

*In order to provide the best service, ATOSA  
Requests that please register your warranty online  
At [www.atosausa.com](http://www.atosausa.com)  
For any service issues, please kindly contact us at  
Email: [service@atosausa.com](mailto:service@atosausa.com)  
Or  
Toll Free: 1-855-855-0399*

*Please clean the filter frequently!  
Please do not overload unit!*

# **ICEMAKER END-USER MANUAL**





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## Table of contents

<b>1. ICE MAKER</b> .....	<b>1</b>
<b>1.1. Safety Notices</b> .....	<b>1</b>
<b>1.2. Summary</b> .....	<b>2</b>
<b>1.3. Installation</b> .....	<b>4</b>
<b>1.4. Operation</b> .....	<b>11</b>
<b>1.5. Maintenance</b> .....	<b>12</b>
<b>1.6. Service</b> .....	<b>16</b>
<b>2. Ice Dispenser</b> .....	<b>19</b>
<b>2.1. General Information</b> .....	<b>19</b>
<b>2.2. Installation Instructions</b> .....	<b>19</b>
<b>2.3. Operation</b> .....	<b>22</b>
<b>2.4. Maintenance Disassembly</b> .....	<b>23</b>
<b>2.5. Customer Support</b> .....	<b>26</b>
<b>2.6. Commercial Ice Machine Warranty</b> .....	<b>28</b>

# 1. ICE MAKER

## 1.1. 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.

## 1.2. Summary

The following data are for reference only

### 1.2.1. Model

Model	YR140-AP-161	YR280-AP-161	YR450-AP-161	YR800-AP-261	HD-350-AP-161
Ice type	Half cube ice	Half cube ice	Half cube ice	Half cube ice	Cube ice
Cooling style	Air	Air	Air	Air	Air
Power supply	110-120V/ 60Hz	110-120V/ 60Hz	110-120V /60Hz	220-240V /60Hz	110-120V/ 60Hz
Power(W)	363	704	965	1700	870
Max Ice production(IBS/24hr)	140lb	280lb	450lb	800lb	350
Dimension(mm)	601*725*981	601*725*981	765*610*557	765*610*801	575*750*1780
Weight(kg)	65	70	57	90	123
Refrigerant	R290/90g	R290/90g	R290/150g	R404a/440g	R290/150g
Using temp. range	50-110 °F	50-110 °F	50-110 °F	50-110 °F	50-110 °F
Water temp. range	37-90 °F	37-90 °F	37-90 °F	37-90 °F	37-90 °F
Water pressure range	15~70Psi	15~70Psi	15~70Psi	15~70Psi	15~70Psi

## 1.2.2. 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

### HD350-AP-161 Ice production:

Ambient Temp. Water Temp.	Ice production(lbs/24hr)		
	70F(21°C)	90F(32°C)	100F(38°C)
70F(21°C)	350	250	220

## 1.3. Installation

### Installation Check List

- Is the Ice Machine level?
- Have all the electrical and water connections been made correctly?
- Has the supply voltage been tested and checked against the rating on the nameplate?
- Is there proper clearance around the ice machine for air circulation?
- Is the ice machine grounded and polarity, correct?
- Has the ice machine been installed where ambient temperatures will remain in the range of 50° - 110°F (10 - 43°C)?
- Is there a separate drain for the potable water, bin, and water-cooled condenser?
- Are all electrical leads free from contact with refrigeration lines and moving equipment?
- Has the owner/operator been instructed regarding maintenance and the use of the specified Cleaner and Sanitizer?
- Has the owner/operator completed the warranty registration card?
- Has the ice machine and bin been sanitized?
- Is the ice thickness control set correctly? (Refer to Operational Checks to check/set the correct ice bridge thickness).

#### 1.3.1. 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:

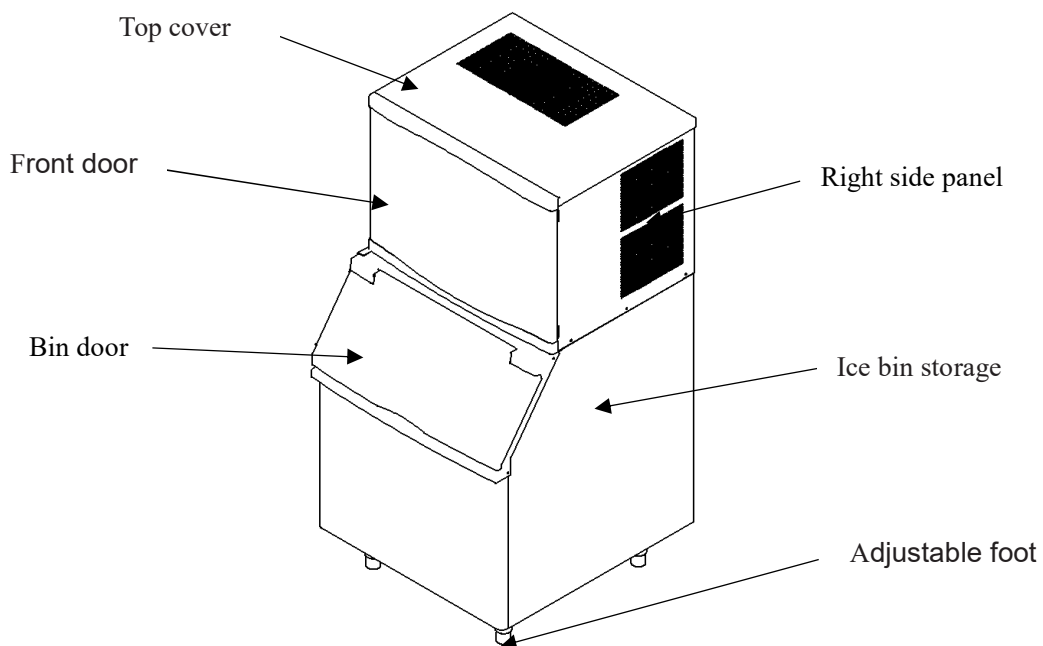
- 1) the ice maker must be grounded;
- 2) each ice maker must be individually fitted with fuses or breaker;
- 3) a qualified electrician must be needed with the wires;
- 4) the ice maker starts with the maximum load and the maximum allowable voltage fluctuates by +/- 10%;
- 5) check that the socket is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

**Match fuse or breaker and machine circuit current**

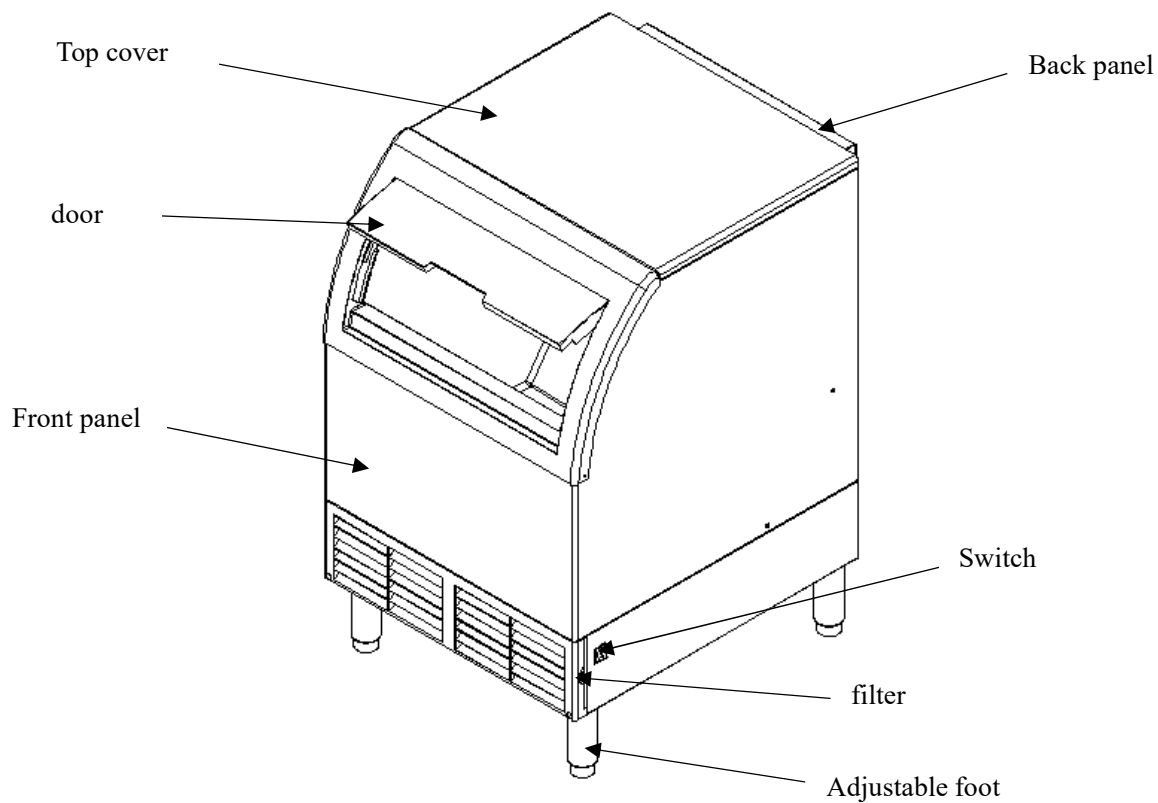
Model	YR140-AP-161	YR280-AP-161	YR450-AP-161	YR800-AP-261	HD350-AP-161
V/P/F	110V/1/60Hz	110V/1/60Hz	110V/1/60Hz	230V/1/60Hz	110V/1/60Hz
Fuse/breaker	10A	16A	20A	25A	20A
Min circuit current	3.5A	6.8A	9.7A	9.8A	10.3A

## 1.3.2. Construction

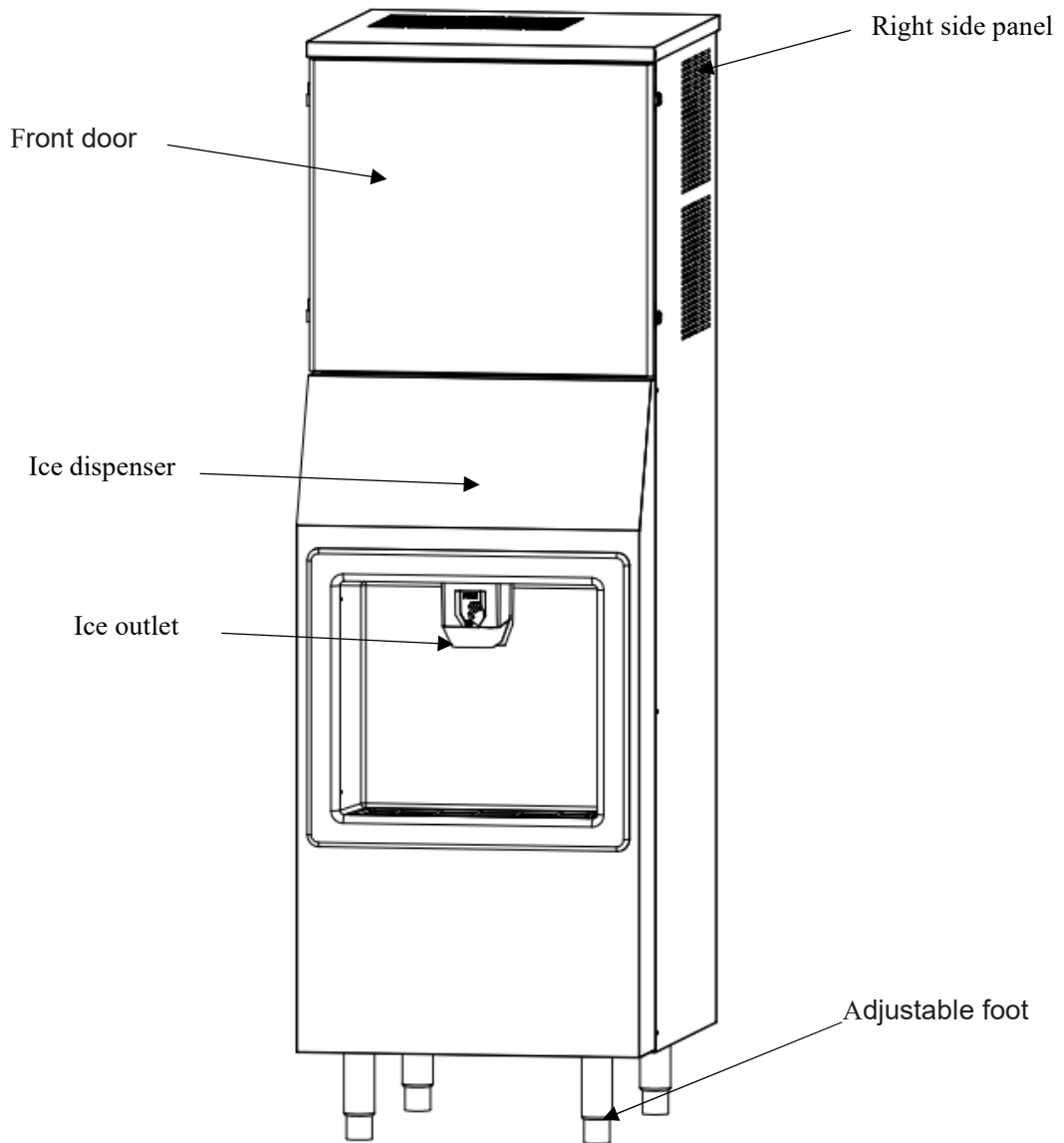
**Ice machine head outside view**



**Self-contained ice machine construction**

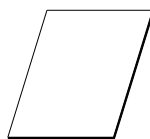


# Ice maker with dispenser



### 1.3.3. 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)



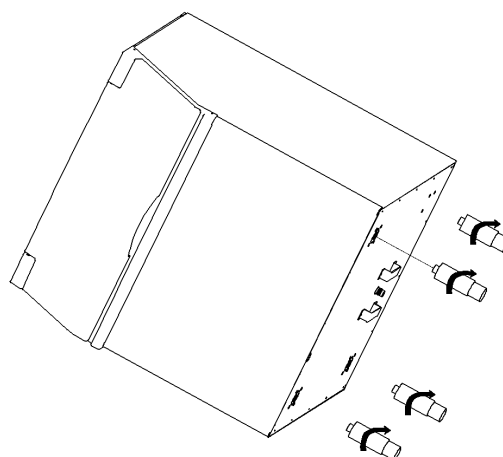
Ice scoop

### 1.3.4. Ice bin installation

**Caution**

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

- 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.
- after the foot is installed, put it right, and adjust the foot slowly until the level.



### 1.3.5. Ice machine head installation

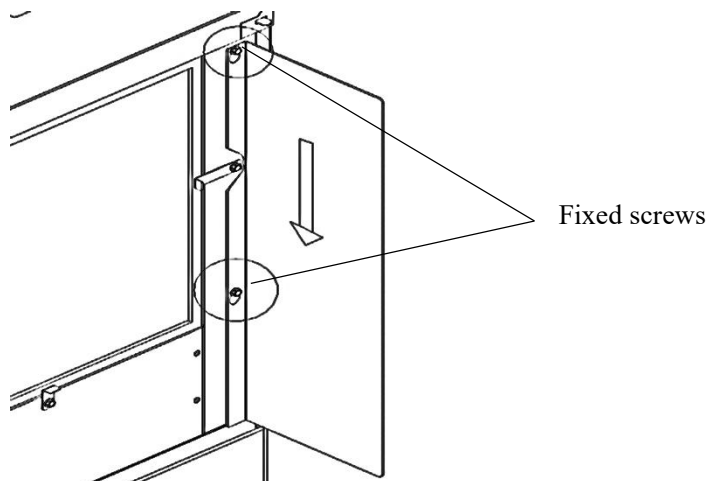
- carefully remove the machine head paper packaging (do not upside down to prevent compressor damage), slowly lift the head, placed it on the ice bin storage .
- slowly move the ice maker until it is in right place on the ice bin.

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

**Caution**

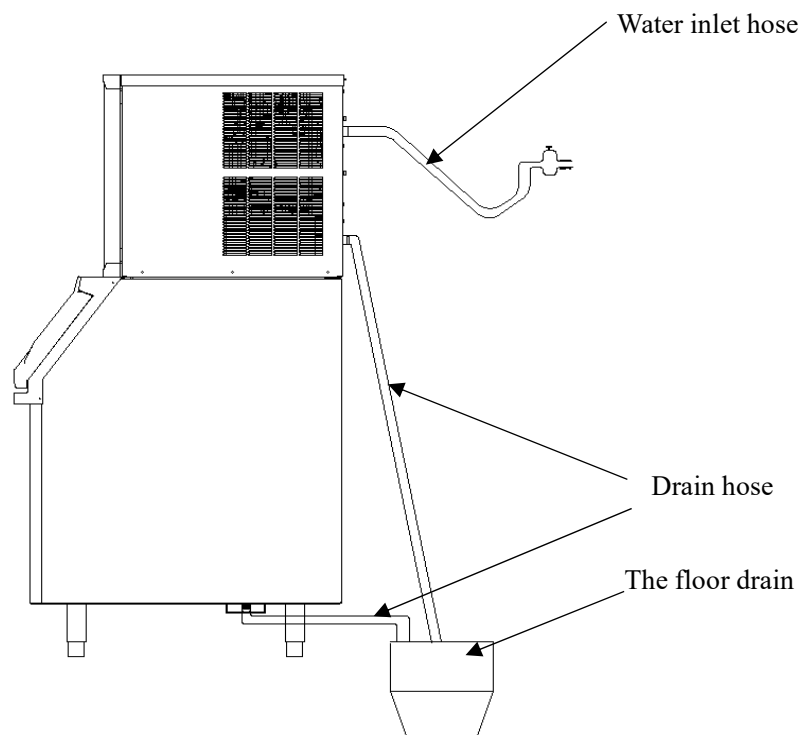
□ Air baffle must be installed, or affect heat reject.

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

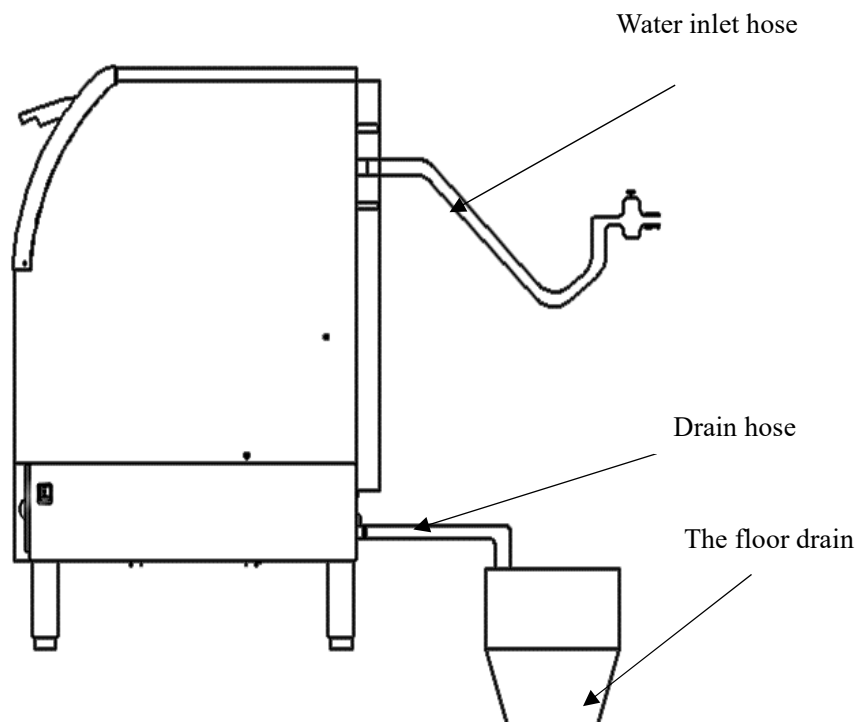


### 1.3.7. Connect the water inlet hose and drain hose

Ice machine head connection diagram



## Self-contained machine water inlet hose installation



### Notice

- 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

- 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.

	Water inlet	Ambient
Temperature.	37-90 °F	50-110 °F
Water pressure	15-72Psi	

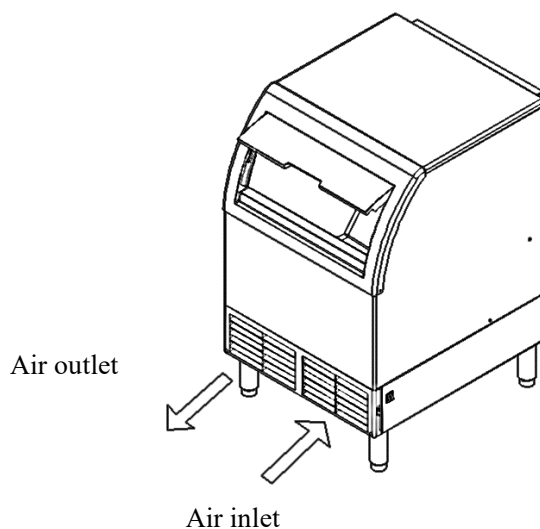
## 1.3.8. Installation location

### 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.



### 1.3.9. Water Filter Installation (Mandatory)

#### NOTICE

- To reduce the risk associated with property damage due to water leakage or flooding
- Read and follow Use Instructions before installation and use of this system.
- Change the disposable filter cartridge at the recommended interval; the disposable filter cartridge must be replaced every 12 months or sooner.
- Failure to replace the disposable filter cartridge at recommended intervals may lead to reduced filter performance and failure of the filter, causing property damage from water leakage or flooding.
- Installation and use must comply with all state and local plumbing codes.
- Protect from freezing, remove filter cartridge when temperatures are expected to drop below 33° F (4.4° C).
- Do not install systems in areas where ambient temperatures may go above 110° F (43.3° C).
- Do not install on hot water supply lines. The maximum operating water temperature of this filter system is 100°F (37.8°C).
- Do not install if water pressure exceeds 125 psi (862 kPa). If your water pressure exceeds 80 psi (552 kPa), you must install a pressure limiting valve. Contact a plumbing professional if you are uncertain how to check your water pressure.
- Do not install where water hammer conditions may occur. If water hammer conditions exist, you must install a water hammer arrester. Contact a plumbing professional if you are uncertain how to check for this condition.
- Where a backflow prevention device is installed on a water system, a device for controlling pressure due to thermal expansion must be installed. Contact a plumbing professional if you are uncertain how to select/install/maintain a thermal expansion device.
- Where a booster pump is installed on a water system, you must maintain and inspect the attached

pressure switch regularly in accordance with the booster pump manufacturer's instructions. Contact a plumbing professional if you are uncertain how to maintain your booster pump system.

□ Where a booster pump is installed on a water system, you must install an appropriate pressure relief valve. Pressure relief valve must be maintained and inspected every 6 months. Contact a plumbing professional if you are uncertain how select/install/maintain a pressure relief valve.

□ Where a booster pump is installed on a water system, you must install an appropriate pressure regulating valve and regulate water pressure to 15-72Psi.

## INSTALLATION

**STEP 1** Remove system from the package and check parts NOTE: Be sure inlet water supply is turned off before installing.

**STEP 2** Select the installation location. IMPORTANT: Allow a minimum of 3" (7.62 cm) of space below cartridge for change-outs.

**STEP 3** Select fasteners (not included) and tools appropriate for the installation location (wood beam, concrete, etc.) IMPORTANT: The location and fasteners must support the weight of the system when full of water.

**STEP 4** Draw a line using a level on the mounting surface.

**STEP 5** Mark the locations for the fasteners either by measuring the distance between the bracket holes or by using the bracket itself.

**STEP 6** Drill holes for the fasteners.

**STEP 7** Allow 1/4"-3/8" (6-10 mm) of each fastener to protrude from the surface.

**STEP 8** Install the head and bracket onto the fasteners.

**STEP 9** Tighten fasteners.

**STEP 10** (for systems using the NH3 head) Wrap male threads on nipple with PTFE tape (not included) and install into the inlet side of head (left). Install shut-off valve to nipple. IMPORTANT: Hexagonal sockets on the head do not rotate.

**STEP 11** Install inlet (left) and outlet (right) piping. Be sure to use PTFE tape. IMPORTANT: Hexagonal sockets on the head do not rotate.

**STEP 12** Remove sanitary cap from cartridge. Install cartridge with a quarter turn to the right until the cartridge comes to a complete stop. (A "click" is heard on systems that use the NH3 head). Flush new cartridge as noted on the Flush Table on page 30.

**STEP 13** (for systems using the NH3 head) Slowly turn on the inlet water supply. Be sure shut-off valve is in the "ON" position, and flush cartridges to remove any entrapped air and carbon fines from the cartridge. Refer to the Flush Table on page 30 for flush instructions. System is ready for use.

**NOTE:** Check system for leaks

## 1.4. Operation

### 1.4.1. 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?

## 1.4.2. 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.

## 1.4.3. Ice weight per batch

Modle	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.

## 1.5. Maintenance

### 1.5.1. 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

**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
YR140-AP-161	2 pack
YR280-AP-161	2 pack
YR450-AP-161	4 packs
YR800-AP-261	4 packs
HD350-AP-161	4packs

**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
YR140-AP-161	1 pack

YR280-AP-161	1 pack
YR450-AP-161	2 packs
YR800-AP-261	2 packs
HD350-AP-161	2 packs

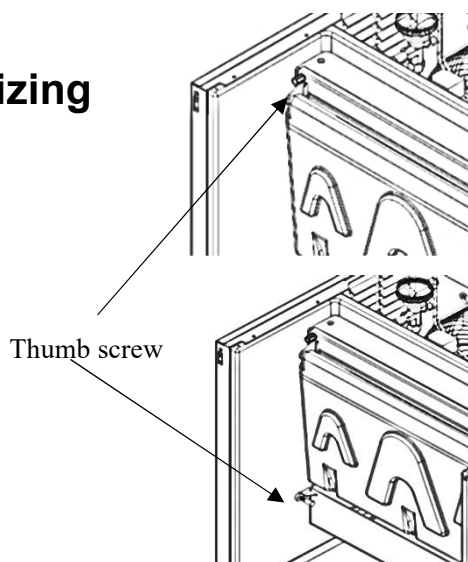
Use a measuring cup, put in 1L water with the correspondent sanitizer packs with the models, making the sanitizer solution to add the water trough.

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

## 1.5.2. Parts Removal for Cleaning/Sanitizing

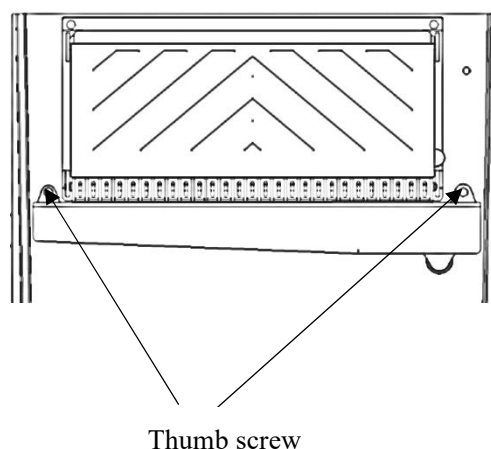
For Model YR450-AP-161, YR800-AP-261

- 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



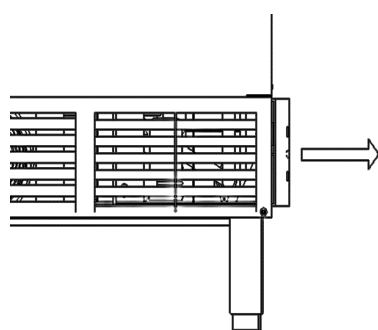
For Model YR140-AP-161, YR280-AP-161

- 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

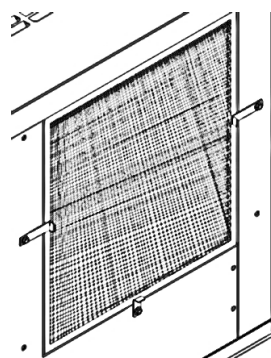


## 1.5.3. Condenser air-filter wash

Remove the air-filter for cleaning.



YR140/YR280



YR450/YR800/HD350

**Notice**

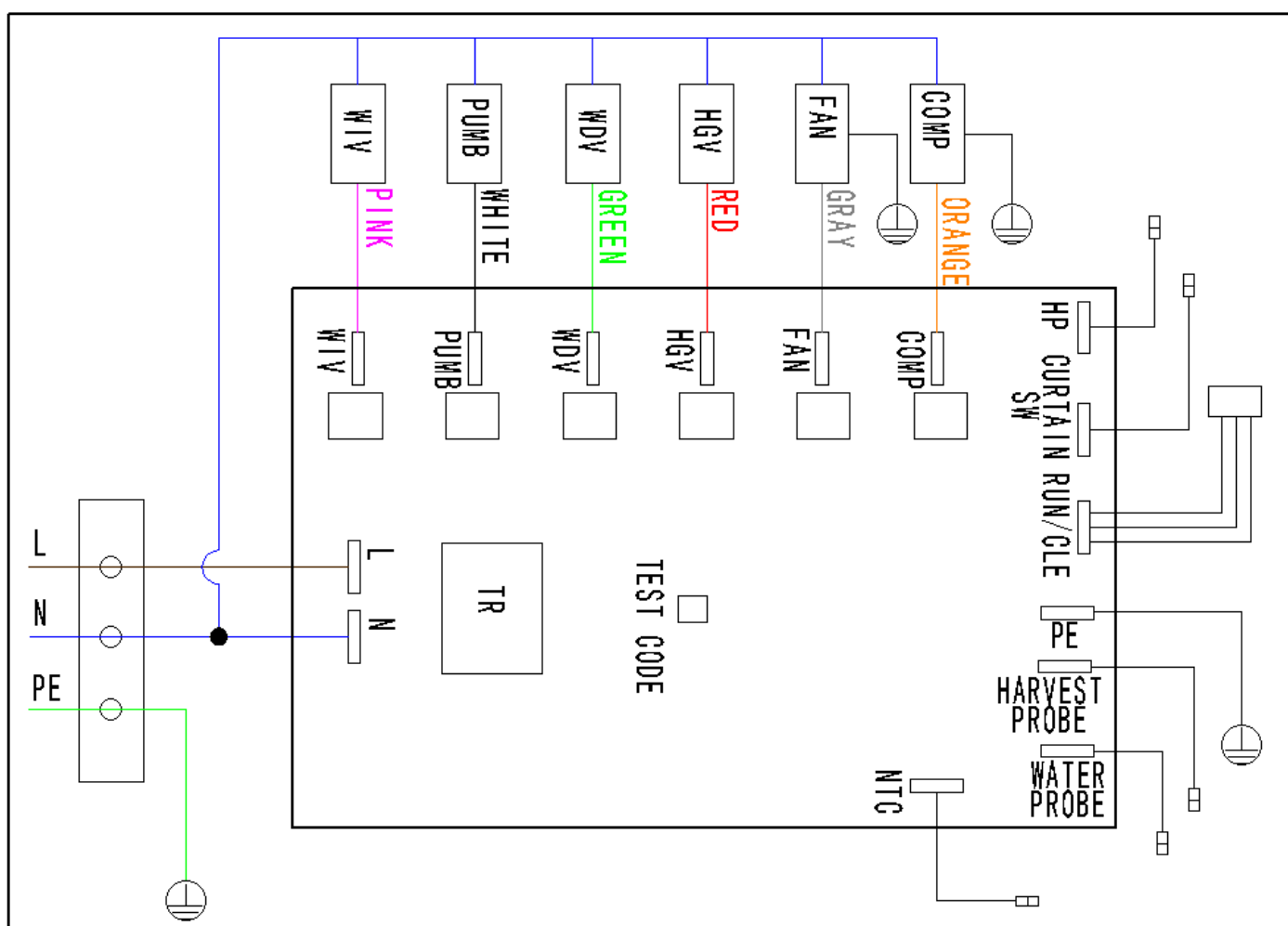
Clean air-filter once a month

## 1.6. Service

**Important**

Technicians must have the correlative certificate of service

### 1.6.1. Diagram



### 1.6.2. Safety protection

- 1) E2: Long harvest cycle, harvest cycle reaches 4min for 100 times, stop.
- 2) E3: High pressure protection, discharge pressure reaches 450psi, stop.
- 3) E4: water lack protection, water probe can't touch water for 5min in freeze cycle, stop.

- 4) E5: condenser temperature alarm, condenser temperature beyond  $-20\sim+80^{\circ}\text{C}$  not stop, D10 (Led)flash fast.

### 1.6.3. 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 0.2soff, 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

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)

## 1.6.4. 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.

## 1.6.5. Waste disposal

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

## 2. Ice Dispenser

### 2.1. General Information

#### 2.1.1. Read This Manual

These instructions are provided to assist the qualified installer. Check your local Yellow Pages for the name of the nearest ATOSA distributor, or call ATOSA service; for information regarding start-up services.

#### 2.1.2. Model Numbers

This manual covers the following models:

##### **CYP160-161**

These dispensers are designed to dispense both dice and half dice ice. These dispensers are used in conjunction with a ATOSA ice machine for automatic fill of dispenser.

- CYP160 Series Dispensers are capable of storing 160 lbs. of ice. The CYP160 accepts a single 22" Dice or Half Dice size ice machine.

NOTE: Dispense Opening: Height 10.6" (27 cm), Width 15.7" (40cm)

## 2.2. Installation Instructions

### 2.2.1. Pre-Installation Checklist

- **Location: Floor drain available** – A floor drain for the dispenser should be available. We recommend that you vent the drain at the back of the dispenser to reduce buildup of algae and improve drainage. Drain tubing should be 1/2" I.D. at minimum.
- **Location: Avoid heat sources** – Avoid placing the ice machine near heat sources such as radiators, heating vents and direct sunlight. Avoid placing air-cooled ice machines in kitchens, due to grease, flour, or other particles, which can collect on the condenser and fan blade, increasing ice machine maintenance and reducing ice machine efficiency.
- **Location: On a solid floor** – The dispenser and ice maker should be sitting on a good, solid, level floor or surface.
- **Location: Do not obstruct traffic** – The dispenser should not extend from the wall in a way that obstructs traffic through the area.
- **Electrical** – Proper electrical voltage is available. Receptacle is available and within six feet.

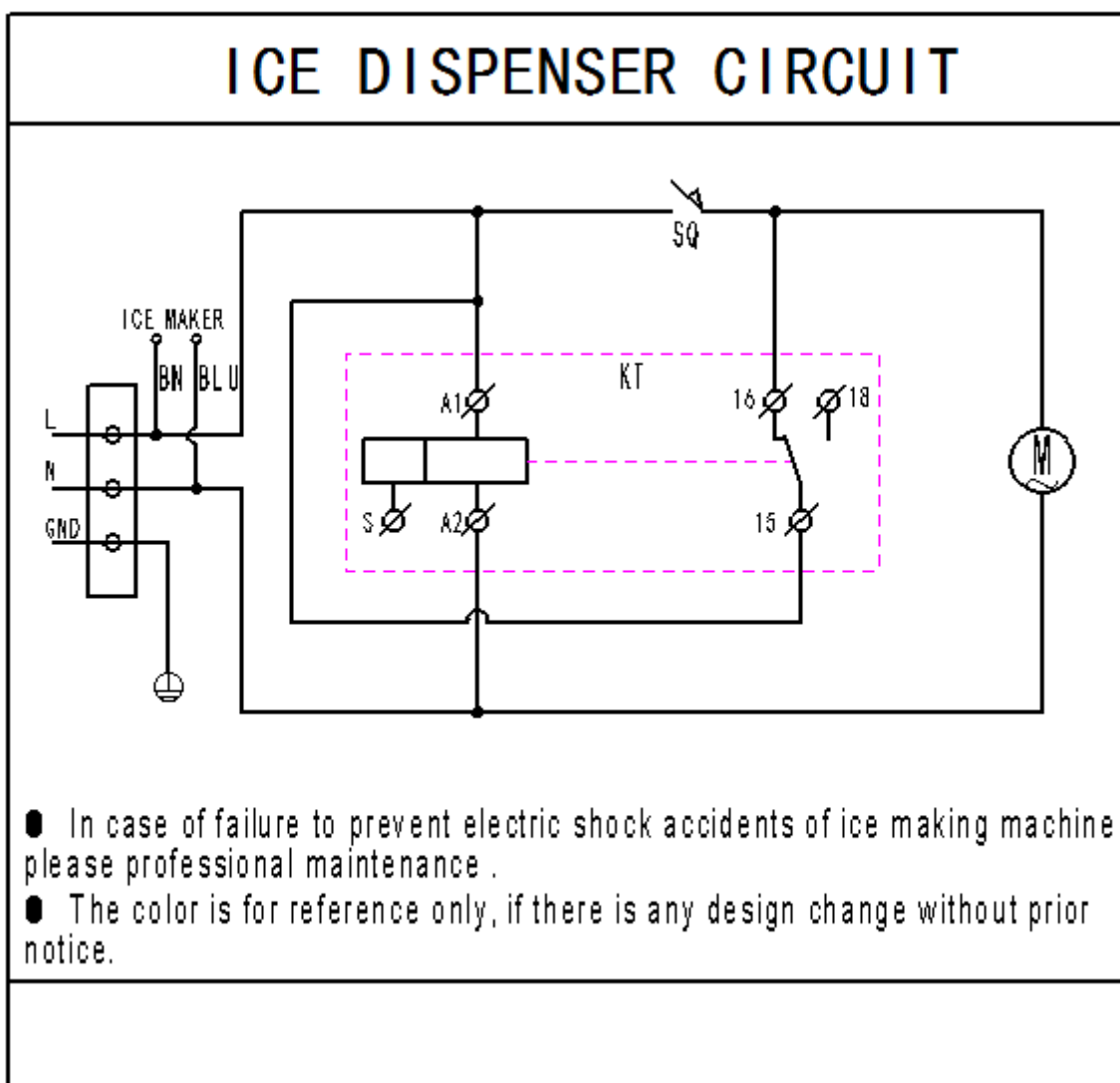
#### **Warning**

- Never use an extension cord. If an electrical outlet is not within six feet, have proper amperage outlet installed. The dispenser must be grounded in accordance with all local and national electrical codes.
- **Clearances for top and both sides of ice machine** – Use clearances specified in the ice machine's Installation, Use and Care Manual.

- **Clearance behind ice machine for dispenser and drains** – The location must allow enough clearance for the water and drain connection at the rear of the dispenser.
- **Back of ice machine to be flush with back of dispenser** – This allows installation of the supplied mounting clip (metal plate) which secures the ice machine to the dispenser.
- **Separate drains** – a separate drain line is required for the ice machine, in addition to a drain line for the Dispenser. Vent all drain lines.
- **Water filtration** – Water filtration is strongly recommended in order to increase the performance of the ice machine and reduce maintenance costs.

For full information about ice machine installation, including plumbing lines, connections and electrical requirements, see the ice machine installation manual.

## 2.2.2. Electrical



### □ **Warning**

- All wiring must conform to local, state and national codes.

#### **SPECIFICATIONS**

<b>Electric Voltage – Cycle – Amp.*</b>	115V60Hz,2.4A
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<b>Motor Horsepower</b>	1/7HP
<b>Fuse Size</b>	15 amp maximum
<b>Operating Temperature Range</b>	50°F minimum – 110°F maximum (10° – 43°C)

## GROUNDING INSTRUCTIONS

### ⚠ Warning

- ⚠ The dispenser must be grounded in accordance with national and local electrical codes.

This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

### ⚠ Warning

- ⚠ Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

## 2.2.3. Installation Procedures

### ⚠ Warning

- ⚠ Do not attempt to move a dispenser without first removing the ice machine. The combination can be unstable and could tip, causing serious injury.

1. Review the Pre-Installation Checklist; then make sure all utility and space requirements are present at the installation site.
2. Remove the carton top from the dispenser.
3. Remove the legs and other accessories from inside the dispenser bin.
4. Remove the dispenser from the shipping pallet.
5. Flatten the shipping carton.
6. Lay the dispenser on its back; on the carton.
7. Thread the legs into the bottom of the dispenser.
8. Set the dispenser upright.
9. Place the dispenser in the desired location.
10. Make sure the dispenser bin top is level. A level bin is important for proper operation of the ice machine.
11. Place the ice machine on top of the dispenser at this time.
12. Connect the drain of the dispenser to the floor drain.
13. Follow local plumbing codes for drain installation.
14. If the dispenser has a water valve, connect your water line to the water connection at the back of the dispenser.
15. Test all drain and water lines for leaks.
16. Plug the dispenser into the proper electrical outlet.
17. Clean and sanitize all equipment. Follow cleaning and sanitizing instructions in this manual.

18. Adjust the ice machine according to the instructions provided with the ice machine.
19. Install ice baffle inside the ice maker compartment. Follow installation instructions supplied with ice baffle.
20. Install foam gasket on the bottom of the front panel.
21. Fill the dispenser bin one quarter full of ice or start the ice machine, allowing the ice machine to drop at least three complete batches of ice.
22. Test the ice dispensing action of the dispenser.

## 2.2.4. Installation Checklist

- Dispenser and ice machine are level?
- Drains are vented?
- Dispenser does not sit in direct sunlight?
- Dispenser does not sit in direct airflow from a heating duct?
- Bin and ice machine drains are separate?
- Ice dispensed properly?
- Ice Machine ice thickness control is properly set?

## 2.3. Operation

### 2.3.1. Sequence of Operation

The operation of the ice dispenser can be divided into three main operations. They are Dispenser Activation, Ice Pick-Up and Ice Delivery.

#### **DISPENSER ACTIVATION**

• **Rocking Chute (Push for Ice) Activation** – User pushes the Rocking Chute, which energizes a microswitch. The energized microswitch engages the gear motor.

#### **ICE PICK-UP**

When the customer activates the dispenser, the gear motor inside the dispenser begins to turn.

The gear motor shaft is attached to the paddle wheel inside the bin of the dispenser. As the paddle wheel turns it picks up ice from the dispenser bin. The paddle wheel will bring the pocket containing the ice to the top of the travel area.

#### **ICE DELIVERY**

When the paddle wheel pocket reaches the top of its travel, the ice falls from the paddle wheel to the ice chute opening of the dispenser bin. The bin chute then directs the ice to the door assembly dispensing 2-3 oz. of ice per second.

If the door closes before all the ice is dispensed, some ice may be held back by the door assembly. If the door is open, the ice will fall through the door and the ice chute.

The ice chute will direct the ice into the customer's container.

NOTE: Dispense Opening: Height 10.6" (27 cm), Width 15.7" (40 cm)

### 2.3.2. Agitation Timers

The agitation timer is standard equipment for the floor standing dispenser. The purpose of the timer is to periodically agitate the ice in the bin to prevent congealing.

The timer is adjustable and is set to agitate the ice for three seconds every three and one half-hours. Activating the dispenser will reset the timer. After 3.5 hours of non-use the timer will energize the dispenser motor.

To check for correct function of the agitation timer, use the following procedure:

The agitation timer is located at the front of the dispenser in the control box, on the left side of the ice chute.

1. The timer will cycle every 55 seconds.
2. If the timer does not cycle every 55 seconds, replace the timer.

**⚠ Caution**

- ⚠ Never operate with jumper removed. Damage will occur.

## 2.4. Maintenance Disassembly

### REMOVING THE FRONT PANEL

**⚠ Warning**

**Electric Shock Hazard**

- ⚠ Unplug unit before servicing or cleaning. The agitator is operated by a timer and can agitate at anytime.

1. Shut off water to ice machine.
2. Loosen the 4 screws with a Phillips screwdriver.



Remove Screws to Disengage Door



Put the panel up from the bottom

3. Remove the black front panel.
4. Lift the front panel off the catch hooks and set the panel aside.

### DISASSEMBLING THE ROCKING CHUTE/DOOR & PADDLE WHEEL GUARD

**⚠ Warning**

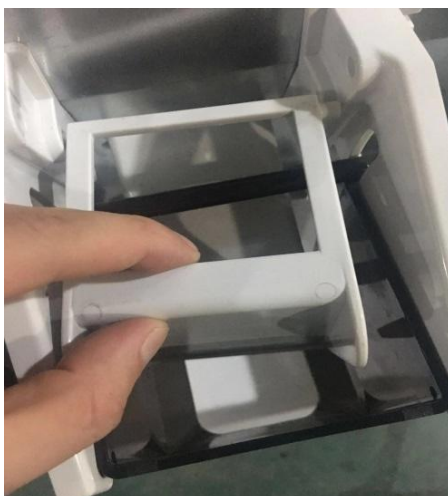
**Electric Shock Hazard**

- ⚠ Unplug unit before servicing or cleaning.

1. Remove the front panel from the dispenser. (See “Removing the Front Panel”.)
2. Remove door lock.



3. Remove Limit bracket



3. Remove Push plate



**⚠ Warning**

- ⚠ Unplug unit before servicing or cleaning.
- ⚠ Ice dispenser bin contains moving parts that can move at any time and will cause injury if hands are in the way.

**DISASSEMBLING THE DISPENSER PARTS FOR BIN CLEANING**

1. These parts will be removed: agitator and paddle wheel.

Paddle Wheel



Agitator

2. Pull on the hand-removable agitator until it is clear of the agitator bushing.



3. Push the agitator toward the back of the bin until the agitator is free of the paddle wheel hub. Remove the agitator by sliding to one side as you pull forward until the agitator shaft clears the bushing.



4. Slide the paddle wheel from the motor shaft and remove.

## 2.4.1. Cleaning and Sanitizing

### MONTHLY SANITIZING PROCEDURE

**⚠ Warning**

**Electric Shock Hazard**

- ⚠ Unplug unit before servicing or cleaning.

1. Remove the front panel, paddle wheel, ice chute and door assembly.
2. Mix a solution of 3 ounces (100 ml) Manitowoc cleaner per 1 gallon (4 liters) plain tap water.

3. Carefully clean all parts removed from inside the bin with this cleaner. Clean the dispenser bin, door assembly, and ice chute.
4. Rinse all cleaned parts with fresh, running tap water.
5. Mix a solution of 3 ounce (90 ml) special sanitizer with 4 gallons (15 liters) plain tap water.
6. Sanitize each part washed in the previous step with this sanitizer solution. Sanitize and re-assemble in this order:
  - Paddle wheel
  - Agitator
  - Ice chute assembly
  - Scrap ice tray
  - Front panel
7. Do not rinse dispenser parts after they are sanitized. Allow parts to air dry.
8. After all dispenser parts are replaced, restore power to the dispenser.
9. Turn the ice machine on.
10. Allow the ice machine to begin filling the dispenser.
11. After three batches are in the dispenser, test the dispenser operation.

## 2.4.2. Removal of the Gearmotor

NOTE: The gearmotor does not have to be removed for cleaning/sanitizing.

**⚠ Warning**

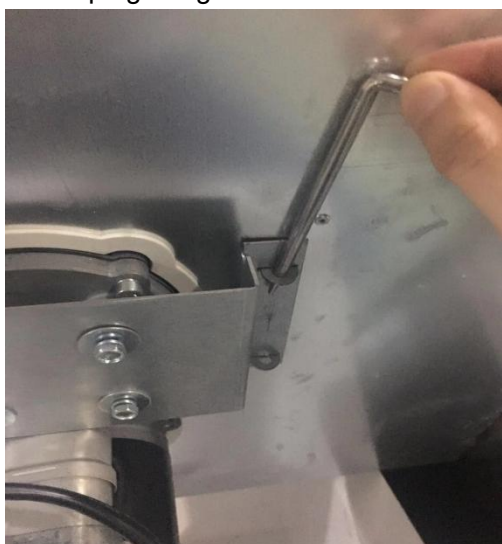
**Electric Shock Hazard**

⚠ Unplug unit before servicing or cleaning.

1. Remove the front panel from dispenser.

(See “Removing the Front Panel”.)

4. Unplug the gearmotor wire.



4. Pull the disassembly pin up.
5. Grasp the gearmotor as the second pin is removed. Pivot the gearmotor out of place.

## 2.5. Customer Support

## 2.5.1. Checklist

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

### ⚠ Warning

⚠ Unplug unit before servicing or cleaning. Ice dispenser bin contains parts that can move at any time and will cause injury if hands are in the way.

#### PROBLEM: ICE DOES NOT DISPENSE WHEN ROCKING CHUTE IS DEPRESSED

Problem	Possible Cause	To Correct
Dispenser does not operate.	No electrical power to dispenser.	Plugged in?
		Breaker tripped?
		Check the cord and plug of the dispenser, Replace cord set if wire is broken.
Dispenser runs but does not dispense ice.	No ice in bin.	Add ice to bin, have ice machine checked.

#### PROBLEM: DISPENSER CRUSHES ICE AS IT DISPENSES

Problem	Possible Cause	To Correct
Dispenser crushes ice as it dispenses.	The ice in the bin is not the proper size and type.	Replace with acceptable ice.
	Is the ice being used a full size piece of ice, i.e., are cubes full, not shallow, etc.?	Adjust ice machine cube size. Refer to ice machine Installation, Use and Care manual for procedure.

#### PROBLEM: ICE CONTINUES TO DISPENSE OR DISPENSES BY ITSELF

Problem	Possible Cause	To Correct
Dispenser agitates every 55 seconds.	The timer did not return to its default location	Call for Service.
Does ice continue to dispense after the up has been pulled away?	Does the gearmotor continue to run during this time?	Call for Service.

## 2.6. Commercial Ice Machine Warranty

### **2 YEAR WARRANTY**

All claims for parts or labor must be made directly through Atosa. All claims must include: model number of the unit, the serial number, proof of purchase, date of installation, and all pertinent information supporting the alleged defect. In case of compressor replacement under warranty, either compressor or compressor tag must be returned to Atosa along with above listed information.

***Failure to comply with warranty policies will result in voiding claims.***

### **Two Year Parts & Labor Warranty**

Atosa warrants all new refrigerated components, such as the cabinet and all parts, to be free from defects in materials or workmanship. Atosa's obligation under this warranty is limited to a period of two (2) years from the date of original installation or 27 months after shipment date from Atosa, whichever occurs first. All parts covered under this warranty that are defective within two (2) years of original installation or twenty seven (27) months after shipment date from manufacturer, whichever occurs first, are limited to repair or replacement (including labor charges, of defective parts or assemblies). The labor warranty shall include standard straight time labor charges only and reasonable travel time, as determined by Atosa.

### **Additional Three Year Compressor Warranty**

In addition to the two (2) year warranty stated above, Atosa warrants its sealed compressor to be free from defects in both material and workmanship under normal and proper use and maintenance service for a period of three (3) additional years from the date of original installation, but not to exceed five (5) years. Compressors that have been determined to be defective from Atosa within this extended period will be either repaired or replaced with a compressor or compressor parts of similar design and capacity according to Atosa's discretion. The three (3) year extended compressor warranty applies only to sealed parts of the compressor and does not apply to any other parts or components. This includes, the cabinet, paint finish, temperature control, refrigerant, metering device, motor starting equipment, fan assembly, and other electrical components, etc.

### **R290 Compressor Warranty**

The five-year compressor warranty detailed above will be void if the following procedure is not carefully adhered to:

1. This system contains R290 refrigerant and lubricant. The lubricant has rapid moisture absorbing qualities.
2. Drier replacement is very important and must be changed when a system is opened for servicing.
3. Micron level vacuums must be achieved to insure low moisture levels in the system.
4. Compressor must be obtained through Atosa, unless otherwise specified in writing, through Atosa's warranty department.

### **What is Not Covered by This Warranty**

Atosa's sole obligation under this warranty is limited to either repair or replacement of parts, subject to the additional limitations below. This warranty neither assumes nor authorizes any person to assume obligations other than those expressly covered by this warranty.

**ROUTINE MAINTENANCE REQUIREMENTS MUST BE FOLLOWED OR WARRANTY IS VOID**

Cleaning, Sanitation and Maintenance:

Ice machines require 3 types of maintenance: Removal of any build up of mineral scale from the ice machines water system and sensors, sanitize the ice machine's water system and ice storage bin or dispenser and cleaning the condenser.

**NO CONSEQUENTIAL DAMAGES:** ATOSA IS NOT RESPONSIBLE FOR ECONOMIC LOSS; PROFIT LOSS; OR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSSES, OR DAMAGES ARISING FROM FOOD OR PRODUCT SPOILAGE, REGARDLESS OF WHETHER OR NOT THEY RESULT FROM REFRIGERATION FAILURE.

**WARRANTY IS NOT TRANSFERABLE:** This warranty is not assignable and applies only in favor of the original purchaser/user to whom delivered. ANY SUCH ASSIGNMENT OR TRANSFER SHALL VOID THE WARRANTIES HEREIN AND SHALL VOID ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR LABOR COVERAGE FOR COMPONENT FAILURE OR OTHER THE WARRANTY PACKET PROVIDED WITH THE UNIT.

**ALTERATION, NEGLIGENCE, ABUSE, MISUSE, ACCIDENT, DAMAGE DURING TRANSIT OR INSTALLATION, FIRE, FOOD, OR ACTS OF GOD:** Atosa is not responsible for the repair or replacement of any parts that are determined to have been subjected after the date of manufacture to alteration, neglect, abuse, misuse, accident, damage during transit or installation, fire, flood, or act of God.

**IMPROPER ELECTRICAL CONNECTIONS:** Atosa IS NOT RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF FAILED OR DAMAGED COMPONENTS RESULTING FROM ELECTRICAL POWER FAILURE, THE USE OF EXTENSION CORDS, LOW VOLTAGE, OR VOLTAGE DROPS TO THE UNIT.

**THE TWO (2) YEAR PARTS & LABOR WARRANTY AND THE ADDITIONAL THREE (3) YEAR COMPRESSOR WARRANTY ARE AS DESCRIBED ABOVE. THESE WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, INCLUDING IMPLIED WARRANTY AND MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.**

**Outside U.S. and Canada:** This warranty does not apply to areas outside the continent of the United States. Atosa is not responsible for any warranty claims made on products sold or used in such areas.

**\*In some cases, a 25% restocking fee may be charged to a buyer for returned items.\* Atosa may at any time modify our equipment in order to provide and insure a superior product. Change is sometimes necessary to keep up with today's high standards in our industry. Atosa reserves the final interpretation of all public materials.**

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

Installation Date \_\_\_\_\_