

Ice-O-Matic[®]

Installation, Start-Up and Maintenance Manual

ICE SERIES CUBERS

ICE0250 through ICE2100 Series*

ICEU150, ICEU220 and ICEU300 Undercounter Series*

ICE0320, ICE0520, ICE0726, ICE0926 22 Inch Series*

***INCLUDES 230/50/1 VOLT UNITS**



How To Use This Manual

Ice-O-Matic provides this manual as an aid to the service technician in installation and maintenance of the **ICE Series** (electro-mechanical) cube ice machines. Do not attempt to perform installation, start-up or maintenance unless you have read and fully understand this manual.

For a Service Provider, please reference our “Find a Service Technician” tab at www.iceomatic.com

Keep this manual for future reference.

The ICE Series Service Parts Manuals are available separately.

Ice-O-Matic icemakers and dispensers are not approved for outdoor installation.

WARNING: Always disconnect electrical power and shut off water supply whenever maintenance or repairs are performed on the ice machine and related equipment.

CAUTION: Always wear protective eyewear whenever maintenance or repairs are performed on the ice machine and related equipment.



Ice-O-Matic has partnered with ENERGY STAR since 2004 to ensure our customers receive the most efficient ice machines for your investment dollar. Ice-O-Matic is committed to the continuous improvement in both energy efficiency and productivity thereby delivering the best value in energy efficient ice machines money can buy.

For a detailed list of ENERGY STAR qualified Ice-O-Matic ice machines, go to:

<http://www.iceomatic.com/Products/Sales-Literature/#>



Plant-a-Tree Program

As part of our commitment to the global environment, Ice-O-Matic is devoted to sustainability in every aspect of our business. To offset the carbon footprint of our factory in Denver, we not only recycle materials in our packaging and manufacturing but also recycle our industrial and office waste products.

More important, we partner with AMERICAN FORESTS and plant a tree for every ice machine we sell, thereby supporting reforestation of key regions throughout the world. Our goal is to plant 150,000 trees through our Global Sustainability program. Trees reduce topsoil erosion, prevent harmful land pollutants from getting into our waterways and replace air pollutants with fresh, clean oxygen.

Ice-O-Matic Warranty

Every Ice-O-Matic ice maker is backed by a warranty that provides both parts and labor coverage. To view the warranty details, register products, or check your warranty status visit the “Warranty and Water Filter Registration” page on www.iceomatic.com

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Freight Claims Important!**Inspect Promptly**

This merchandise has been carefully inspected and packed in accordance with the carrier's packing specifications. Responsibility for safe delivery has been assumed by the carrier. If loss or damage occurs, you as the consignee must file a claim with the carrier and hold the container for carrier's inspection.

Visible Loss or Damage

Any external evidence of loss or damage must be fully described and noted on your freight bill or express receipt and signed by the carrier's agent. The claim should be filed on a form available from the carrier.

Concealed Loss or Damage

If loss or damage does not appear until merchandise has been unpacked, make a written request for inspection by the carrier within 15 days of the delivery date. Then file a claim on a form from the carrier.

File Claim Without Delay**Do Not Return Damaged Merchandise to Ice-O-Matic**

Model and Serial Number Format

Note: Sample of Serial Number Data Plate

MODEL NUMBER ICE0400HA2


SERIAL NUMBER 04071280010123


AC SUPPLY VOLTAGE ~ 115 HERTZ 60
 TOTAL LOAD AMPS PHASE 1
 MINIMUM CIRCUIT AMPACITY 14.4 WIRES 2
 MAX FUSE SIZE OR HACR TYPE CIRCUIT BREAKER 15.0
 HEATER WATTS

MOTORS	VOLTS	RLA/FLA	W/HP	LRA
1 COMPRESSOR	115	9.5		51.0
1 FAN DRIVE	115	2.0	0.06HP	
1 HARVEST	115	.1	3W	
1 PUMP	115	.4	31W	

RATED POWER CONSUMPTION (KW) 0
 REFRIGERANT R404A CHARGE/CIRCUIT 30 OZ 849 GRAMS
 NUMBER OF REFRIGERANT CIRCUITS 1

DESIGN PRESSURES P.S.I. 252 -LO 500 -HI
 BARS 17.7 -LO 35.1 -HI

 LISTED 361P US
 ICE MAKER WITHOUT STORAGE MEANS




MILE HIGH EQUIPMENT CO.
 DENVER, COLORADO 80239
 MADE IN U.S.A.


RATED ENERGY EFFICIENCY (KWH/100 LB) 6.5 (KJ/KG) 555.6
 MINIMUM BIN ENERGY EFFICIENCY (%) NA

Verified in Accordance With Energy Standard CAN/CSA 742-98 and ARI 810-91 by Underwriters Laboratories Inc.
 Approved City of Los Angeles Mechanical Testing Laboratory M-860074
 Accepted for use City of New York Department of Buildings MEA 37-00-E

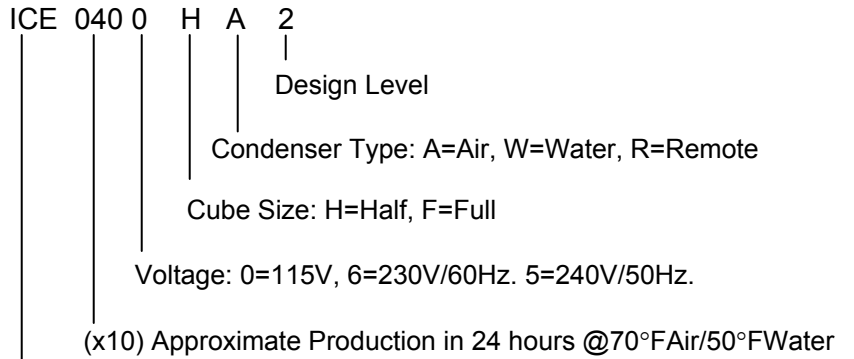
MODEL NUMBER ICE0400HA2
SERIAL NUMBER 04071280010123

VOLTS/HERTZ/PHASE 115/60/1 MAX FUSE SIZE 15.0
 REFRIGERANT R404A CHARGE/CIRCUIT 30 OZ 849 GRAMS

 LISTED 361P US
 ICE MAKER WITHOUT STORAGE MEANS



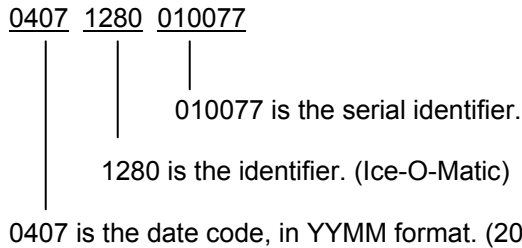
The serial number format and machine specifics are detailed on the data plate.



Series: Environmental Cuber (Uses HFC Refrigerant)

This format is 14 characters long and begins with a date code followed by the Ice-O-Matic identifier, and then a sequential number. This is an entirely numerical serial number.

The serial number will look like the example.



← Large data plate will be placed on the back of the unit.

← Small data plate will be placed by the service valves.

The date code will change monthly and yearly to reflect the date of manufacture.

Installation Guidelines

For proper operation of the Ice-O-Matic ice machine, the following installation guidelines must be followed. Failure to do so may result in loss of production capacity, premature part failures, and may void all warranties.

Reference the installation parameters prior to installing the machine:

Ambient Operating Temperatures

Minimum Operating Temperature: 50°F (10°C)

Maximum Operating Temperature 100°F (38°C), 110°F (43°C) on 50 Hz. Models.

Note: Ice-O-Matic icemakers and dispensers are not approved for outdoor installation.

Incoming Water Supply (See Electrical and Plumbing Diagrams for line sizing)

Minimum incoming water temperature: 40°F (4.5°C)

Maximum incoming water temperature: 100°F (38°C)

Minimum incoming water pressure: 20 psi (1.4 bar) (0.138MPa)

Maximum incoming water pressure: 60 psi (4.1 bar) (0.414 MPa)

Note: If water pressure exceeds 60 psi (4.1 bar), a water pressure regulator must be installed.

Drains

All drain lines must be installed per local codes. Flexible tubing is not recommended. Route bin drain, purge drain and water condenser drain individually to a floor drain. The use of condensate pumps for draining water is not recommended by Ice-O-Matic. Ice-O-Matic assumes no responsibility for improperly installed equipment.

Note: The purge drain fitting is plastic; DO NOT apply heat to the purge drain area; DO NOT overtighten.

Water Filtration

A water filter system should be installed with the ice machine.

Clearance Requirements

Self-contained air cooled ice machines must have a minimum of 6 inches (15cm) of clearance at the rear, top, and sides of the ice machine for proper air circulation. Exceptions such as Top Air Discharge machines will be listed in the machine specification sections.

Stacking

Ice-O-Matic does not endorse stacking ice machines.

Dispenser Application

A thermostatic bin control kit should be installed if the ICE Series ice machine is placed on a dispenser. A bin top may or may not be required. **(Exception is the CD400 Series Dispenser)**

Electrical Specifications

Refer to the serial plate at the rear of the ice machine to make sure proper voltage and circuit breaker size have been supplied. Make sure the machine is on a dedicated circuit. European installations require that the electrical supply fixed wiring must be provided with a disconnect means having a separation of at least 3mm in all poles. The ice machines are provided without an electrical cord set and are designed and agency approved to be permanently connected.

The 115 volt Undercounter series ice makers are supplied with an electrical cord, all other ice makers will need to be installed and wired per local electrical codes. A GFI outlet is not approved.

Caution: Electrical connection must be made or a cord installed by a qualified electrician or there is danger of an electrical fire.

Adjustments

Level the machine within 1/8 inch in all directions.

Check the bin control for proper adjustment.

Check the water in the water trough for proper level.

Check the ice bridge for proper thickness.

Check the water regulating valve adjustment if water cooled.

Remove the bin carton and tip the bin on its back to remove the skid and attach the bin legs.

Secure the machine on top of the bin or dispenser.

Attach the ice machine to the bin with the mounting straps provided with the bin or dispenser. Insure that the back of the ice machine is flush with the back of the bin. Proper functioning of the bin door requires the bin door, when it is opened, to be in a stable position.

If the ice machine is too far forward on the bin, the opened door may not be stable, resulting in an unexpected closing of the bin door. If the ice machine is to be mounted on a bin or dispenser other than an Ice-O-Matic, refer to the manufacturers instructions for machine mounting. Ice-O-Matic will not be responsible for damage or injury that results from unexpected closing of the bin door as a result of the ice machine being too far forward on the bin.

Important!

A water filtration system should be installed with all ice machines. Check the filter manufacturer's instructions for proper installation.

All water supply lines must be installed per local codes. Use 1/4 inch O.D. minimum on air cooled machines. On water cooled machines 3/8 inch O.D. minimum tubing must be run to the condenser. The water supply for the float can "T" off from the condenser line using 1/4 inch O.D. minimum tubing. Make 2 coils of extra tubing so that the machine can be pulled away from the wall if service is needed.

All drain lines must be installed per local codes. The purge drain should be a minimum of 5/8 inch O.D. tubing. The condenser drain on water cooled units should be 3/8 inch O.D. minimum. The drain line fittings on Ice-O-Matic bins are 3/4 FPT. The bin drain should be a minimum of 3/4 inch O.D. Cold water drains should be insulated to prevent condensation from forming.

Warning!

Do not apply heat directly to the back of bin as damage may occur to plastic parts.

Do not over tighten the purge drain fitting as damage may occur to plastic parts.

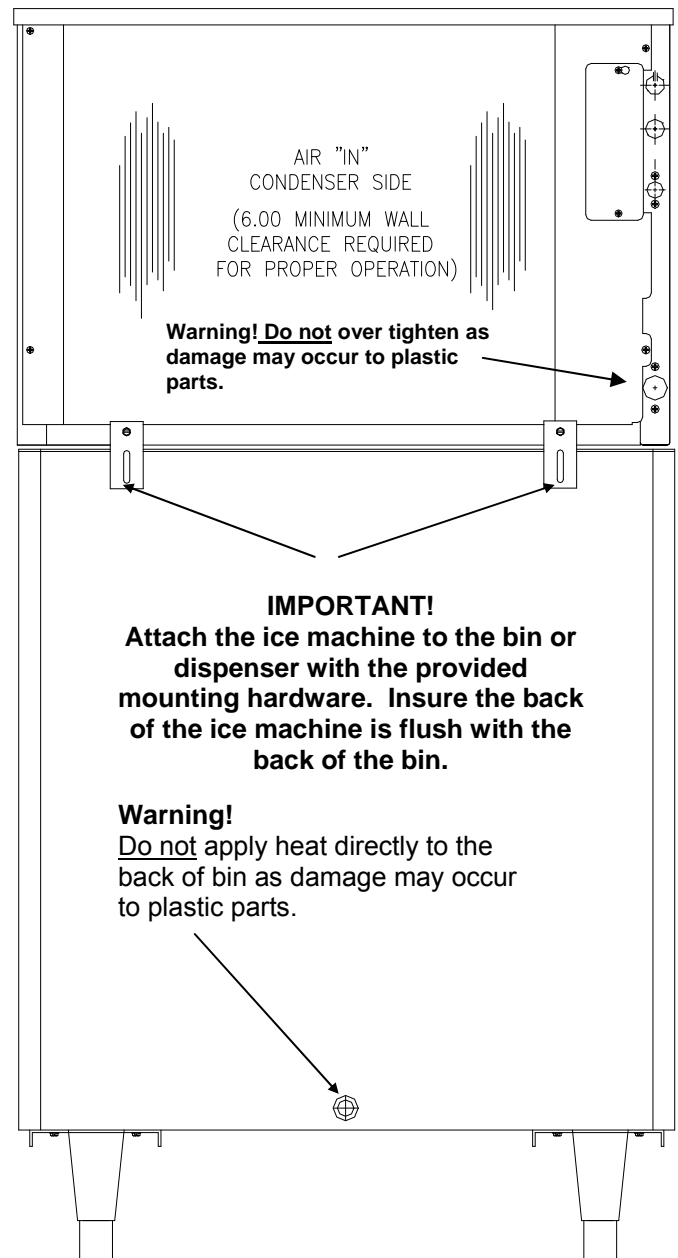
Connect power supply to the terminal block in the control box or at the rear junction box if equipped.

Ensure the machine is level within 1/8 inch in all directions.

Remove any shipping or packaging material.

If the machine has a remote condenser, reference the Remote Condenser Installation Guidelines.

Once the machine has been installed, follow the start-up procedures.



Remote Condenser Installation

For proper operation of the Ice-O-Matic ice machine, the following installation guidelines must be followed. Failure to do so may result in loss of production capacity, premature part failure, and may void all warranties.

Use the following for planning the placement of the remote condenser relative to the ice machine.

Location Limits: Remote condenser location must not exceed ANY of the following:

- Maximum rise from the ice machine to the remote condenser is 35 physical feet.
- Maximum drop from the ice machine to the remote condenser is 15 physical feet.
- Physical line set maximum length is 75 feet.
- Calculated line set length maximum is 100 feet.
- Ambient operating temperatures: -20°F (-28.9°C) to 120°F (48.9°C)

Calculation Formula

- Drop = $dd \times 6.6$ (dd = distance in feet)
- Rise = $rd \times 1.7$ (rd = distance in feet)
- Horizontal Run = $hd \times 1$ (hd = distance in feet)
- Calculation: Drop(s) + Rise(s) + Horizontal Run = $dd+rd+hd$ =Calculated Line Length

Configurations that do NOT meet these requirements must receive written authorization from Ice-O-Matic. This includes multipass or rack system remote condensers.

Do NOT:

- Route a line set that rises, then falls, then rises.
- Route a line set that falls, then rises, then falls.

Remote Condenser Location:

Limited to a 25, 40, 45, 60 or a 75 foot length of precharged refrigerant tubing connecting the ice machine to the remote condenser. The remote condenser must be above or level with the ice machine. Select the best available location, protecting the remote condenser from extremes of dirt, dust and sun. Meet all applicable building codes. Usually the services of a licensed electrician are required.

Roof Attachment:

1. Install and attach the remote condenser to the roof of the building, using the methods and practices of construction that conform to the local building codes, including having a roofing contractor secure the remote condenser to the roof.
2. Have an electrician connect the remote condenser fan motor wires to the ice machine, using the junction box at the back of the ice machine.

Precharged Line Set Routing

CAUTION: Do not connect the precharged tubing until all routing and forming of the tubing is complete. See the coupling instructions for connecting information.

1. Each set of precharged tubing refrigerant lines consists of a 3/8 diameter liquid line and a 1/2 inch diameter discharge line. Both ends of each line have quick connect couplings, one end has a Schrader valve connection which goes to the condenser.

Note: The openings in the building ceiling or wall, listed in the next step, are the minimum sizes recommended for passing the refrigerant lines through.

2. Have the roofing contractor cut a minimum hole for the refrigerant lines of 2.50 inch. Check local codes, a separate hole may be required for the electrical power to the condenser.

CAUTION: DO NOT KINK OR CRIMP REFRIGERANT TUBING WHEN INSTALLING IT.

3. Route the refrigerant lines through the roof opening. Follow straight line routing whenever possible. Any excess tubing **MUST** remain within the building.
4. Spiral the excess length of precharged tubing inside the building. Use a horizontal spiral to avoid any traps in the lines.
5. Have the roofing contractor seal the holes in the roof per local codes.

CAUTION: The couplings on the sets of precharged lines are self sealing when installed properly. Carefully follow the instructions in the VRC manual.

The following remote ice makers incorporate the mixing valve in the condenser. This configuration allows up to a 100 foot calculated remote line set run. Reference the diagram below to calculate the maximum 100 foot line set run. Maximum **actual line set run** is limited to 100 ft. Add ¼ ounce of refrigerant for each actual foot from 75 feet to 100 feet actual lineset run.

ICE Machine Model Number	Remote Condenser Model Number
ICE2106/7R	VRC5061B
ICE1806/7R	VRC5061B
ICE1506HR	VRC2661B
ICE1405/6/7R	VRC2661B
ICE1006R	VRC2061B
ICE0926R	VRC2061B
ICE0806R	VRC2061B
ICE0726R	VRC2061B
ICE0606R	VRC1061B
ICE0500R	VRC1001B

Limitations for remote machines that have the mixing valve mounted in the condenser.

Maximum Rise is 35 feet.

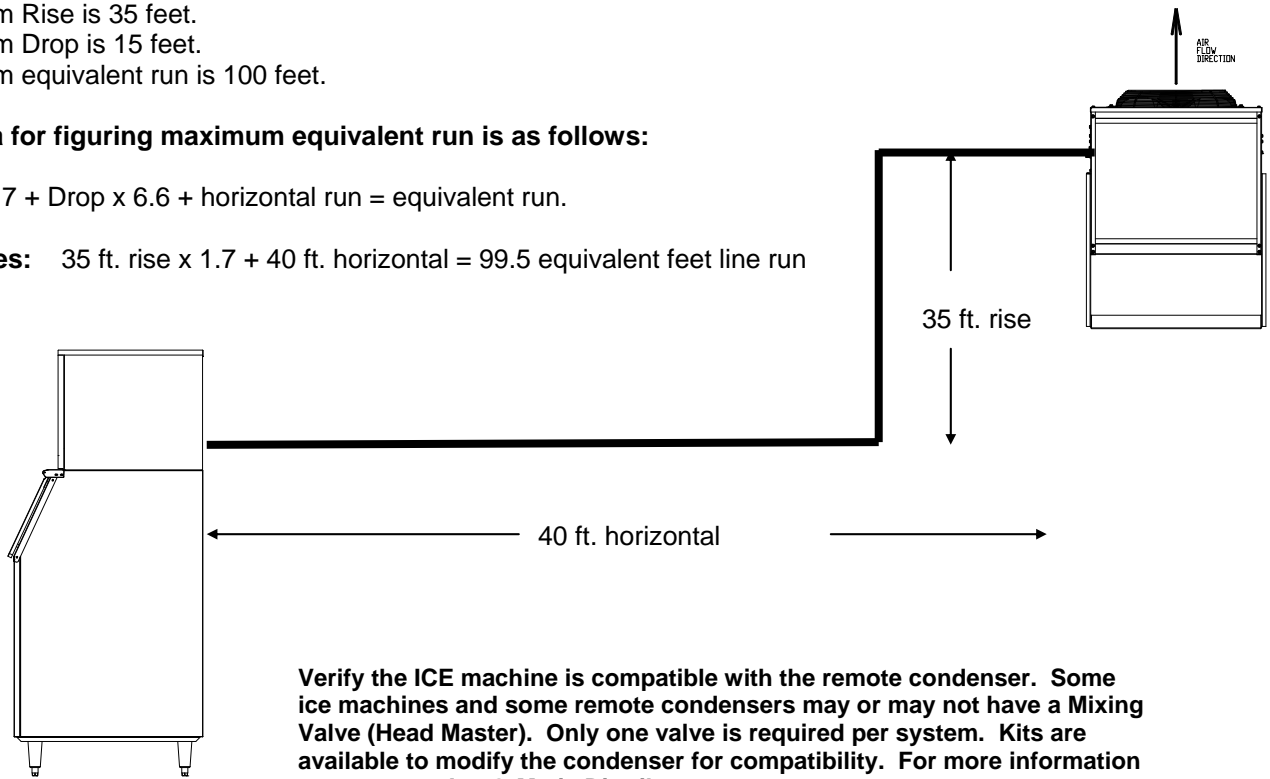
Maximum Drop is 15 feet.

Maximum equivalent run is 100 feet.

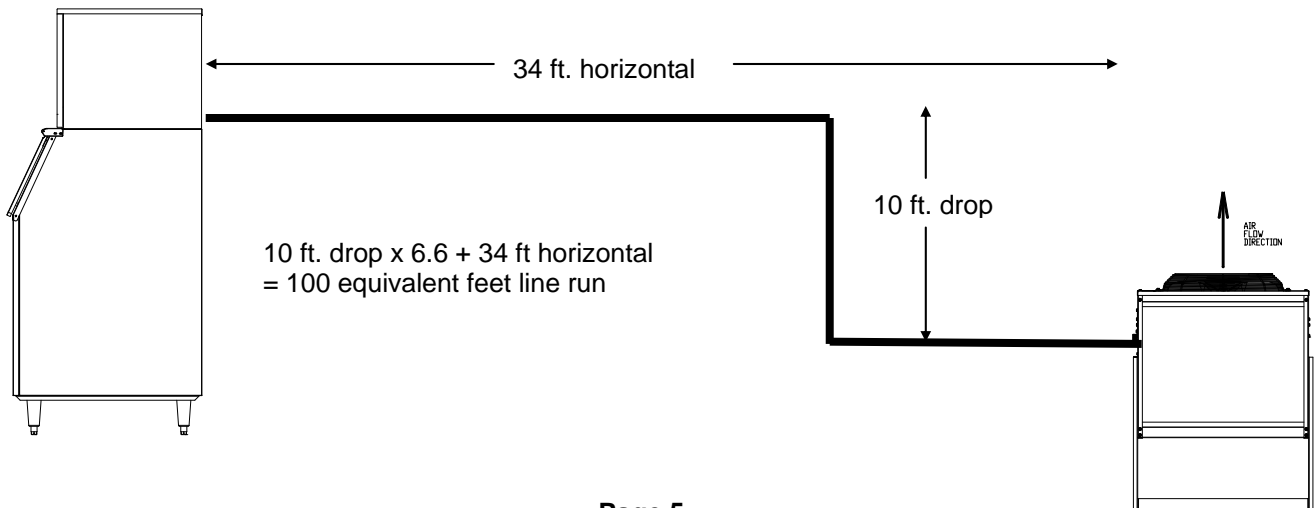
Formula for figuring maximum equivalent run is as follows:

Rise x 1.7 + Drop x 6.6 + horizontal run = equivalent run.

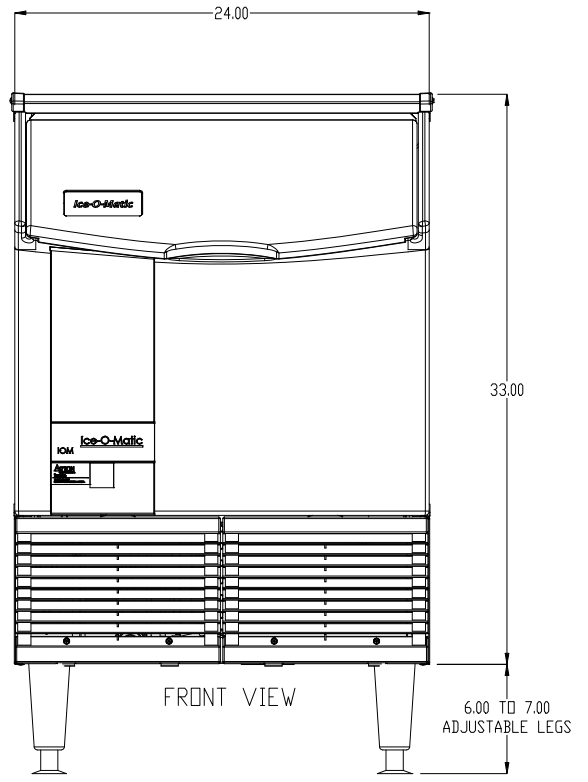
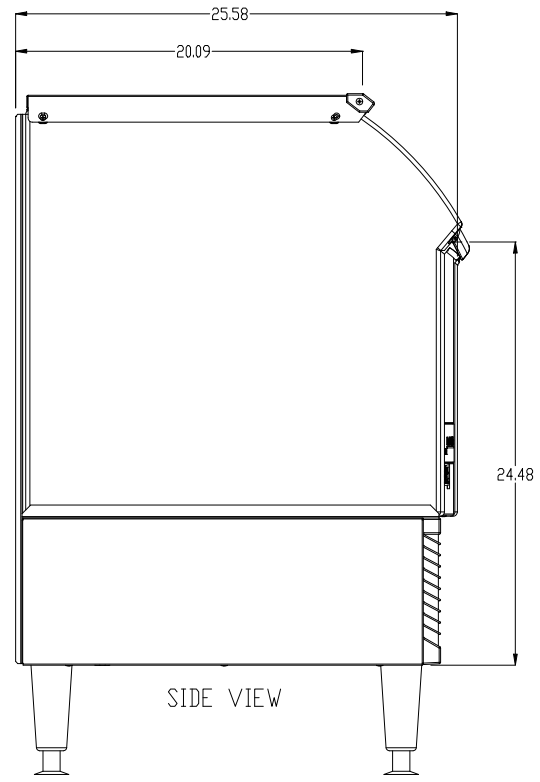
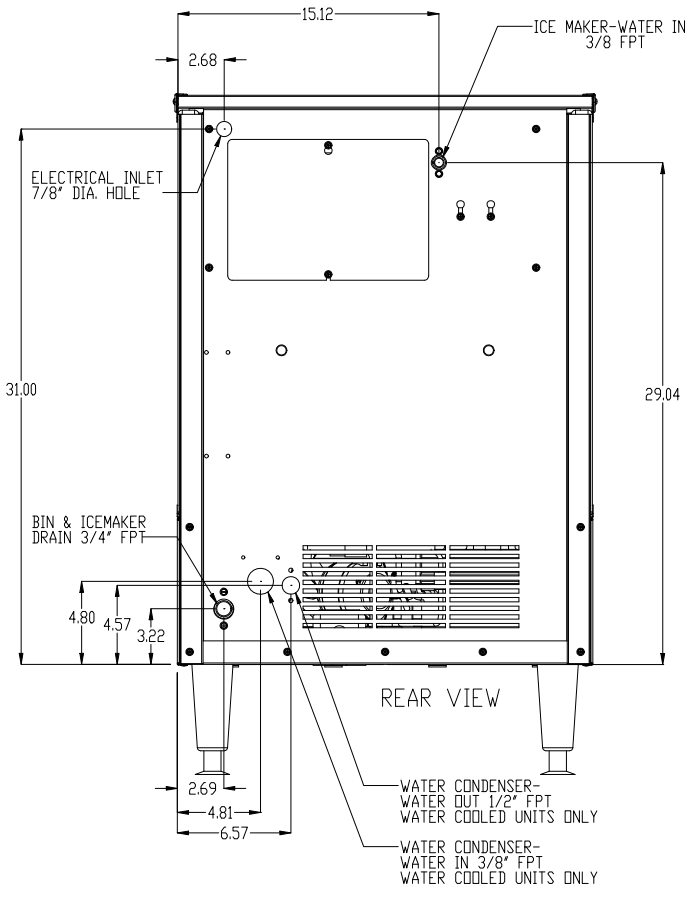
Examples: 35 ft. rise x 1.7 + 40 ft. horizontal = 99.5 equivalent feet line run



Verify the ICE machine is compatible with the remote condenser. Some ice machines and some remote condensers may or may not have a Mixing Valve (Head Master). Only one valve is required per system. Kits are available to modify the condenser for compatibility. For more information contact your Ice-O-Matic Distributor.



Electrical and Plumbing Requirements: ICEU150, 220, 225 and 226



Note: The ICEU150, 220, 225 and 226 do not have a splash curtain.

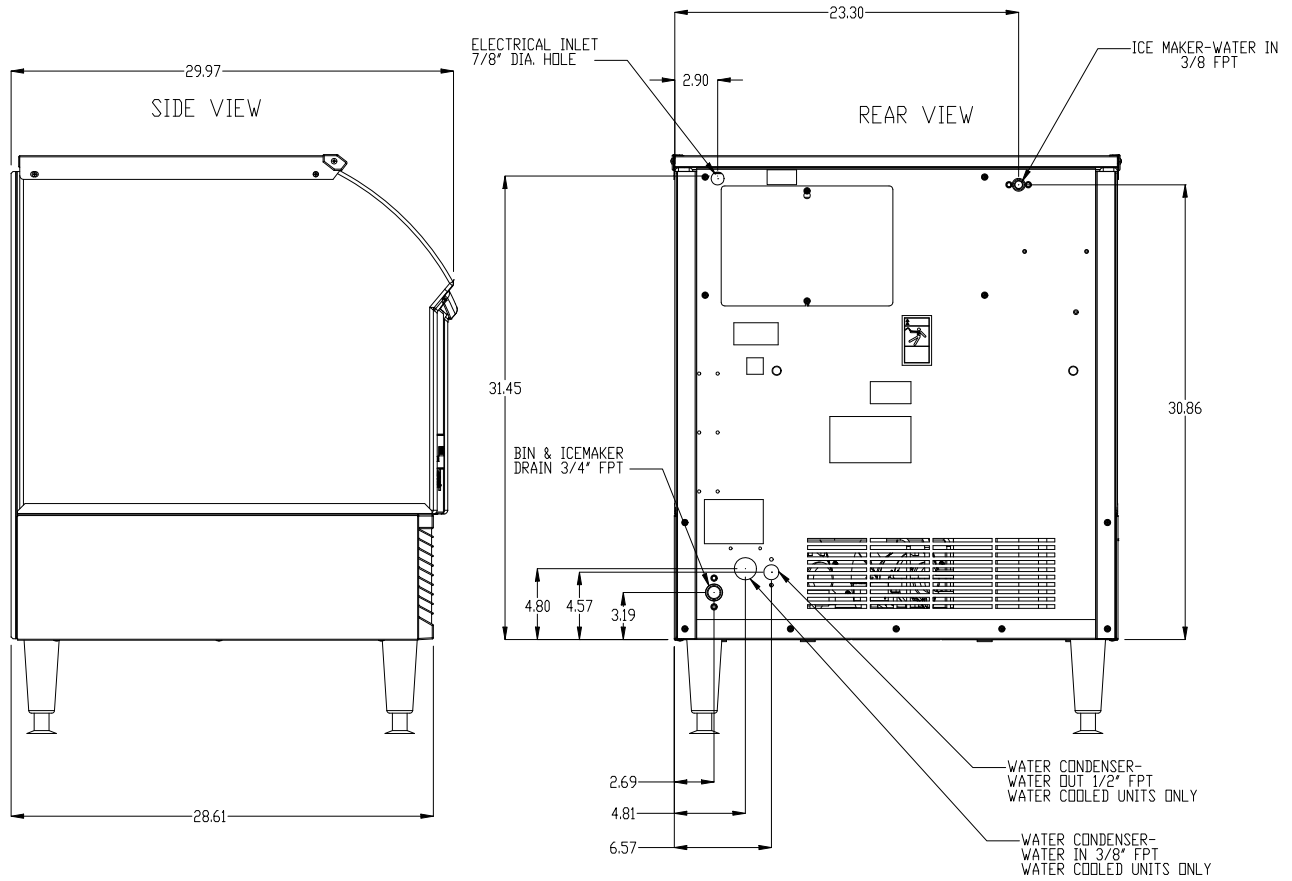
These models utilize a thermostatic bin control in place of a mechanical bin switch.

ON-OFF-WASH Switch is located in the control box.

Remove the grill screws to access the control box.



Electrical and Plumbing Requirements: ICEU300 and 305

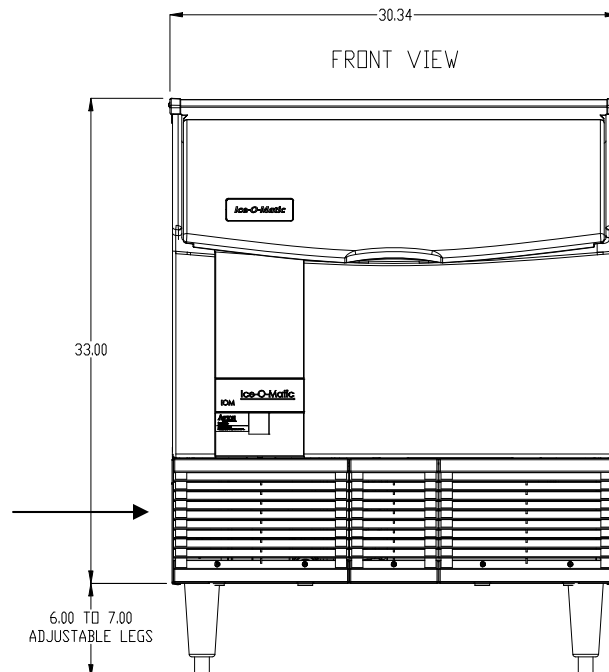


Note: The ICEU300 and ICEU305 do not have a splash curtain.

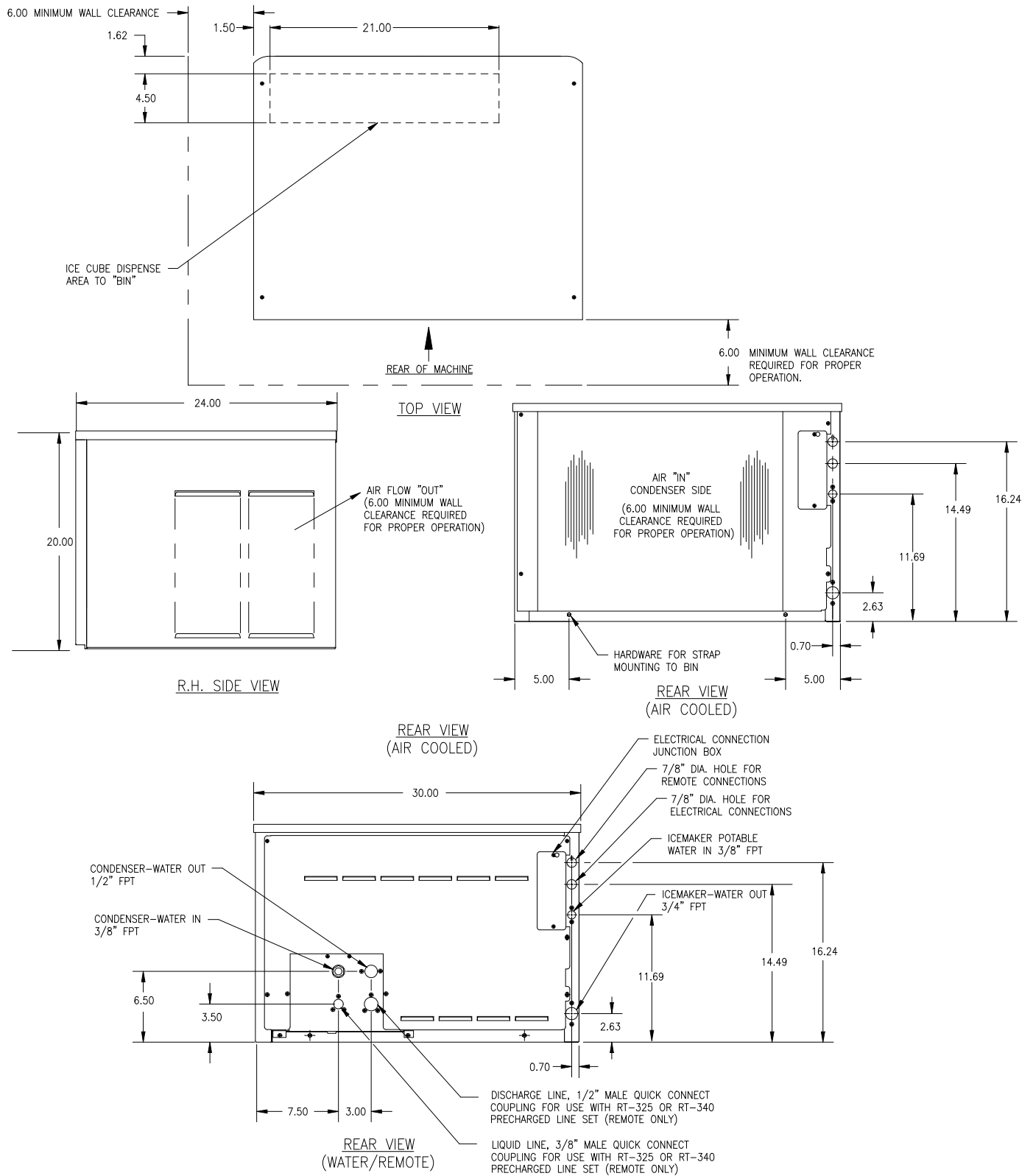
These models utilize a thermostatic bin control in place of a mechanical bin switch.

ON-OFF-WASH Switch is located in the control box.

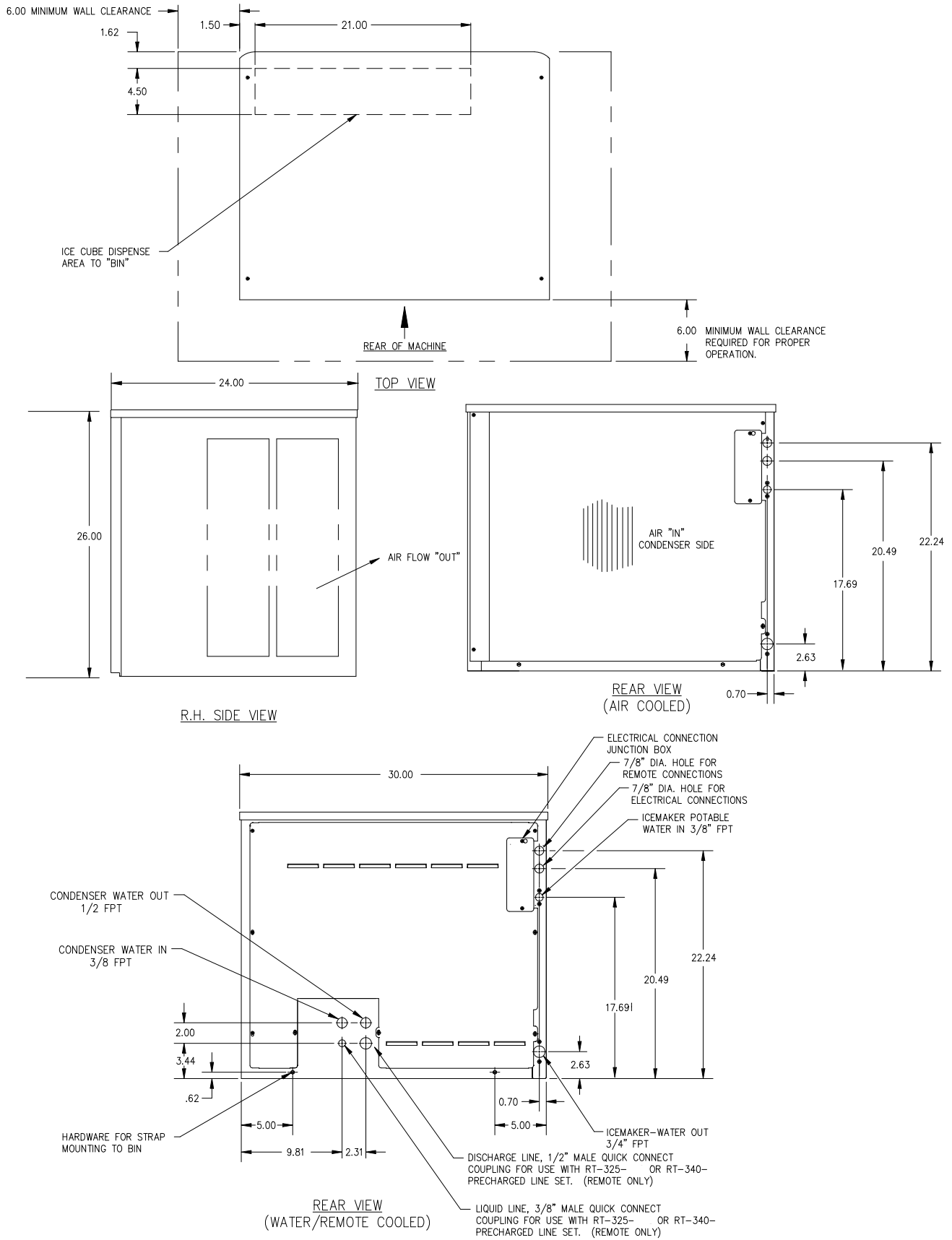
Remove the grill screws to access the control box.



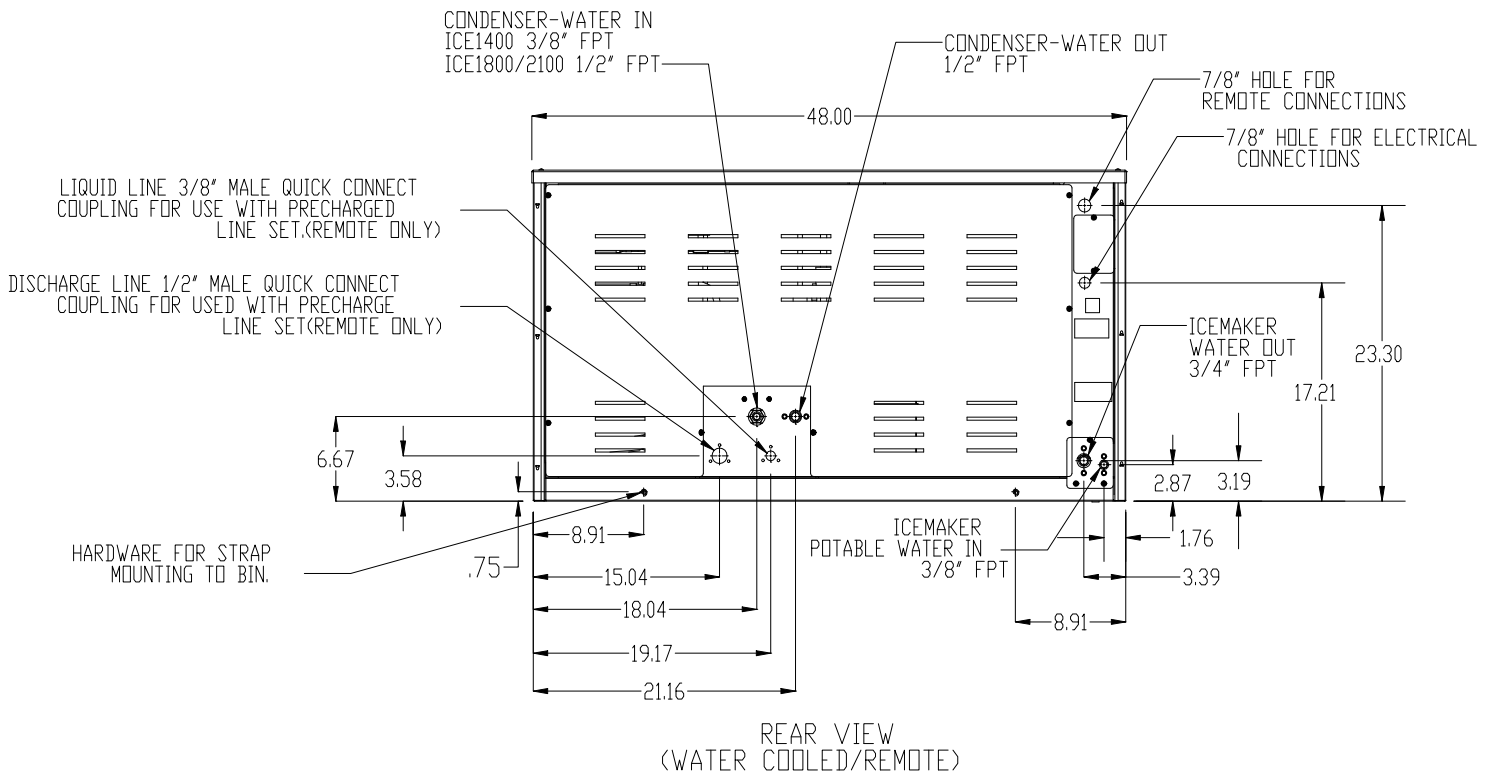
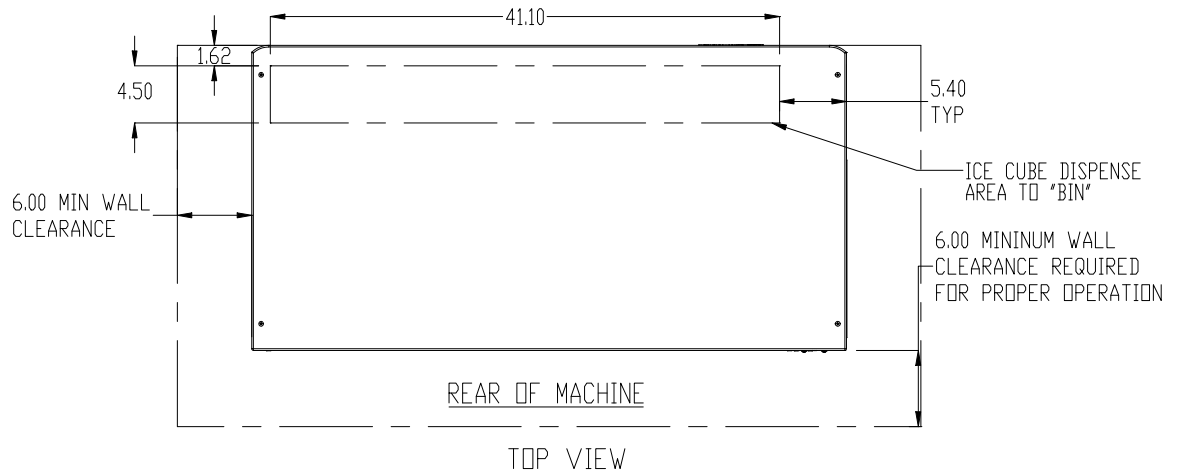
Electrical and Plumbing Requirements: ICE0250, ICE0305, ICE0400/5/6, ICE0500 and ICE0605/6



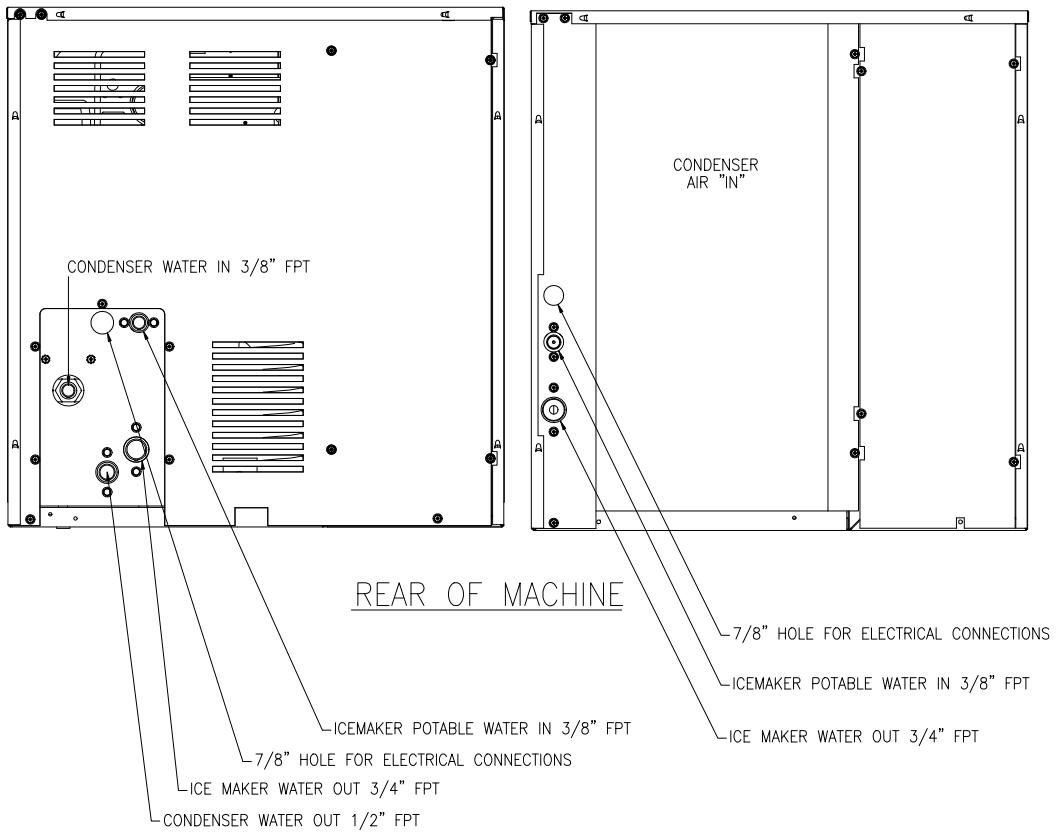
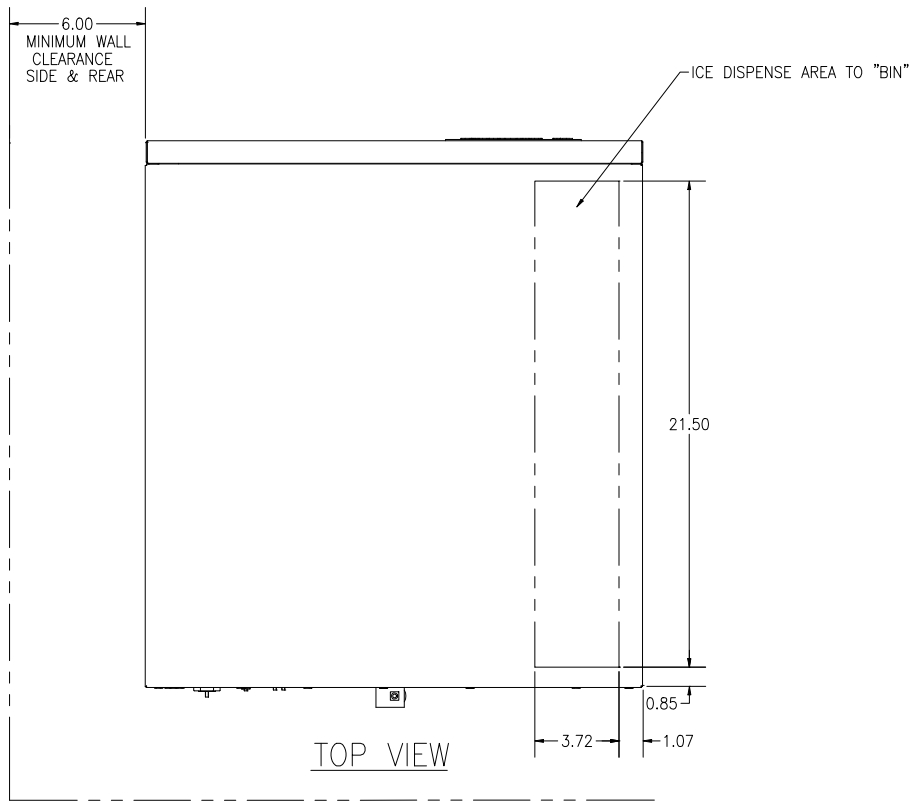
Electrical and Plumbing Requirements: ICE0805/6, ICE855/6GA and ICE1005/6/7



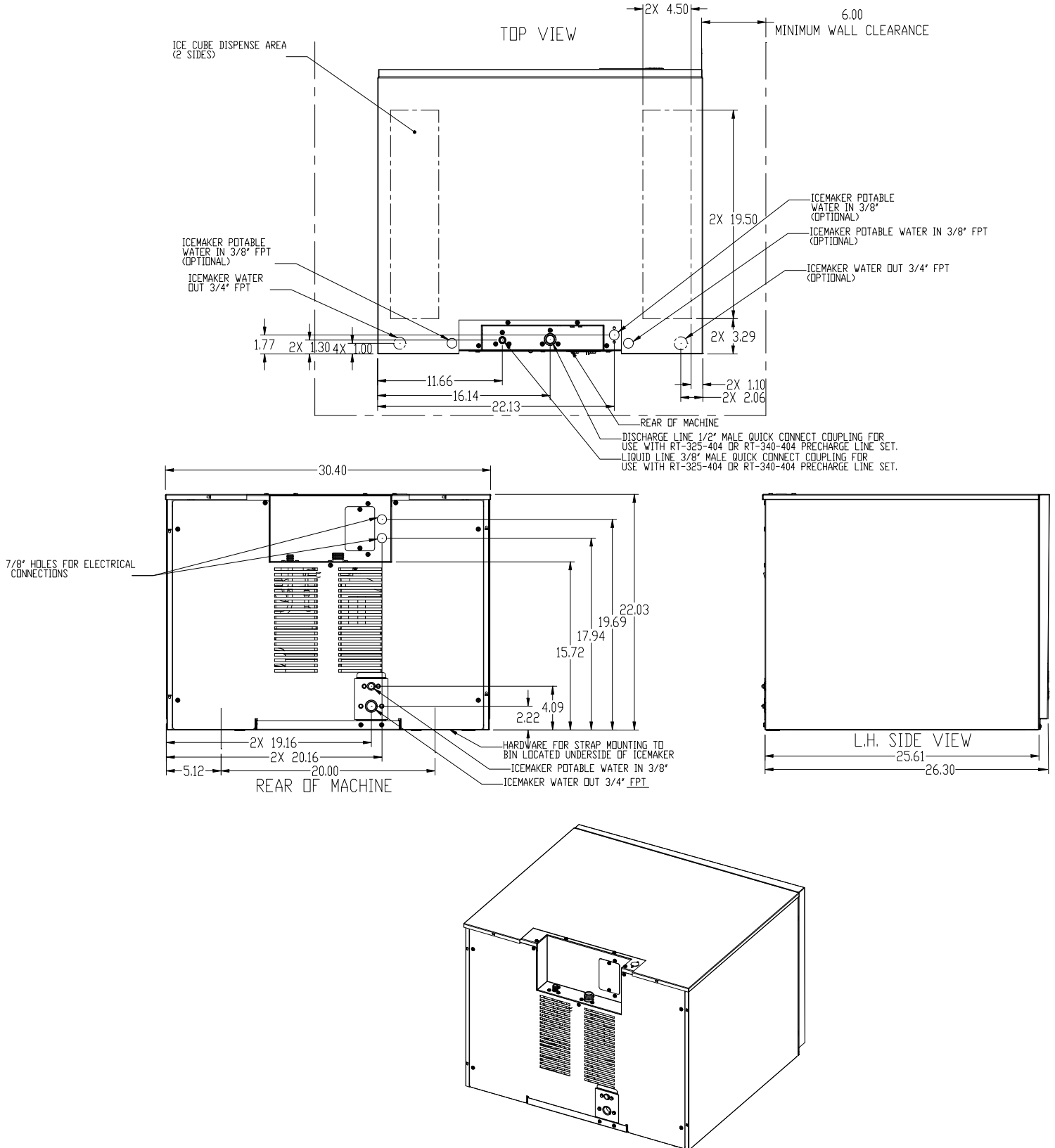
Electrical and Plumbing Requirements: ICE1405/6/7, ICE1806/7 and ICE2106/7



Electrical and Plumbing Requirements: ICE0320/5 and ICE0520/5



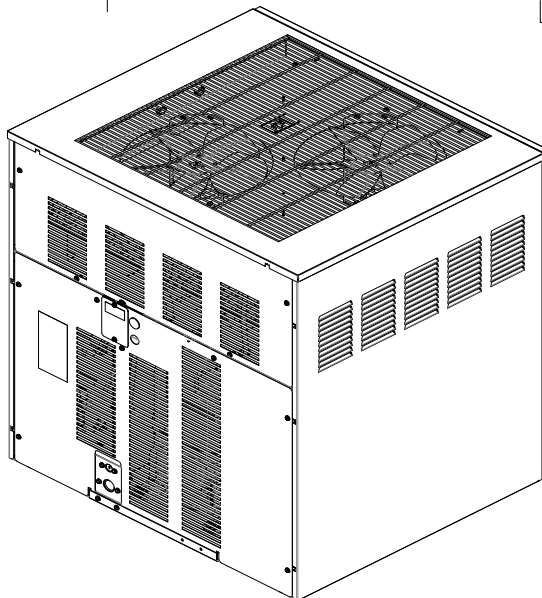
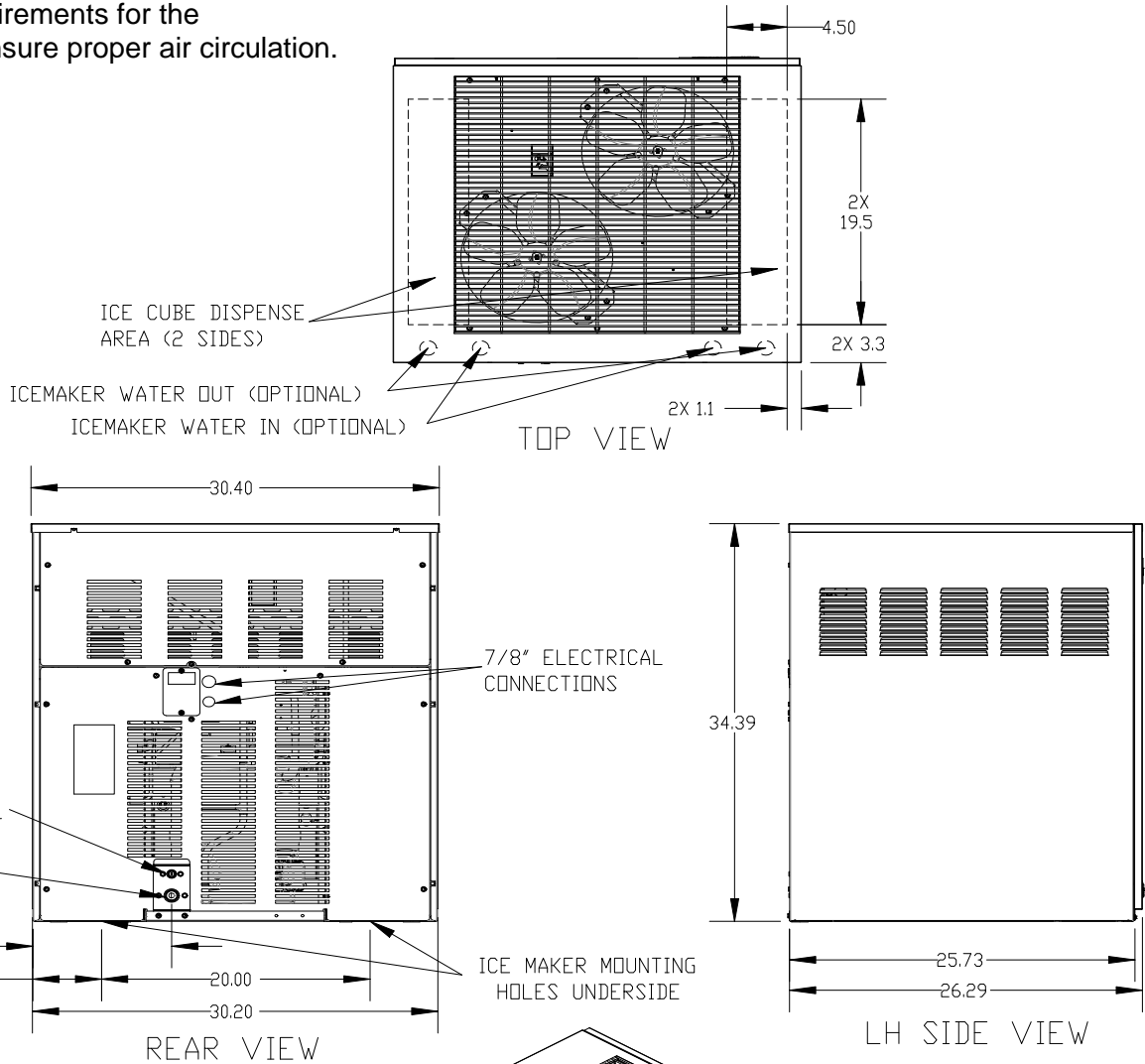
Electrical and Plumbing Requirements: ICE1506R5 Remote



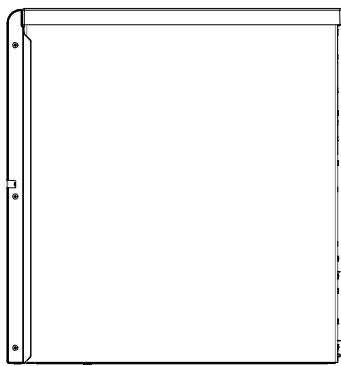
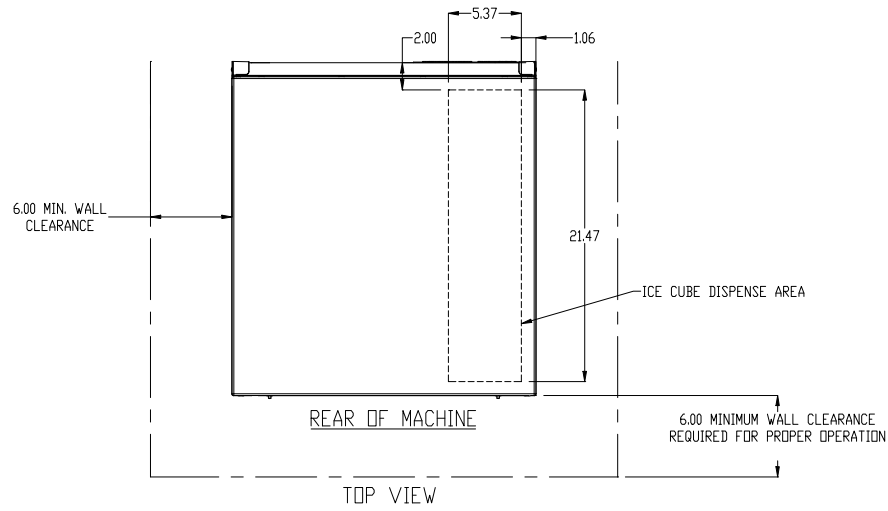
Electrical and Plumbing Requirements: ICE1506HT Air Cooled, Top Air Discharge

Clearance Requirements for the ICE1506HT to insure proper air circulation.

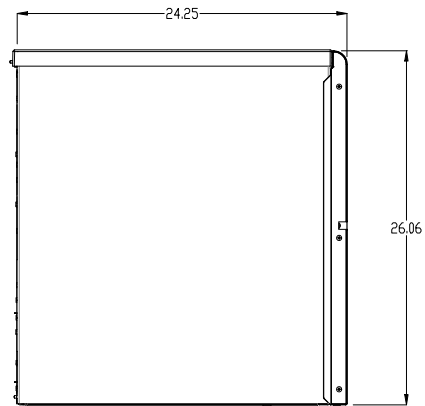
- Top 8 inches
- Back 6 inches
- Sides 2 inches



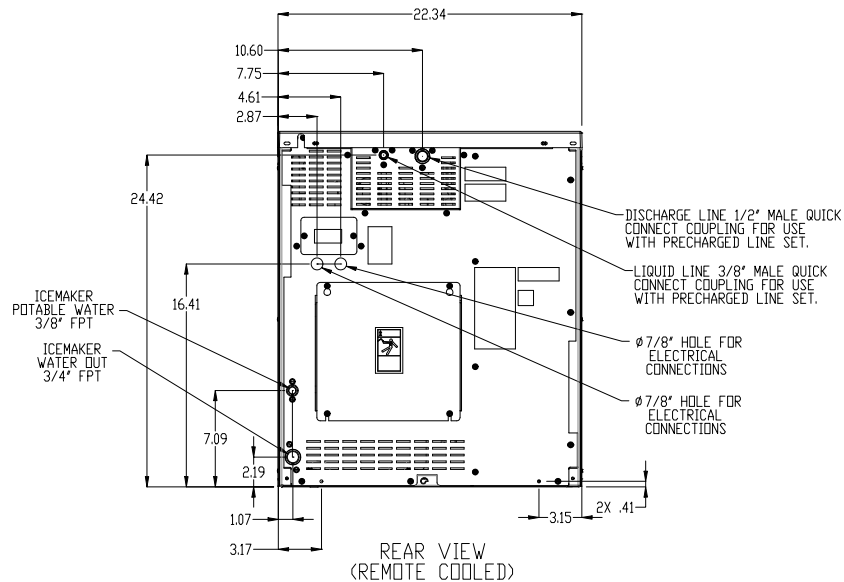
Electrical and Plumbing Requirements: ICE0726 and ICE0926 Remote



R.H. SIDE VIEW



L.H. SIDE VIEW



How the ICE Machine Works

A general description of how the **ICE Series** cubers works is given below. With the **ICE/OFF/WASH** switch in the **ICE** position, the compressor, water pump and condenser fan motor (when applicable) will energize starting the freeze cycle.

During the freeze cycle, water is circulated over the evaporator(s) where the ice cubes are formed. When the suction pressure has pulled down to the proper cut-in pressure of the timer initiate (pressure control), the contacts will close and energize the time delay module (timer). At this time, the cubes will be close to completion.

The remaining portion of the freeze cycle is determined by the timer setting. The timer is pre-set at the factory to achieve the proper ice bridge thickness but may need to be adjusted upon initial start-up, see Page 14 for timer adjustment.

The factory initial timer settings are **64 and 128 for the Half Cube** and **128 and 256 for a Full Cube**.

Once the amount of time on the timer has passed, the control relay will be energized and the machine will enter harvest. Power is now supplied to the water purge valve, hot gas valve, and the harvest motor.

The water purge valve opens, and allows the water pump to purge the water remaining in the water trough, removing impurities and sediment. This allows the machine to produce clear ice cubes and keep mineral build up at a minimum.

The hot gas solenoid opens allowing hot gas to go directly to the evaporator, heating the evaporator and breaking the bond between the evaporator and the ice slab.

Note: The operation of the Hot Gas valve and Water Pump vary by model number, reference the wiring diagram on the specific model number for operation sequence.

The harvest assist motor, which is also energized during harvest, turns a slip clutch, which pushes a probe against the back of the ice slab. Once the evaporator has reached approximately 40°F (4.5°F) in temperature, the slip clutch overcomes the bonding of the ice to the evaporator and pushes the slab of ice off of the evaporator and into the storage bin.

The clutch also actuates a switch that rides on the outer edge of the clutch. When the clutch completes one revolution, the switch is tripped and the machine enters the next freeze cycle.

Note: Units produced from July of 2015 utilize an improved drive motor which eliminated the clutch assembly.

When ice drops into a full bin during harvest, the splash curtain is held open which activates a bin switch shutting the machine off. When ice is removed from the bin, the splash curtain will close and the machine will come back on.

Note: The ICEU150, 220, 225, 226, ICEU300 and 305 do not have a splash curtain. These models utilize a thermostatic bin control in place of a mechanical bin switch.

Start-Up Procedure

Before starting the machine, make sure the machine is level within 1/8 inch in all directions, the bin or dispenser leg height can be adjusted by rotating the leg foot.

Check the water level in the water trough. It should be approximately 1/2 inch above the top of the water pump impeller housing. The water level can be adjusted by bending the float arm.

Move the ICE-OFF-WASH switch to the ICE position. The switch is located in the control box. Remove the ice machine front panel or remove the lower grill on the under counter models to access the control box.

Check for proper water flow over the evaporator(s). There should be an even flow of water over the evaporator(s).

Check the water regulating valve (water cooled machine) for proper adjustment by measuring the discharge pressure which should be adjusted to maintain 250 psi (17.01 bar / 1.723 MPa). Adjust the water regulating valve as required. Water exiting the condenser should be between 100°F (38°C) and 110°F (43°C).

As ice begins to form on the evaporators, check the freeze pattern of the ice. Ice should form evenly across the evaporator. Models ICE0800, 1000, 1800 and 2100 machines will have a slight variance from the top to the bottom of the evaporator(s).

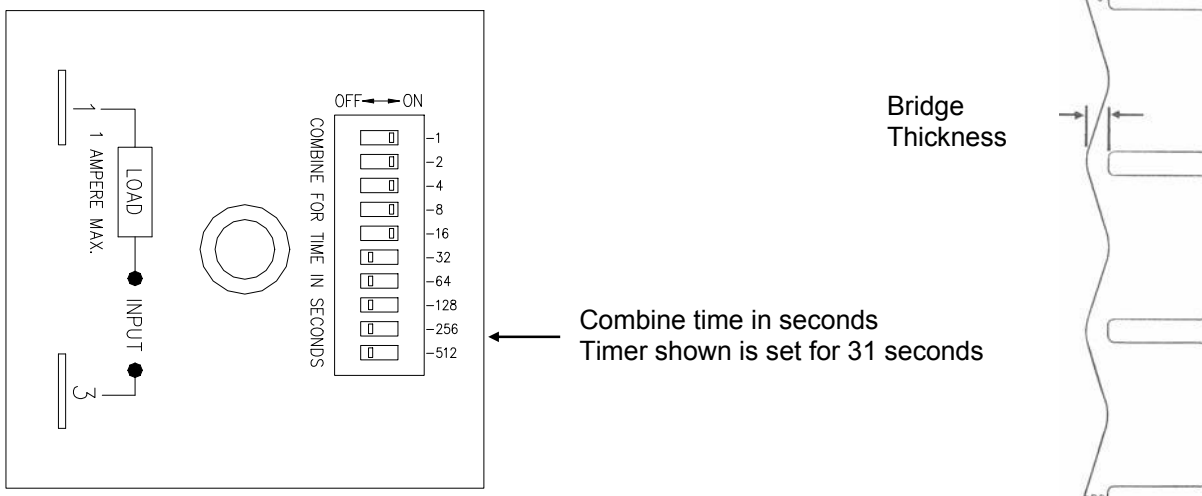
Bridge Thickness and Timer Adjustment

Once the unit has gone through 1 or 2 harvest cycles, verify that the ice production is per the chart below.

Models	Batch Weights	
	Half Cube	Full Cube
ICEU150, ICEU220, ICEU225, ICEU226, ICEU300, ICEU305, ICE0250, ICE0305, ICE0320, ICE0325	2.9 - 3.2	3.2 - 3.5
ICE0400, ICE0405, ICE0406, ICE0500, ICE0520, ICE0525, ICE0600, ICE0605, ICE0606	4.9 - 5.2	5.5 - 5.8
ICE1405, ICE1406, ICE1407, ICE1506	5.6 - 6.0	6.4 - 6.8
ICE0726, ICE0926, ICE0805, ICE0806, ICE1005, ICE1006, ICE1007, ICE1806, ICE1807, ICE2106, ICE2107	6.9 - 7.4	7.9 - 8.3

As a reference, when ice drops off the evaporator(s) during harvest, check the bridge thickness of the ice slab. The bridge should be approximately 3/16 of an inch on Undercounter, ICE0250 and ICE0305 units. The bridge should be approximately 1/8 of an inch on all other units. If the batch weight or bridge thickness is incorrect, the timer will need to be adjusted.

Both the Ice Batch Weight and Bridge Thickness are controlled by the freeze timer located in the control box. To check the timer setting, add the seconds of each dipswitch turned to the "ON" position. The number beside the each dipswitch represents seconds. To increase the Batch Weight and bridge thickness, increase the timer setting. To decrease the Batch Weight and bridge thickness, decrease the timer setting. The freeze timer can be adjusted by sliding one or more switches to either the "ON" or "OFF" position to obtain the desired setting.



Bin Control Operation

The bin control is used to shut the machine off when the bin fills with ice. The bin control must be checked upon installation or initial start-up and when performing maintenance. **Adjustments are not covered under warranty.** There is one bin switch for each evaporator. The actuator arm of the bin switch comes in contact with the splash curtain. When the bin is full of ice, the splash curtain is held open when ice drops off of the evaporator. This releases the pressure of the bin switch actuator arm allowing the switch to open.

Single evaporator machines: (Including the ICE1506R) If the bin switch opens during freeze or the first part of harvest, relay 2 bypasses the bin switch and the machine will continue running. If the bin switch is opened during harvest when the cam switch is lifted onto the high part of the cam, the machine will shut off. When the bin switch closes again, the machine will restart.

Dual evaporator machines: If either bin switch opens during the freeze cycle, the machine will shut off. Relay 1 and relay 2 will bypass the bin switches during defrost. If either bin switch is open when the machine returns to the freeze cycle, the machine will shut off.

Undercounter machines: A thermostatic bin control is used on the undercounter models. The bin thermostat is located in the control box with a capillary tube, which is in a brass thermo-well mounted to the right side of the water trough. When ice comes in contact with the capillary tube thermo-well, the bin thermostat opens and the machine will shut off.

Bin Control Adjustment

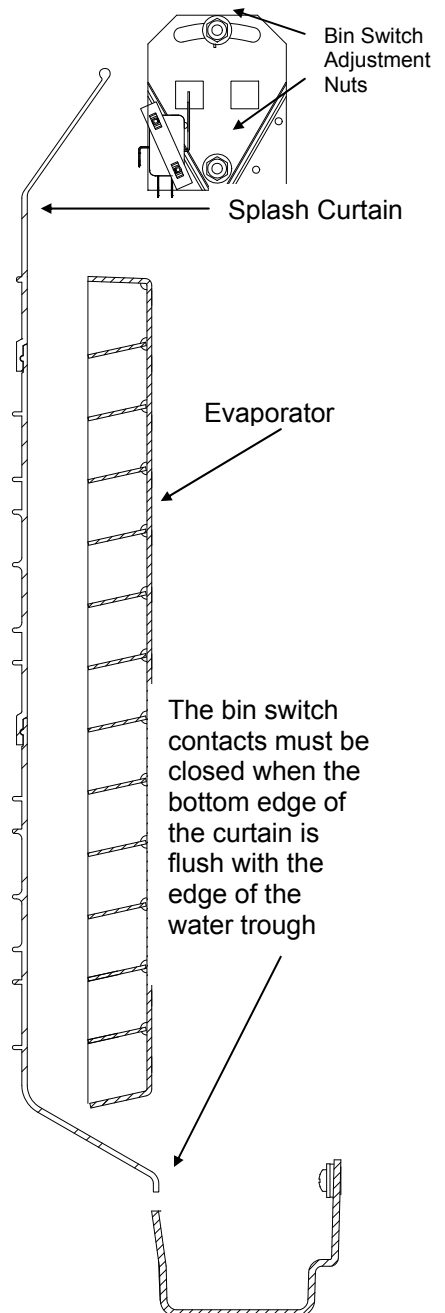
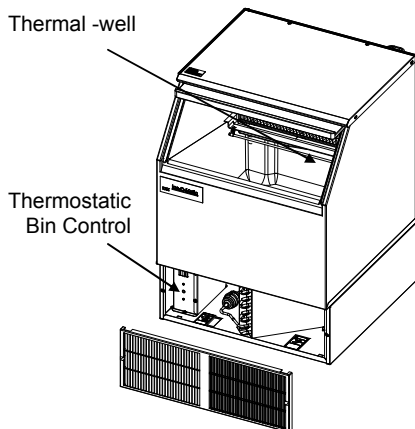
All Models (Except Undercounter Models): Check the bin switch for proper adjustment by swinging the bottom of the curtain away from the evaporator. Slowly bring the curtain towards the evaporator. The switch should close when the bottom edge of the curtain is even with the outer edge of the water trough. Adjust the switch by loosening the nuts that hold the switch in place. Move the switch to the proper position and retighten the nuts. Recheck the adjustment. **Adjustments are not covered under warranty.**

Undercounter Models and ICE1506R

The Bin Thermostat used on these Self Contained Ice Cuber Machines is a sensitive device influenced by ambient conditions including altitude and temperature. The machine is set up to operate properly at the factory for 70°F at sea level. If your ice machine shuts off early, bin half full, or doesn't shut off, bin overflowing, please follow these instructions to set the bin thermostat.

1. These instructions are best followed on a full ice bin with at least 3 inches of ice resting against the brass thermal well. The machine must be running to perform this adjustment; follow step two if the machine is off.
2. Turn the thermostat adjustment screw clockwise until it stops; this is the max cold setting and will prevent the machine from shutting off.
3. Hold a minimum of 3 inches of ice against the middle of the brass thermal well for 3-4 minutes. It is imperative that enough ice be used for the prescribed time to properly cool the thermostat.
4. Slowly turn the adjustment screw counter-clockwise until the machine shuts off. If the screw is turned too quickly, the thermostat could be set to too warm a temperature. Turn slowly.
5. Remove the ice from the well and warm the brass with your hand; the machine should turn back on.

The ice machine is now set for ambient conditions. If the ice machine location experiences significant changes in ambient temperatures, this procedure will need to be followed again. **Adjustments are not covered under warranty.**



WARNING

Electrical shock and/or injury from moving parts inside this machine can cause serious injury. Disconnect electrical supply to machine prior to performing any adjustments or repairs.

Failure to perform the required maintenance at the frequency specified will void warranty coverage in the event of a related failure.

General Maintenance Procedure

To insure economical, trouble free operation of your machine, it is recommended that the following maintenance be performed every 6 months.

1. Clean the ice-making section per the instructions below. Cleaning should be performed a minimum of every 6 months. Local water conditions may require that cleaning be performed more often.
2. Check ice bridge thickness. See page 16 for proper thickness and adjustment procedure.
3. Check water level in trough. See page 16 for proper water level and adjustment.
4. Clean the condenser (air-cooled machines) to insure unobstructed air flow.
5. Check for leaks of any kind: Water, Refrigerant, Oil, Etc.
6. Check the bin control switch for proper adjustment. See page 17 for bin switch adjustment.
7. Check the water regulating valve (water cooled machine) for proper adjustment by measuring the discharge pressure which should be adjusted to maintain 250 psi (17.01 bar / 1.723 MPa). Adjust the water regulating valve as required. Water exiting the condenser should be between 100°F (38°C) and 110°F (43°C).
8. Check all electrical connections.
9. Oil the fan motor if the motor has an oil fitting. (Self contained air-cooled models only)
10. Check the water filter (if applicable) and replace if dirty or restricted.
11. Inspect the evaporator water distribution tube to insure even distribution of water across the face of the evaporator.

ICE Machine and/or Bin/Dispenser Cleaning and Sanitizing Instructions

Cleaning should be scheduled at a minimum of twice per year.

Sanitizing should be performed after each cleaning or more frequently as required.

Note: Electrical power will be ON when performing the following cleaning instructions.

The cleaning and sanitizing of any commercial ice machine are important procedures all operators need to have in their preventive maintenance protocol. While similar, these two procedures are uniquely different and accomplish different things. Cleaning or de-liming, dissolves the mineral deposits on the evaporator and removes scale, calcium and other mineral buildup. Sanitizing disinfects the machine and removes microbial growth including mold and slime.

In either case, it is important to use solutions that do not harm the ice machine. Never use cleaning or sanitizing solutions that contain Nitric Acid, Sulfuric Acid, Hydrochloric Acid, Carboic Acid, Acetic Acid, diluted Acetic Acid or non-food-grade vinegar (concentration of acetic acid greater than 6% and does not contain enzymes created in processing) or any chlorine-based solution such as bleach, chlorine dioxide or any type of salts such as potassium chloride (potassium salts) or sodium chloride. Check the label or the manufacturer's Material Safety Data Sheet (MSDS) to be sure. These chemicals can attack the surface of the evaporator as well as other metal components causing corrosion and flaking. Reverse Osmosis (RO) water can be very acidic and can attack the evaporator and other metal in the ice machine. Because the RO process removes all minerals and metals from the water it can promote the faster growth of microbial, mold and slime. If RO water is used, Ice-O-Matic recommends the water pH is verified to be a neutral 7.0 to minimize the corrosive effects. Incorrect cleaners, sanitizers, and RO water that does not have a neutral pH could void the machine's warranty.

Cleaning

Prior to Cleaning the ice machine and/or Bin/Dispenser, perform the following:

1. Remove the ice machine front panel.
2. Make sure that all the ice is off of the evaporator. If ice is being made, wait for cycle completion then turn the machine "OFF" at the **ICE/OFF/WASH** selector switch.
3. Turn off the potable water supply to the ice machine.
4. Remove all ice in the storage bin. (**Required for cleaning and/or sanitizing**)

Cleaning Instructions-Ice Machine

1. Initiate the wash cycle at the **ICE/OFF/WASH** switch by placing the switch in the "WASH" position. Depress the **Purge Switch** to flush the remaining water from the water trough. Release the **Purge Switch** when the water trough is empty
2. Terminate the wash cycle at the **ICE/OFF/WASH** switch by placing the switch in the "OFF" position.
3. Add recommended amount of approved nickel safe ice machine cleaner (diluted per manufacturer's instructions) to the water trough. (Reference cleaner Manufacturer's instructions on the package)
4. Initiate the wash cycle at the **ICE/OFF/WASH** switch by placing the switch in the "WASH" position. Allow the cleaner to circulate for approximately 15 minutes to remove mineral deposits.
5. Depress the **Purge Switch** and hold until the ice machine cleaner has been flushed down the drain
4. Terminate the wash cycle at the **ICE/OFF/WASH** switch by placing the switch in the "OFF" position. Remove the splash curtain and inspect the evaporator and water spillway to ensure all mineral residue has been removed.
5. If necessary, wipe the evaporator, spillway and other water transport surfaces with a clean soft cloth to remove any remaining residue. If necessary, remove and clean the water trough thoroughly to remove all scale or slime buildup, remove the water distribution tube, disassemble and clean with a bottlebrush. Reassemble all components and repeat steps 2 through 5 as required to remove any remaining residue.
7. **Sanitizing the Ice Machine is required after cleaning per Sanitizing Instructions**

Cleaning Instructions-Storage Bin/ Dispenser

1. Open the bin door and remove all of the ice in the storage bin, store the ice in a clean container for reuse or discard.
2. Add recommended amount of approved nickel safe ice machine cleaner (diluted per manufacturer's instructions) (Reference cleaner Manufacturer's instructions on the package)
3. Thoroughly wash all surfaces within the bin, this includes the bin door, bin walls, window track and snout area with soap and water and rinse. Note: An extended handle soft bristle brush may be required.
4. Allow the mineral deposits to absorb the cleaner for approximately 15 minutes to remove and loosen the mineral deposits. Note: This includes the bin drain.
5. Thoroughly wash all surfaces within the bin, this includes the bin door, bin walls, window track and snout area with soap and water and rinse. Note: Repeat Steps 3, 4 and 5 as required.
6. **Sanitizing the Storage Bin/Dispenser is required after cleaning per Sanitizing Instructions .**

Sanitizing

Prior to Sanitizing the ice machine and/or Bin/Dispenser, perform the following:

1. Remove the ice machine front panel.
2. Make sure that all the ice is off of the evaporator. If ice is being made, wait for cycle completion then turn the machine "OFF" at the **ICE/OFF/WASH** selector switch.
3. Turn **OFF** the potable water supply to the ice machine.
4. Remove all ice in the storage bin. (**Required for cleaning and/or sanitizing**)

Sanitizing Instructions-Ice Machine

1. Use an EPA approved food equipment sanitizer at the solution mix recommended by the sanitizer manufacturer.
2. Add enough sanitizing solution to fill the water trough to overflowing and place the **ICE/OFF/WASH** switch to the "WASH" position and allow circulation to occur for 10 minutes and inspect water transport system for water leaks. During this time, wipe down all other ice machine splash areas. Inspect to insure that water transport system components are in the correct position.
3. Depress the **Purge Switch** and hold until sanitizer has been flushed down the drain. Turn **ON** the ice machine potable water supply and to flush the remaining diluted sanitizing solution out of the water trough for another 1 to 2 minutes.
- 4 Place the **ICE/OFF/WASH** switch to the "ICE" position and replace the front panel.
5. **Discard the first two ice harvests. DO NOT USE any ice produced from the cleaning solution.**

Sanitizing Instructions- Bin/ Dispenser

1. Use an EPA approved food equipment sanitizer at the solution mix recommended by the sanitizer manufacturer.
2. Sanitize the bin interior, this includes the bin door, bin walls, window track and snout area with an approved sanitizer using the directions for that sanitizer. Note: This includes the bin drain.
3. **Discard the first two ice harvests. DO NOT USE any ice produced from the cleaning solution.**

Common Questions**•Ice-O-Matic Ice Machine/Bin Cleaning**

Cleaning or de-liming an ice machine refers to the process of removing mineral buildup and scale from the evaporator and other components. Ice-O-Matic recommends cleaning the ice machine at least every 6 months. More frequent cleaning may be needed depending on water quality and filtration system used. It is the responsibility of the operator to determine the optimal frequency for their particular environment. Cleaning will not remove microbial, mold, or slime. The machine should always be sanitized after cleaning.

Ice-O-Matic recommends a "nickel-safe" cleaner such as Nu-Calgon or equivalent. Typically the chemical composition is as follows:

- Water 53% to 82%
- Phosphoric Acid 15% to 40%
- Citric Acid 3% to 7%



WARNING

Ice Machine Cleaner contains acids.
KEEP OUT OF THE REACH OF CHILDREN
Refer to ice machine cleaner manufactures emergency instructions on container label.

Ice-O-Matic recommends cleaning be done by a trained technician and that they follow detailed steps as prescribed in the Technical Service Manual.

Most cleaners list in their instructions an ounces to a gallon mixture for proper level of solution. Pouring undiluted cleaner directly into the water trough may not give proper dilution level. Ice-O-Matic recommends mixing in a plastic container before pouring into trough.

•Ice-O-Matic Ice Machine/Bin/Dispenser Sanitizing

Ice-O-Matic recommends sanitizing or disinfecting an ice maker a minimum of every six months. More frequent sanitizing may be needed if the machine is in a high yeast environment or if RO water is being used. It is the responsibility of the operator to determine the optimal frequency for their particular environment.

Ice-O-Matic recommends an EPA approved sanitizer such as Nu-Calgon IMS-II or equivalent. Sanitizing is a simple matter of running the EPA approved sanitizer through the ice machine/bin/dispenser and wiping down surfaces with the sanitizer.

If being done at the same time as the cleaning process, sanitizing must be done after the cleaning process. Follow the process as prescribed in the Owner's Manual.

Note: this process requires the ice be removed from the bin.

Cleaning Stainless Steel and Aluminum

Commercial grades of stainless steel and aluminum are susceptible to rusting and corrosion if not properly maintained. It is important that you properly care for the stainless steel and aluminum surfaces of your ice machine and bin to avoid the possibility of rust or corrosion. Use the following recommended guidelines for keeping your machine looking like new:

1. **Clean the stainless steel and aluminum thoroughly once a week.** Clean frequently to avoid build-up of hard, stubborn stains. Also, hard water stains left to sit can weaken the metals corrosion resistance and lead to rust or corrosion. Use a nonabrasive cloth or sponge, working with, not across, the grain.
2. **Don't use abrasive tools to clean the metal surface.** Do not use steel wool, abrasive sponge pads, wire brushes or scrapers to clean the metal.
3. **Don't use cleaners that use chlorine or chlorides.** Do not use chlorine bleach products to clean the metal surfaces. Chlorides break down the metals protective layer.
4. **Rinse with clean water.** If chlorinated cleansers are used, you must thoroughly rinse the surface with clean water and wipe dry immediately.
5. **Use the right cleaning agent.** The table below lists the recommended cleaning agents for common metal cleaning problems:

<u>Cleaning Activity</u>	<u>Cleaning Agent</u>	<u>Method of Application</u>
Routine cleaning	Mild dish Soap, Ammonia, Glass Cleaner, or mild detergent with water. Household Kitchen Cleaning chemicals approved For metal surfaces	Apply with a clean cloth or sponge. Rinse with clean water and wipe dry.
Removing grease or fatty acids	Oven cleaners.	Apply generously, allow to stand for 15-20 minutes. Rinse with clean water. Repeat as required.
Removing hard water spots and scale.	Vinegar	Swab or wipe with clean cloth. Rinse with clean water and dry.

Winterizing Procedures

Important!

Whenever the ice machine is taken out of operation during the winter months, the procedure below must be performed. Failure to do so may cause serious damage and will void all warranties.

1. Turn off water to machine.
2. Make sure all ice is off of the evaporator(s). If ice is being made, initiate harvest or wait for cycle completion.
3. Place the ICE/OFF/WASH switch to the “**OFF**” position. The switch is located in the control box.
4. Disconnect the tubing between the water pump discharge and water distribution tube.
5. Drain the water system completely.
6. On water cooled machines, hold the water regulating valve open by prying upward on the water valve spring with a screwdriver while using compressed air to blow all the water out of the condenser.
7. Remove all of the ice in the storage bin and discard.

