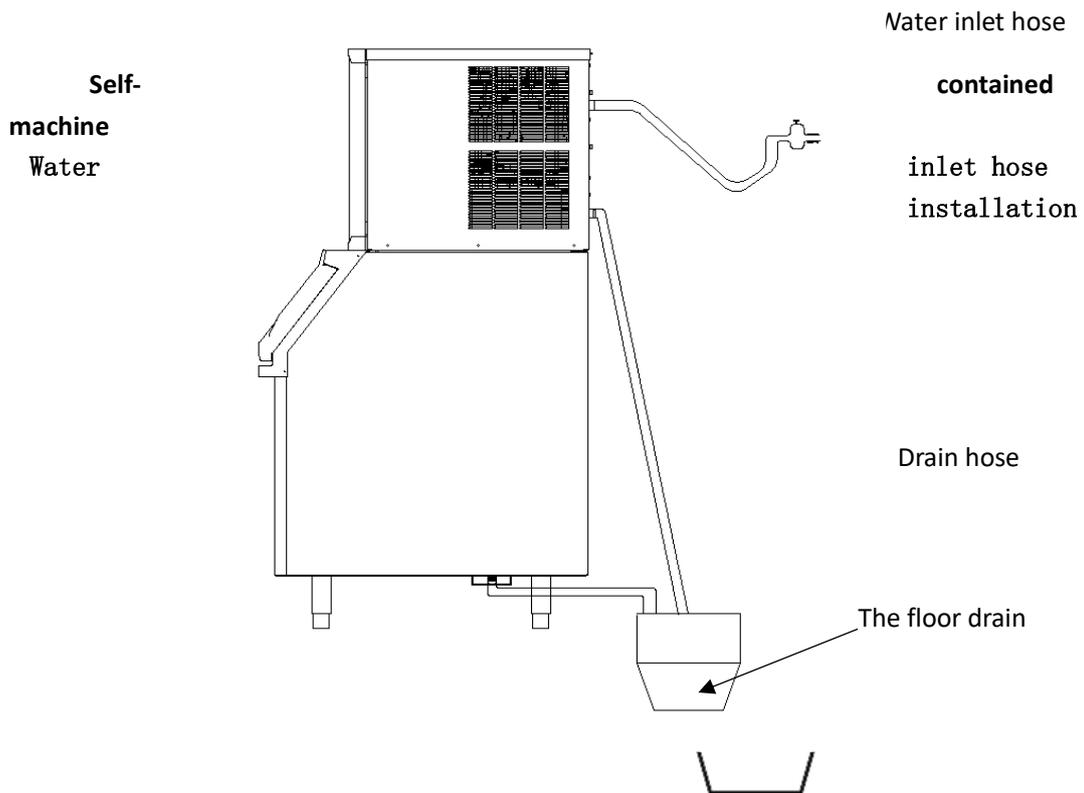
• Caution
* Air baffle must be installed, or affect heat reject.

- 1) Unscrew the two fixed screws;
- 2) put the air baffle as the picture shows;



7. Connect the water inlet hose and drain hose

Ice machine head connection diagram



• Notice

Water inlet hose

The water entering the ice maker must meet the drinking water standard

- 1) if there is no water filter system, please connect the water inlet hose as diagram shows;
- 2) if the water pressure is greater than 80Psi, please install the relief valve
- 3) if the pressure is less than 20Psi, please install water pressurization;

Drain hose installation

• Notice

Drain hose

the water shall be prevented from flowing into the ice bin storage

- 4) For the drain hose, each meter long going must have a drop of 2.5 cm.
 - 5)) the ice bin and the ice machine drains should be separated
- The floor drain

	Water inlet	Ambient
Temperature.	1~32℃	2~43℃
Water pressure	30~70Psi	

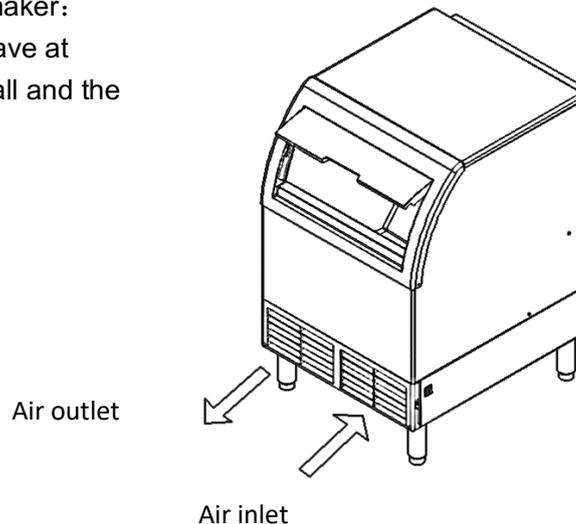
8. Installation location

• Notice

Do not put things in the air inlet and outlet of the ice maker to prevent ventilation and heat reject.

Do not install ice machine in direct sunlight.

- 1) the ice machine should be installed horizontally;
- 2) the ambient temperature should be 10~43C(50—110F) and the water inlet temperature is 1~32 C(33—90F);
- 3) For the self-contained ice maker:
Left and right side must have at least 5cm gap from the wall and the top has 1cm gap.



IV. Operation

1. Checklist before operation

- a) Is ice machine level?
- b) Are Water inlet and drain hose connected ok?
- c) If there are not water lack with the ice machine?
- d) Check the power voltage, if it matches the label on the machine?

2. operation

- 1) Freeze cycle
 - a) Power plug connection: the control board led is on.
 - b) startup: Toggle the switch to the on position, the green led will flash; the hot gas valve open for 10s, the compressor is energized,
 - c) ice melt: the hot gas valve still keep opening for 20s, then the water pump running to flush the evaporator for 20s. then close the hot gas valve and water pump and open the drain valve for 15s then close.
 - d) prechill (40s) : the compressor is on, and the condenser fan and water inlet valve are energized, hot gas valve and water pump are closed, thus to

prechill the evaporator.

- e) Freeze: water pump is energized to make ice in the evaporator.

2) Harvest cycle

- f) energy storage: when the harvest probe doesn't contact the water, condenser NTC probe test the liquid tube temperature and give the time to stop the condenser fan before harvest, to add the heat of the refrigeration system. Increase the harvest effective.
- g) Harvest cycle: hot gas valve is energized to heat the evaporator, when the surface of ice begin to melt, the ice will drop down by the gravity. And the ice put the water curtain outside and the magnet switch from close to open to close, harvest cycle ended to return the prechill cycle and start next step.
- h) Ice full: when the magnet switch opens beyond 30s in harvest cycle, the ice machine stops, mean the ice is full.

3. Ice weight per batch

	YR140-AP-161	YR280-AP-161	YR450-AP-161	YR800-AP-261
Ice Weight per batch(g)	690—840	860—1050	1650--2000	3100--3750

- 1) When need to adjust the ice thickness, screws the water probe to change the water level position. screw the adjustable nut clockwise, increase the ice thickness; turn the adjustable nut counterclockwise, and reduce the ice thickness.

V. Maintenance

Clean and sanitize

Cleaning and Sanitizing GENERAL

You are responsible for maintaining the ice machine in accordance with the instructions in this manual. Maintenance procedures are not covered by the warranty. Clean and sanitize the ice machine every three months for efficient operation. If the ice machine requires more frequent cleaning and sanitizing, consult a qualified service company to test the water quality and recommend appropriate water treatment. An extremely dirty ice machine must be taken apart for cleaning and sanitizing.

• Warning
Wear rubber gloves and safety goggles (and/or face shield) when handling Ice Machine Cleaner or Sanitizer

CLEANING/SANITIZING PROCEDURE

This procedure must be performed a minimum of once every three months.

- The ice machine and bin must be disassembled cleaned and sanitized.
- All ice produced during the cleaning and sanitizing procedures must be discarded.
- Removes mineral deposits from areas or surfaces that are in direct contact with water.

PREVENTATIVE MAINTENANCE CLEANING PROCEDURE

- This procedure cleans all components in the water flow path, and is used to clean the ice machine between the cleaning/sanitizing procedure.

EXTERIOR CLEANING

Clean the area around the ice machine as often as necessary to maintain cleanliness and efficient operation.

Wipe surfaces with a damp cloth rinsed in water to remove dust and dirt from the outside of the ice machine. If a greasy residue persists, use a damp cloth rinsed in a mild dish soap and water solution. Wipe dry with a clean, soft cloth.

The exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels.

- Never use steel wool or abrasive pads for cleaning.
- Never use chlorinated, citrus based or abrasive cleaners on exterior panels and plastic trim pieces.

Cleaning / Sanitizing Procedure

• Warning
Wear rubber gloves and safety goggles (and/or face shield) when handling Ice Machine Cleaner or Sanitizer.
• Caution
Do not mix Cleaner and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling
• Caution
Never use anything to force ice from the evaporator. Damage may result.

Ice machine cleaner is used to remove lime scale and mineral deposits. Ice machine sanitizer disinfects and removes algae and slime. For the cleaner and sanitizer, Ecolab company's products, Kay Delimer as the cleaner and kay5 as sanitizer are recommend.

NOTE: Although not required and dependant on your installation, removing the ice machine top cover may allow easier access.

Step 1 Open the front door to access the evaporator compartment. Ice must not be on the evaporator during the clean/sanitize cycle. Follow one of the methods below:

- Toggle the switch on "off" position at the end of a harvest cycle after ice falls from the evaporator(s).
- Toggle the switch on "off" position and allow the ice to melt.

Step 2 Remove all ice from the bin/dispenser.

Step 3 Toggle the switch on "clean" position. Water will flow through the water dump valve and down the drain. Wait until the water trough refills (approximately 1 minute), then add the proper amount of ice machine cleaner.

Model	Amount of cleaner(Kay delimer)
YR140-AP-161	2 pack
YR280-AP-161	2 pack
YR450-AP-161	4 packs
YR800-AP-261	4 packs

Step 4 Wait until the clean cycle is complete (approximately *30 minutes). Then disconnect power to the ice machine (and dispenser when used).

Step 5 Remove parts for cleaning. Please refer to the proper parts removal for your ice machine.

Continue with step 6 when the parts have been removed.

Step 6 Mix the cleaner and lukewarm water. Depending upon the amount of mineral buildup, a larger quantity of solution may be required. Use the ratio in the table below to mix enough solution to thoroughly clean all parts.

	water	Mixed with cleaner
Cleaner solution rate	2L	4 packs

Step 7 Use the cleaner/water mixture to clean all components. use a soft-bristle nylon brush, sponge or cloth (NOT a wire brush) to carefully clean the parts. Soak parts for 5 minutes (15 - 20 minutes for heavily scaled parts). Rinse all components with clean water.

Step 8 While components are soaking, use the cleaner/water solution to clean all foodzone surfaces of the ice machine and bin (or dispenser). Use a nylon brush or cloth to thoroughly clean the following ice.

- Side walls • Base (area above water trough)
- Evaporator plastic parts - including top, bottom, and sides
- Bin or dispenser Rinse all areas thoroughly with clean water

SANITIZING PROCEDURE

Step 9 Mix a solution of sanitizer and lukewarm water

	water	Mixed with sanitizer
Sanitizer solution rate	2L	4 packs

Step 10 Use the sanitizer/water solution to sanitize all removed components. Use a spray bottle to liberally apply the solution to all surfaces of the removed parts or soak the removed parts in the sanitizer/water solution.

Step 11 Use the sanitizer/water solution to sanitize all foodzone surfaces of the ice machine and bin (or dispenser). Use a spray bottle to liberally apply the solution. When sanitizing, pay particular attention to the following areas:

- Side walls
- Base (area above water trough)
- Evaporator plastic parts - including top, bottom and sides
- Bin or dispense,

Step 12 Wait 20 minutes. Do rinse these surfaces with drinking water after sanitizing.

Step 13 Replace all removed components.

Step 14 Reapply power to the ice machine. Toggle the switch on “clean” position again. Water will flow through the water dump valve and down the drain. Wait until the water trough refills (approximately 1 minute), then add the proper amount of ice machine sanitizer

Model	Amount of sanitizer(Kay 5)
YR140-AP-161	1 pack
YR280-AP-161	1 pack
YR450-AP-161	2 packs
YR800-AP-261	2 packs

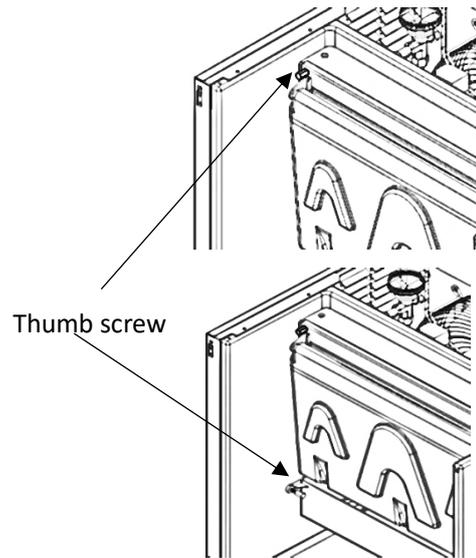
Use a measuring cup, put in 1L water with the correspondent sanitizer packs with the models, making the sanitizer solution to add the water trough.

Step 15 After when the sanitizing procedure finished, toggle the switch from clean to on position, close and secure the front door.

Parts Removal for Cleaning/Sanitizing

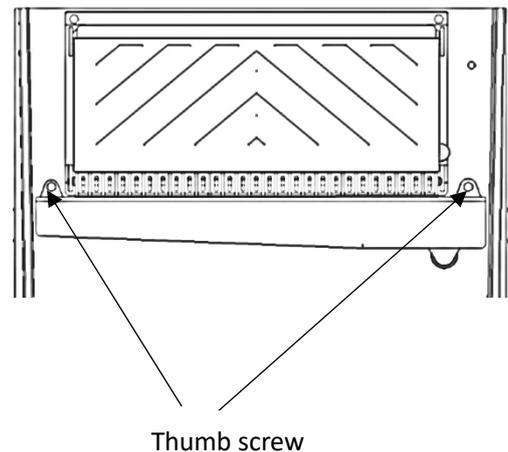
For Model YR450-AP-161, YR800-AP-261

- 1) unscrew the front door
Unscrew the bottom two screws, get away the front door.
- 2) remove the water dispense panel
- 3) remove the water curtain
Unscrew the two thumb screws, remove the water curtain
- 4) remove the water trough



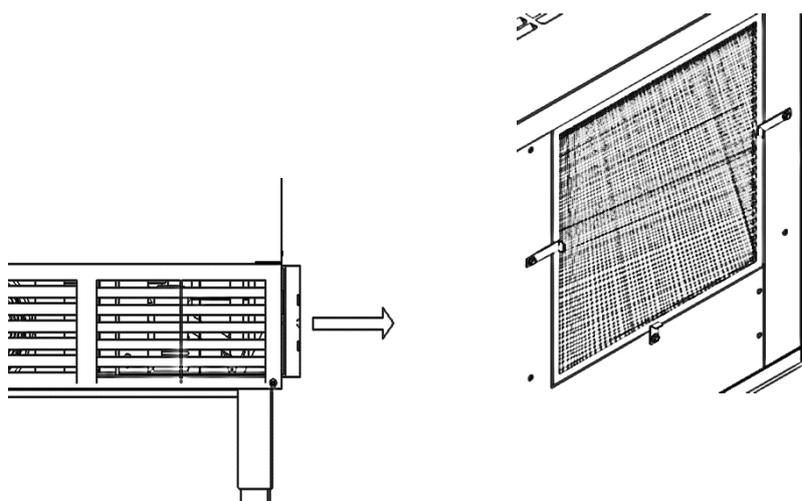
For Model YR140-AP-161, YR280-AP-161

- 1) remove the water curtain
- 2) Unscrew the two thumb screws, remove the water curtain
- 3) remove the water dispense panel
- 4) remove slides panel
- 5) remove the water probe stand
- 6) remove the water trough



Condenser air-filter wash

Remove the air-filter for cleaning.



- **Notice**

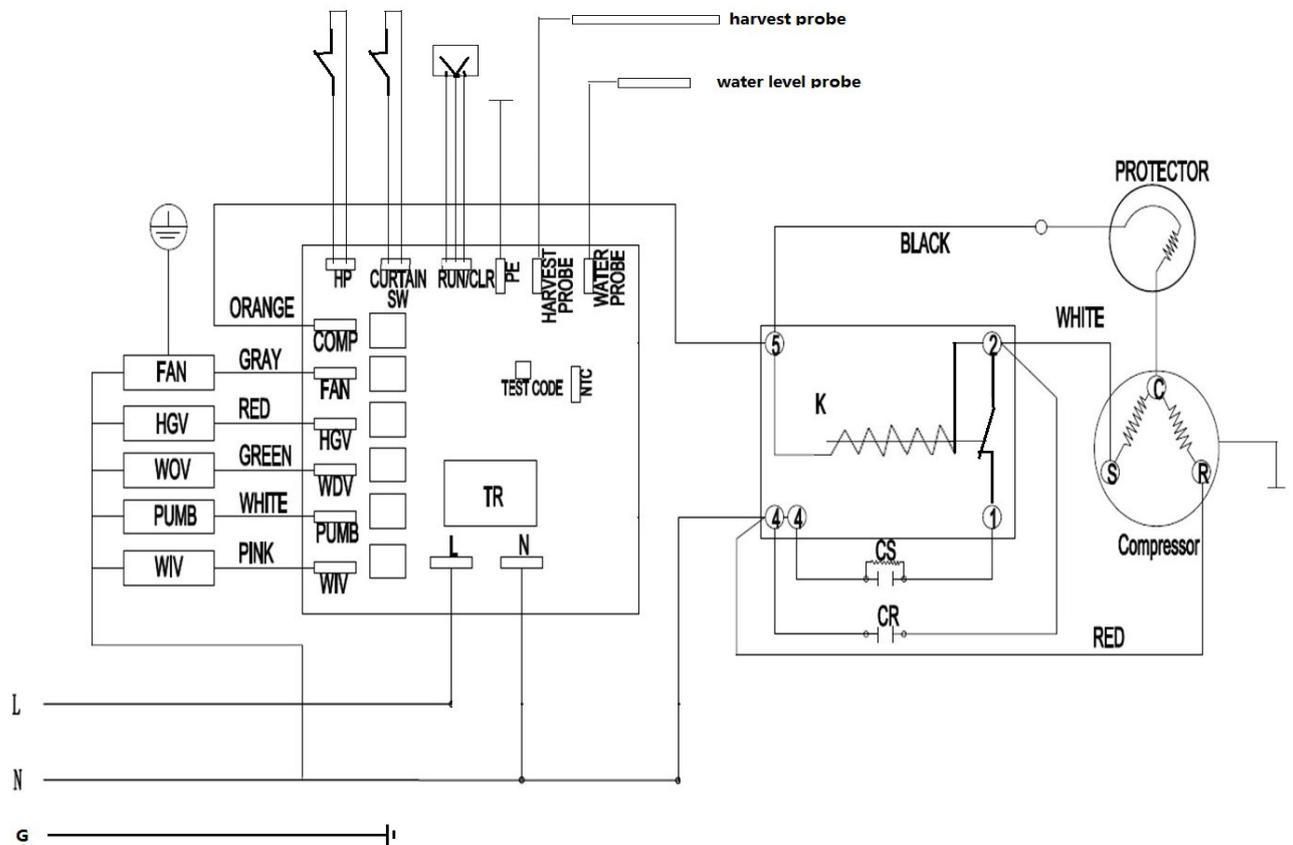
Clean air-filter once a month

VI. Service

- **Important**

Technicians must have the correlative certificate of service

1. Diagram



2. Safety protection

- 1) E1: Long freeze cycle, freeze cycle reaches 40min for 3 times, stop.
- 2) E2: Long harvest cycle, harvest cycle reaches 4.5min for 3 times, stop.
- 3) E3: High pressure protection, discharge pressure reaches 450psi, stop.
- 4) E4: water lack protection, water probe can't touch water for 5min in freeze cycle, stop.
- 5) E5: condenser temperature alarm, condenser temperature beyond $-20 \sim +80^{\circ}\text{C}$ not stop, D10 (Led) flash fast.

3. LED indication

- 1) D7 green led: ice making indicator
 D7 flash slow—1s on 1s off, ice making or ice full;
 D7 flash fast—0.2s on 0.2s off, clean procedure end;
 D7 illuminate—clean procedure.

- D7 off—switch on “off” position。
- 2) D8 blue led: water level indicator
 - D8 flash slow—1s on 1s off, E3, water lack protection.
 - D8 Illuminate—water probe touch the water
 - D8 off—water probe not touch the water
- 3) D9 red led: Harvest cycle indicator/ harvest probe
 - D9 flash fast—0.3s on 0.3s off, E1, long freeze protection
 - D9 flash slow—0.7s on 0.7s off, E2, long harvest protection
 - D9 Illuminate—harvest probe not touch the water
 - D9 off—harvest probe touch the water
- 4) D10 yellow led: water curtain switch indicator
 - D10 flash fast—0.3s on 0.3s off, E4, HP protection
 - D10 flash slow—1s on 1s off, E5, NTC temperature alarm
 - D10 Illuminate—water curtain switch close
 - D10 off—water curtain switch open

4. Failures analysis

- 1) Long freeze cycle:
 - a) High ambient temperature , high water inlet temperature;
 - b) Dirty condenser, clean the condenser
 - c) Harvest probe issue (short circuit)
 - d) Refrigeration system failure, call service call
- 2) Long harvest cycle:
 - a) Too thick for ice thickness; adjust the water probe
 - b) Dirty for evaporator, clean;
 - c) Ambient temperature is too low;
 - d) NTC probe issues
- 3) HP protection:
 - a) Dirty of condenser, clean;
 - b) Ambient temp. too higher;
 - c) HP switch is wrong, open; Fan motor issue, not run;
 - d) Refrigeration system failure, call service call;
- 4) Water lack protection:
 - a) No water supply
 - b) Water ball valve is closed
 - c) Water leak of the trough from somewhere
 - d) Water inlet valve issues
 - e) Water probe issues (short circuit)

5. Customer Support

Checklist

If a problem arises during operation of your ice machine, follow the checklist below before calling service. Routine adjustments and maintenance procedures are not covered by the warranty.

Problem	Possible Cause	To Correct
Ice machine does not operate.	No electrical power to the ice machine and/or condensing unit	Replace the fuse/reset the breaker/turn on the main switch.
	High pressure cutout tripping	Clean condenser coil

	Water curtain off or stuck open.	Water curtain must be installed and swinging freely
	Ice machine is not turned on.	Put the switch in the ice "position"
Ice machine stops, and can be restarted by the switch.	Safety protection feature stopping the ice machine.	Refer to "Safety protection " on the last page.
Ice machine does not release ice or is slow to harvest.	Ice machine is dirty	Clean and sanitize the ice machine.
	Ice machine is not level.	Level the ice machine
	Low air temperature around ice machine head section	Air temperature must be at least 35°F (2°C)
Ice machine does not cycle into harvest mode	The six-minute freeze time lock-in has not expired yet.	Wait for the freeze lock-in to expire.
	Ice thickness probe is dirty	Clean and sanitize the ice machine.
	Ice thickness probe is short from the ground	disconnect the probe to the ground
	Ice thickness probe is out of adjustment	Adjust the ice thickness probe.
	Uneven ice fill (thin at the middle of evaporator)	Verify sufficient water level in sump trough. Contact a qualified service company to check refrigeration system.

6. Waste disposal

Deal with the disposal of the ice machine and its accessories according to the Federal, state laws and regulations.

7. Commercial Ice Machine Warranty

Warrants for a period of twenty-four months from the installation date (except as limited below) that new ice machines manufactured shall be free of defects in material or workmanship under normal and proper use and maintenance as specified by its manufactory and upon proper installation and start-up in accordance with the instruction manual supplied with the ice machine. The warranty hereunder with



respect to the compressor shall apply for an additional twelve months, excluding all labor charges. The obligation of the manufactory under this warranty is limited to the repair or replacement of parts, components, or assemblies that in the opinion of the manufactory are defective. This warranty is further limited to the cost of parts, components or assemblies and standard straight time labor charges at the servicing location. Time and hourly rate schedules, as published from time to time by the manufactory, apply to all service procedures. Additional expenses including without limitation, travel time, overtime premium, material cost, accessing or removal of the ice machine, or shipping are the responsibility of the owner, along with all maintenance, adjustments, cleaning, and ice purchases. Labor covered under this warranty must be performed by a manufactory Contracted Service Representative or a refrigeration service agency as qualified and authorized by the COMPANY's local Distributor. The manufactory's liability under this warranty shall in no event be greater than the actual purchase price paid by customer for the ice machine. The foregoing warranty shall not apply to (1) any part or assembly that has been altered, modified, or changed; (2) any part or assembly that has been subjected to misuse, abuse, neglect, or accidents; (3) any ice machine that has been installed and/or maintained inconsistent with the technical instructions provided by the manufactory; or (4) any ice machine initially installed more than five years from the serial number production date. This warranty shall not apply if the Ice Machine's refrigeration system is modified with a condenser, heat reclaim device, or parts and assemblies other than those manufactured by the manufactory, unless the manufactory approves these modifications for specific locations in writing. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR GUARANTEES OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall the COMPANY be liable for any special, indirect, incidental or consequential damages. Upon the expiration of the warranty period, the COMPANY's liability under this warranty shall terminate. The foregoing warranty shall constitute the sole liability of the COMPANY and the exclusive remedy of the customer or user. To secure prompt and continuing warranty service, the warranty registration card must be completed and sent to the COMPANY within five (5) days from the installation date. Complete the following and retain for your record: Distributor/Dealer

Model Number _____

Serial Number _____

Installation Date _____
