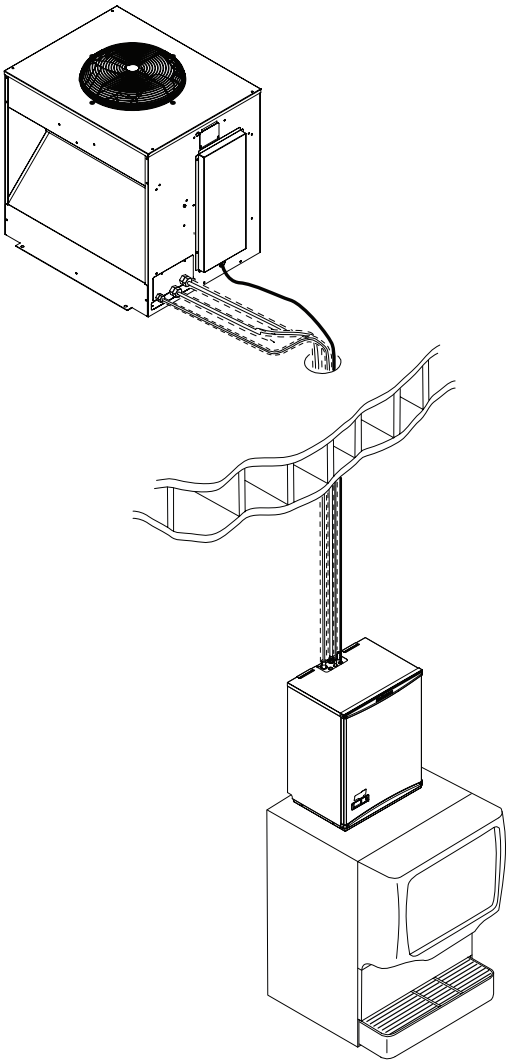
Scotsman®
Ice Systems

Installation and User's Manual for Remote Low Side Modular Cuber **Prodigy Elite® A Series** Model MC222X with ECCX Condensing Unit



PRODIGY® ELITE

Introduction:

The design of this modular remote cuber is the result of years of experience with remote ice machine refrigeration systems. Standard features of this product include front accessible on-off switches, always-visible indicator lights, mechanical assist ice harvest for extra efficiency, automatically adjusting water purge and a control system that optimizes system operation.

In addition, the Scotsman ICELINQ® app allows users to connect to the machine via Bluetooth® to monitor, control, and maintain the ice machine.

This installation and user manual is divided into three sections: Installation, Use and Operation and Maintenance.

The Installation section provides the trade person with the information needed to properly install and start up this ice system. The Use and Operation section provides the user with the information needed to use the machine. The Maintenance section contains the instructions and schedules for the sanitation and cleaning of the machine.

Contents

Configuration . . . . . Page 3
Specifications and Location Information . . . . . Page 4
Cabinet Drawings, Ice Making Head . . . . . Page 5
Cabinet Drawings, Condensing Unit . . . . . Page 6
Pre-Installation Details . . . . . Page 7
Create the System . . . . . Page 8
Completed System Example . . . . . Page 9
Place Remote System . . . . . Page 10
Place Ice Making Head . . . . . Page 12
Drain Connections . . . . . Page 13
Water Supply: . . . . . Page 14
Electrical: . . . . . Page 15
Connect Refrigeration . . . . . Page 16
Complete the Installation . . . . . Page 17
Reference for Start Up: Controller Operation . . . . . Page 18
Initial Start Up . . . . . Page 19
Ice Thickness and Water Purge Adjustment . . . . . Page 20
Adjustable Ice Level Control . . . . . Page 21
Cleaning, Sanitation and Maintenance . . . . . Page 22
Operational Characteristics 1000 lb system . . . . . Page 24
What to do before calling for service . . . . . Page 26

⚠WARNING: Cancer and Reproductive Harm
www.P65Warnings.ca.gov

Note any Caution or Warning symbols when they appear on the product or in this manual. They indicate potential hazards.

⚠WARNING ⚠CAUTION

A remote low side cuber system includes two sub systems: an ice making head and a remote air cooled condensing unit. This manual covers the MC222X head and the condensing units that go with it.

The ice making heads are designed for use indoors in a controlled environment. The remote condensing units are designed to operate outdoors. Each sub-system has limits for power, water and temperature.

Operational Limitations:

Condition	Minimum	Maximum
Air Temp (at head)	50°F	100°F.
Air Temp (CU)	-20°F.	120°F.
Water Temp	40°F.	80°F.
Water Pressure	20 psi	80 psi
Water Conductivity	10 microSiemens/cm	any
Voltage (at head)	104	126
Voltage (CU)	198	253

CU= Condensing Unit

Do Not operate the machine in conditions beyond these limitations. Doing so will void the warranty.

Warranty

Refer to the warranty coverage in effect when the equipment was sold. Warranty statements are included with each product.

Systems:

Ice making heads and condensing units have their own model and serial numbers. They must be combined to create a remote cuber low side system.

Notes: Voltage Codes are at the end of the model number. Codes read Voltage/Hertz/Phase. Those related to these products include:

-1 = 115/60/1

-3 = 208-230/60/3

-32 = 208-230/60/1

System Information

Tubing kits are required to connect the head to the condensing unit.

Interconnecting 24 volt control wire ships with the condensing unit.

System Size	Condensing Unit (CU)		Ice Making Head	
	Model	Electrical (volts/Hz/phase	Model	Electrical (volts/Hz/phase)
800	ECC0800X-32A	208-230/60/1	MC222SLX-1A	115/60/1
800	ECC0800X-3A	208-230/60/3	same	same
1000	ECC1410X-32A	208-230/60/1	same	same
1000	ECC1410X-3A	208-230/60/3	same	same

Scotsman ice systems are designed and manufactured with the highest regard for safety and performance. They meet or exceed common agency standards.

Scotsman assumes no liability of responsibility of any kind for products manufactured by Scotsman that have been altered in any way, including the use of any part and/or other components not specifically approved by Scotsman.

Scotsman reserves the right to make design changes and/or improvements at any time. Specifications and design are subject to change without notice.

Model	Electrical volts/Hz/ phase	Minimum Circuit Ampacity	Maximum Fuse Size	System Charge, oz of R-449A	Cabinet Size* w" x d" x h"	Unit Weight (lb)
MC222SLX-1A	115/60/1	1.13	15	shipped w/ none	22 x 16.5 x 29	~100
ECC0800X-3A	208-230/60/3	10.6	15	192	32 x 39 x 39.75	~300
ECC1410X-32A	208-230/60/1	15.8	30	248	32 x 39 x 39.75	~310
ECC1410X-3A	208-230/60/3	11.6	20	248	32 x 39 x 39.75	~310

* See cabinet drawings for detailed dimensions.

Location Limitations

Maximum Distance between Head and Condensing Unit: Limited to the length of the longest available single tubing kit, 75 feet.

Maximum Condensing Unit Elevation over Ice Making Head: 35 feet.

Note: Elevations greater than 20 feet require installation of a suction line trap at the 20 foot mark.

Maximum Ice Making Head Elevation over Condensing Unit: 15 feet.

Line Routing:

- Allowed: One rise after a drop.
- Allowed: One drop after a rise.
- Not Allowed: More than one rise after a drop
- Not Allowed: More than one drop after a rise.

Model Number Locations

Ice Making Head

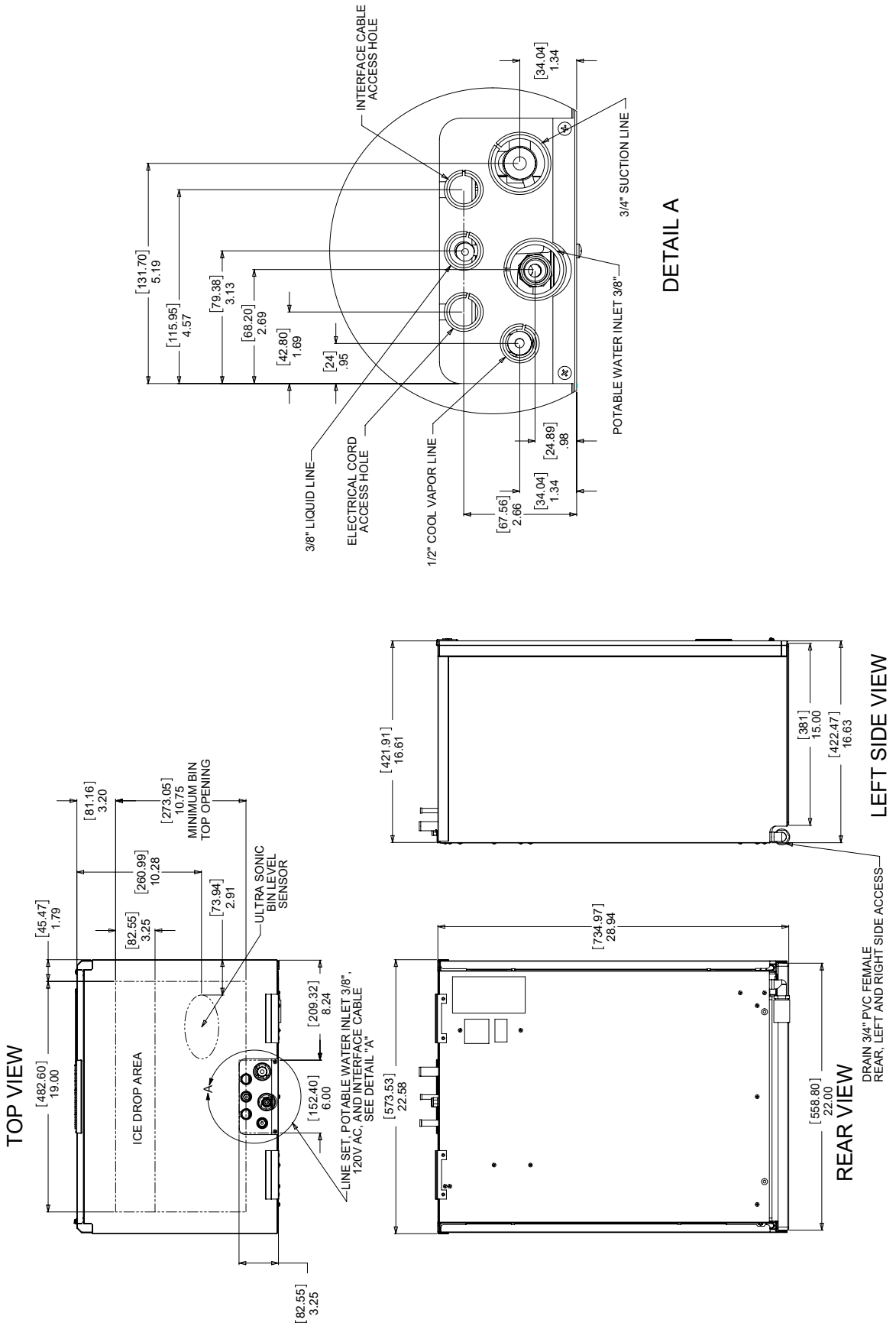
The dataplate on the back of the ice machine contains the model number, serial number and electrical data.

A second plate, located behind the front panel at the lower right front, also lists the model and serial numbers.

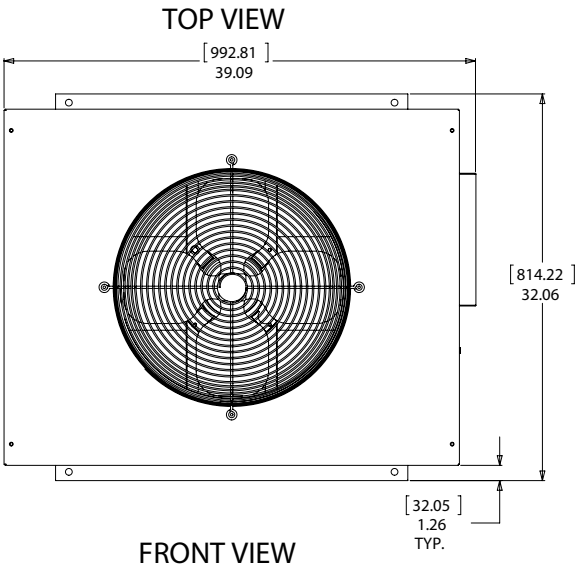
Condensing unit

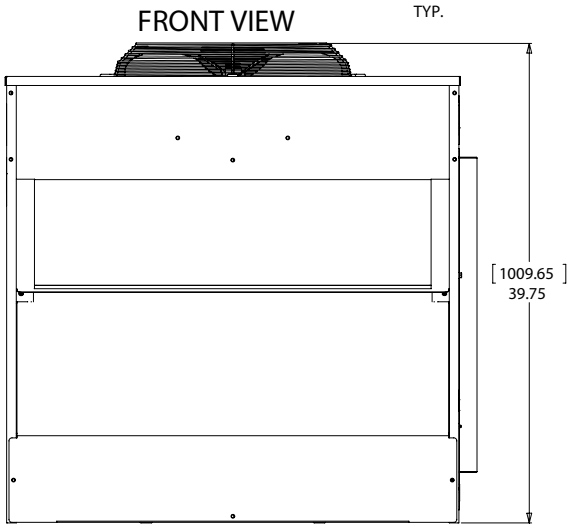
The dataplate on the end contains the model number, serial number, electrical data and system refrigerant charge.

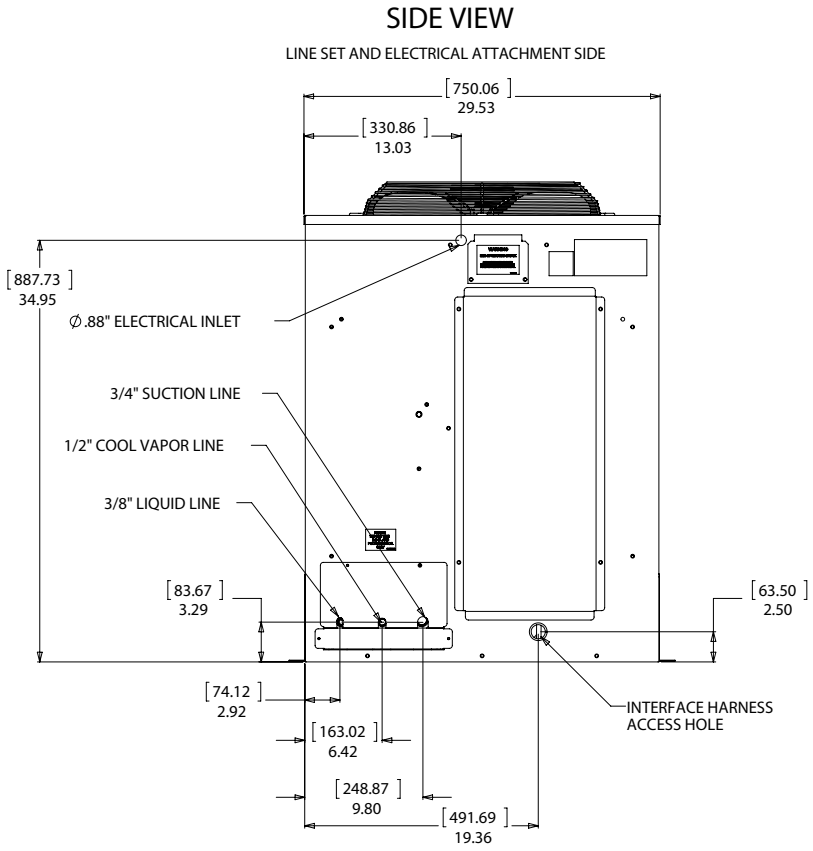
A second plate, located behind the side panel on the deck, also lists the model number, serial number and refrigerant charge.


DETAIL A
INTERFACE CABLE ACCESS HOLE
3/4" SUCTION LINE
POTABLE WATER INLET 3/8"
3/8" LIQUID LINE
ELECTRICAL CORD ACCESS HOLE
1/2" COOL VAPOR LINE
[131.70] 5.19
[115.95] 4.57
[79.38] 3.13
[68.20] 2.69
[42.80] 1.69
[24] .95
[34.04] 1.34
[24.89] .98
[67.56] 2.66
TOP VIEW
ICE DROP AREA
ULTRA SONIC BIN LEVEL SENSOR
[273.05] 10.75 MINIMUM BIN TOP OPENING
[81.16] 3.20
[260.99] 10.28
[73.94] 2.91
[82.55] 3.25
[45.47] 1.79
[482.60] 19.00
[209.32] 8.24
[152.40] 6.00
LINE SET, POTABLE WATER INLET 3/8", 120V AC, AND INTERFACE CABLE SEE DETAIL "A"
[82.55] 3.25
LEFT SIDE VIEW
[421.91] 16.61
[381] 15.00
[422.47] 16.63
REAR VIEW
[734.97] 28.94
[573.53] 22.58
[558.80] 22.00
DRAIN 3/4" PVC FEMALE REAR, LEFT AND RIGHT SIDE ACCESS

Cabinet Drawings, Condensing Unit







Note: The ice making section cannot be stacked vertically.

Accessories such as bin adapters and tubing kits are required to complete the installation.

Dispenser Adapter Kits:

- Cornelius ED150: 620201029*
- Cornelius DF150: 629087959*
- Cornelius ED175: 629087571*
- Cornelius ED200: 620201028*
- Cornelius DF200: 629087572*
- Cornelius ED250: 620201028*
- Cornelius DF250: 629087572*
- Cornelius ED300: KBT45
- Cornelius DF300: KBT45
- Cornelius Flavor Fusion 25S: 629088666*
- Cornelius IDC215/ID255: 629088662*
- Lancer 22” Wide: 82-4063*
- Lancer 30” Wide: 82-4061*
- SerVend S-150/SV-150: SL27-020000246*
- SerVend SV-175: SL22-020000198*
- Coca-Cola Freestyle 7000/9000: Contact Coca-Cola for bin adapters
- Scotsman IOD150: KBT80
- Scotsman IOD200 or IOD250: KBT84

*Non-Scotsman kits must be purchased from the dispenser manufacturer.

Tubing Kits:

- 20 foot: 3BRTE20-EH
- 35 foot: 3BRTE35-EH
- 50 foot: 3BRTE50-EH
- 75 foot: 3BRTE75-EH

Note: Line set may have quick connects. The condensing section may have quick connects. See refrigeration system detailed instructions connection details.

Items required for installation:

- Ice making head
- Condensing unit (includes interconnecting control system wire)
- Tubing kit. 20’, 35', 50’ or 75’ triple line set (liquid, vapor and suction)
- Bin or dispenser adapter

Special Considerations

The ice making section’s footprint is 22” wide by 16.5” deep. The refrigeration connections can be routed up or to the back. The drain may be routed out the back at any position left to right; it may also be routed to either side.

Water

Pure water does not exist. All water supplies contain some amounts of impurities, although potable water is, by definition, fit for human consumption. Because the contents of the water to an ice machine directly impact its performance, consideration should be given to improving the water’s quality.

There are two ways water can contain impurities: in suspension or in solution. Suspended solids can be filtered out of the water. In solution or dissolved solids must be diluted or treated. Water filters are recommended to remove the suspended solids.

Some filters or filter systems have treatment chemicals in them for treating the suspended solids.

This ice machine has an adjustment for the amount of water rinsed or purged. Water use adjustments are customer convenience adjustments; they are not factory defects and are not covered by warranty.

Plan the installation. The system consists of three parts: the ice making head, the condensing unit and the interconnecting tubing. Of these, the biggest variable is the interconnecting tubing.

Tubing: The tubing consists of three insulated and sealed soft copper tubes. One tube, the liquid line, is 3/8" OD. The vapor tube is ½" OD and the suction tube is ¾" OD. A site inspection will determine what length of tubing is required for the installation.

In 2013 Scotsman made a change to the Eclipse tubing kits:

- Prior Tubing Kits: They each contain a small holding charge of R-449A and have quick connects at the ends.
- Current Tubing Kits: The do not contain any refrigerant and do not have quick connects.

Either type can be used to connect the head and condensing unit.

Check condensing unit for quick connects. If none, recover refrigerant from tubing and cut the quick connects off.

Elevation: Condensing unit limited to 35 feet above the ice making section.

Condensing Unit: Electrical power must be supplied to the condensing unit, it will be separate from the head.

Ice making section location and attachment: The unique footprint of the MC222X requires adapter kits to allow placement on dispensers and bins.

The remote tubing connections are at the top of the machine, and connections should not be made until the machine is nearly in its final installed position.

The 115/60 Hz ice making section is cord connected and requires an outlet within 6 feet of the installation.

Interconnecting wires: An interconnecting wire harness is included with the condensing unit. One end plugs into the ice making section and the other into the condensing unit. The system will NOT operate without this harness.

Exposed tubing: Minimize the amount of tubing exposed outdoors.

Lineset	Ice machine head and condensing unit both have stubs	Ice machine head has stubs, condensing unit has quick connects.
Has Quick Connect Fittings	Cut quick connects off both ends	Cut off quick connects at condensing unit end only
Does NOT have Quick Connect Fittings	Use as supplied	Use as is at head, obtain kit KTE6-EH, use 3 of 6 fittings on condensing unit end.

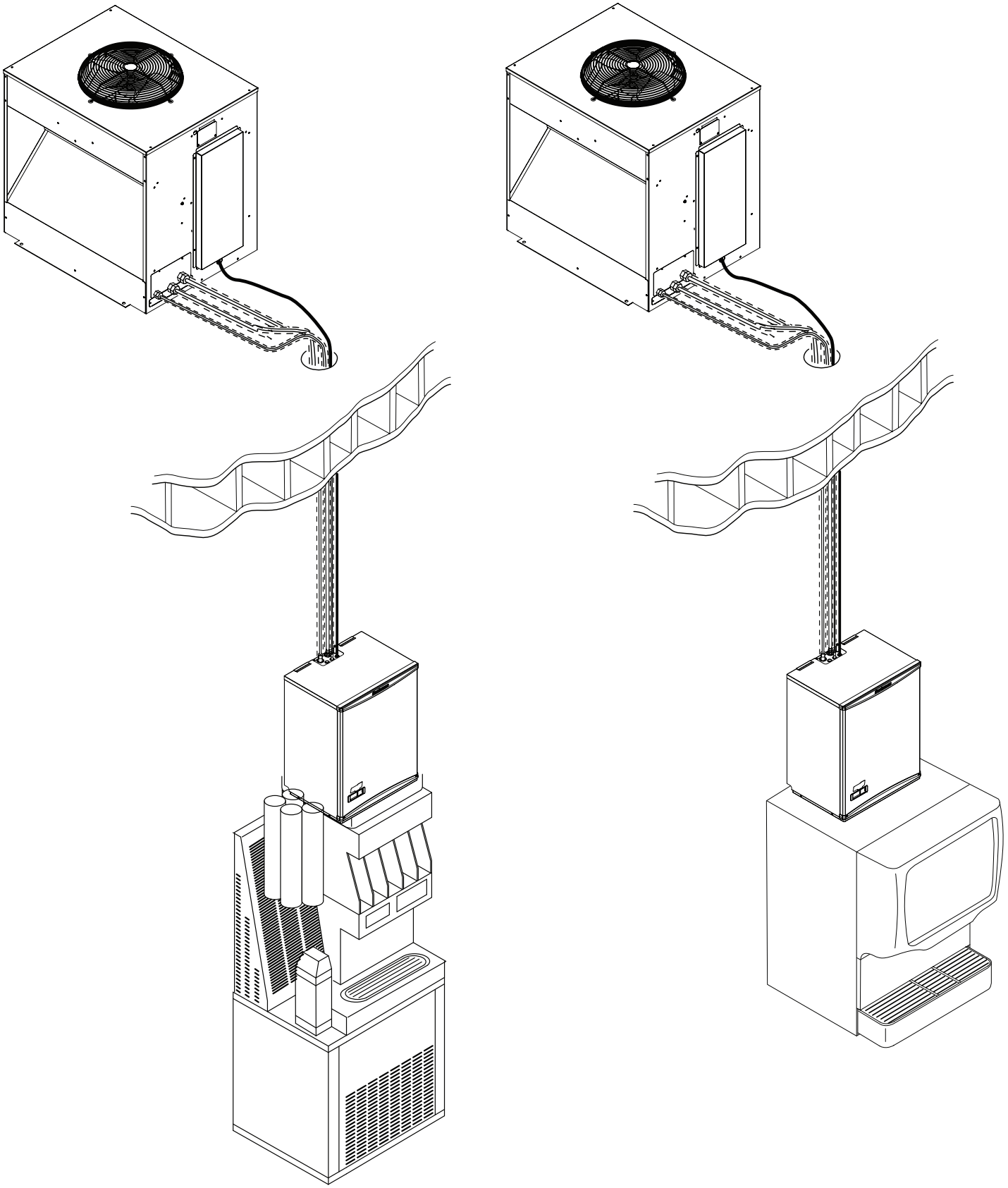
Excess tubing must be shortened at the job site.

Installations with greater than 20 feet of vertical lift between ice machine and the compressor require a suction line trap. The suction line requires careful handling and large radius bends to prevent kinking.

Roof mounting: Some installations will require the use of a hoist to lift the components to the roof.

Pad mounting: The condensing unit may be located below the ice making section, up to a limit of 15 feet.

Distance from unit: Limited to the length of the available tubing.



Roof preparation

Most installations of this system will place the condensing unit on the roof of a building. The roof must be physically able to accept the load of the equipment and the roofing material must be prepared to prevent water leaks.

Follow local codes for the placement and attachment of the equipment.

Location

The condensing unit requires unobstructed air flow to operate efficiently. A four foot space between each intake side and a wall or other cabinet is recommended.

Do not place where it will pick up hot discharged air from an air conditioner or other refrigeration system condensing unit.

Space must also be reserved for service on the condensing unit.

Roof Piercing:

The roof (or wall) must have a passage large enough for the three refrigeration tubes and the control wire to pass through. The minimum recommended size is 4” ID. In most areas the power supply may also pass through the same passage. If there isn’t a passage one must be created. In most cases this must be done by a licensed and bonded roofer in order to maintain the roof’s integrity.

Roof Pipe Curb or Pitch Pocket:

To avoid potential kinking of the refrigeration tubing, avoid small, tight radius types of covers on pitch pockets.

Suggestions:

In most cases a mechanical lift, boom truck or crane will be required to hoist the condensing unit.

Mount unit to roof rails or curbs and secure with lag screws or similar field supplied fasteners.

Orient the assembled unit so that the unit’s mounts are parallel to the pitch of the roof to allow water to drain freely.

Do NOT place the unit directly onto roof rock.

In all cases the line set will need to be shortened to fit.

Do NOT leave excess line set exposed outdoors, especially on a roof.

Refrigerant Recovery and System Evacuation Notice

In the event the refrigerant must be recovered from this system and the system evacuated, recover and evacuate from the three ball valve access valves with the ball valves open.

Lower Light and Switch Panel

This user accessible panel provides important operational information and duplicates the lights and switches on the controller. It also allows access to the On and Off buttons that operate the ice machine.

Sometimes access to the switches should be limited to prevent unauthorized operation. For that purpose a fixed panel is shipped in the hardware package. The fixed panel cannot be opened.

To install the fixed panel:

1. Remove the front panel.
2. From the back side of the panel, slide the door to left while spreading the clips to remove the original door from the bezel.
3. Slide the fixed panel into bezel until it snaps into place.
4. Reinstall front panel.



Open door to access On and Off switch buttons.

Place Ice Making Head

Remove from carton.

Place adapter kit onto bin or dispenser top. If adapter does NOT have gasket tape install tape such as Scotsman part number 19-0503-04. The adapter to ice head base MUST be sealed with gasket tape or food grade sealant.

Attachment

ABS (Automatic Beverage Dispenser) in drive up installations: Route refrigerant tubing and install drain and water supply tubing onto ice making section before placing unit on the dispenser.

Place MC222X onto adapter, do not secure at this time. Uncoil power cord and route to the power supply.

Plug interconnecting control wire to the wire harness in the ice making head.

Located at the top panel:

- Refrigeration connections.
- Interconnecting control wire.
- Access port for water supply.
- Power cord.

The drain may be routed to the left or right, allowing the ice making section to be placed with its back tight against a wall.

Water and Drain

The ice maker requires an adequate potable water supply and a gravity drain.

Determine how the drain will be connected to the ice making section.

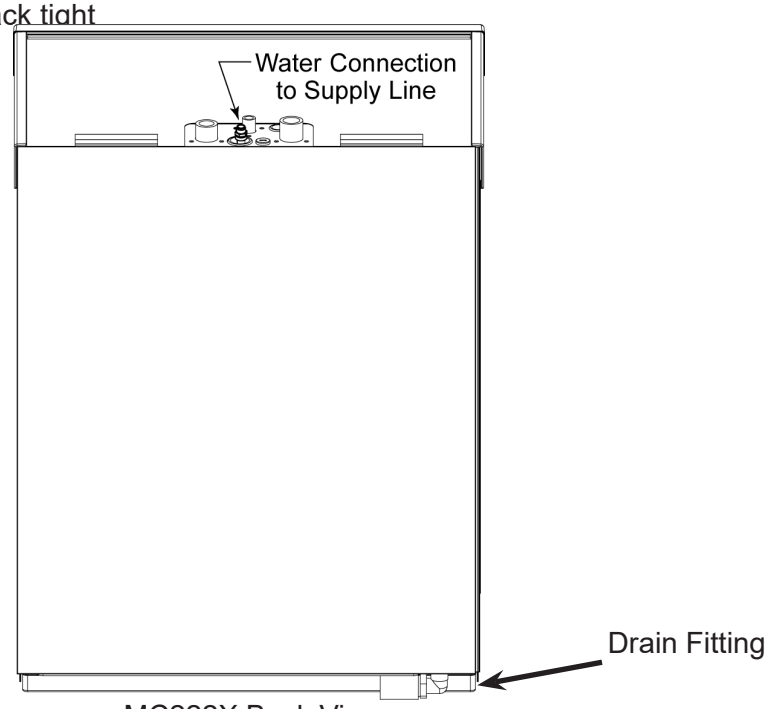
- If access is available behind the unit, route the drain in from the back.
- If the unit is to be flush mounted to the back of the dispenser and tight against the wall, route the drain out either the left or right.

In some tight situations it will be necessary to assemble the ice making section to the dispenser or bin and install the water and drain connections before placing the system in its installed position. A loop of water supply tubing will aid movement of the system.

In other tight situations the unit should have its water and drain tubing connected and stubbed out before placing on the dispenser or bin.

The drain fitting is adaptable to drain connections to the left, right and back.

The unit is shipped ready to drain right. The drain fitting elbow with PVC adapter can be rotated to drain right, left or back.



MC222X Back View

Drain Connections

Right Draining:

1. Connect ¾” PVC to the female PVC fitting. If copper is required by code, remove the PVC connector and install a ¾” FPT female copper fitting onto the ¾” NPT male fitting. Do all soldering before connecting to the male fitting.

2. In tight locations do the next step after the unit is placed on the dispenser or bin.

3. Connect rigid drain tubing to the reservoir drain tube. Route the drain either out the back, under the unit (through the notch in the base) to the left side or to the right side. A vent is built into the unit, so no external vent is required.

Run the drain tubing to the building drain. Do not “Tee” into any other drain, including the bin or dispenser drain.

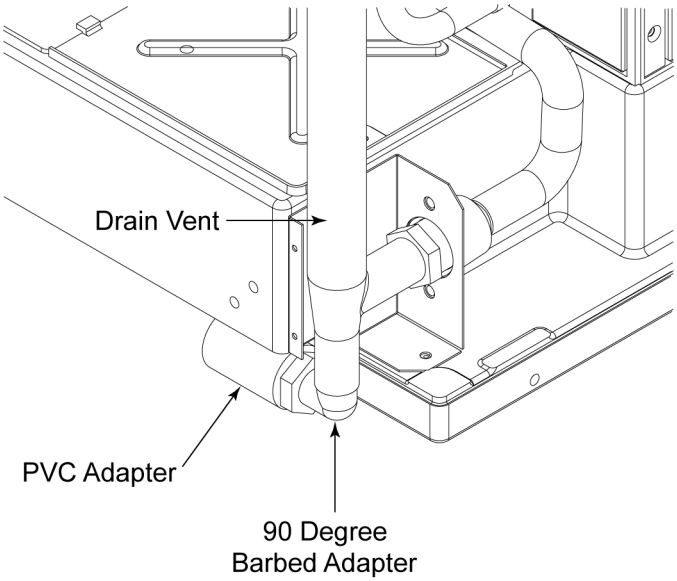
Left Draining: Rotate elbow to the other direction.

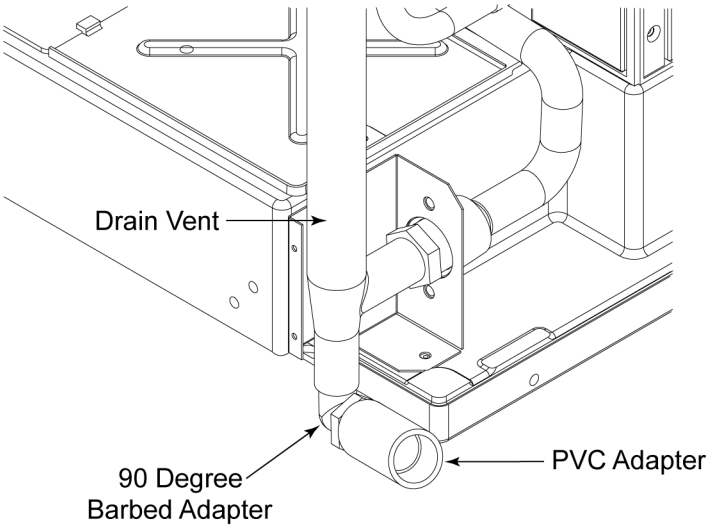
Connect ¾” PVC to the PVC fitting.

Back Draining: Rotate elbow to face the back or connect PVC directly into the ¾” FPT drain fitting.

No external drain vent is required, venting is internally provided for.

Note: External drain tubing must be supported to insure that it does not move and kink the internal rubber tube.





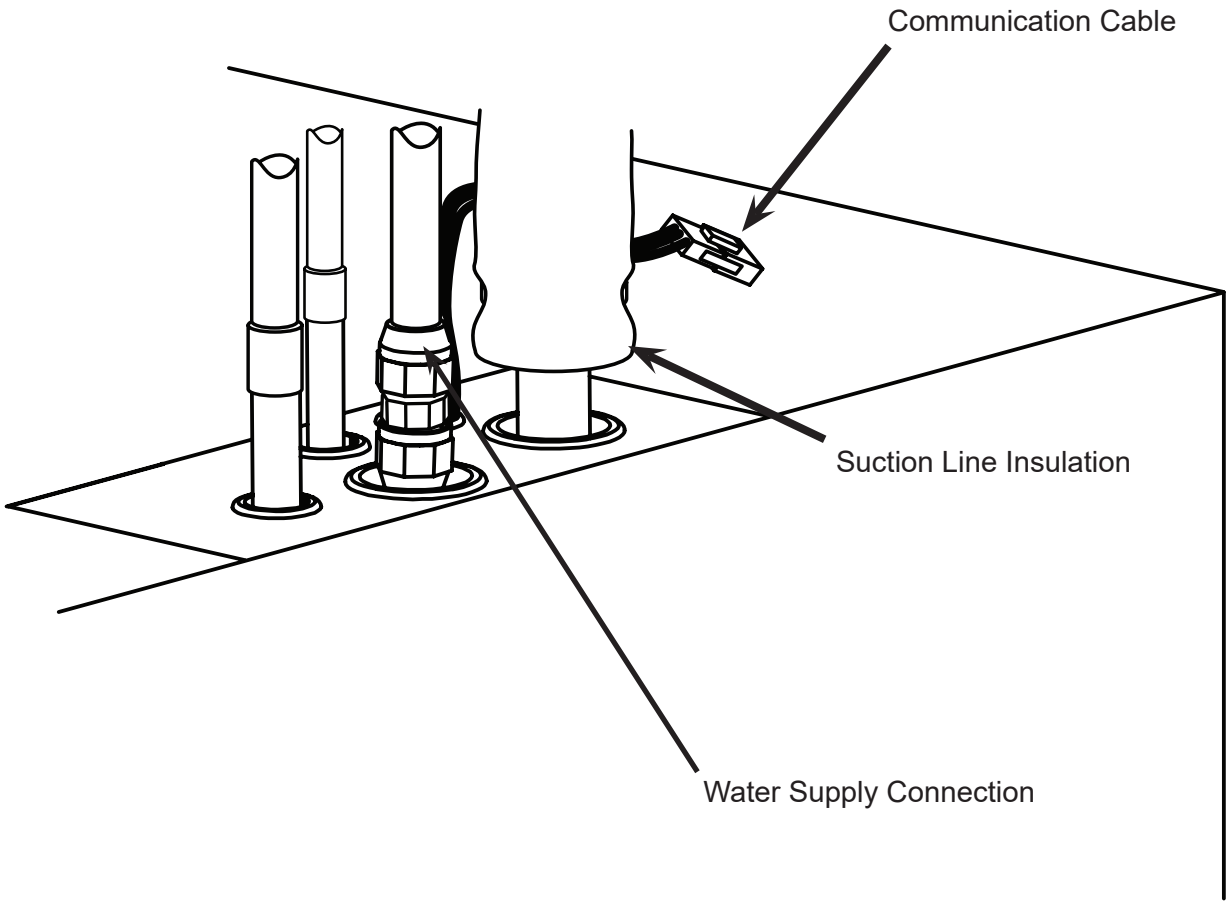
Water Supply:

A 3/8" flare nut on tubing is located at the top panel, near the refrigeration tubing.

Inside the hardware bag, inside the cabinet, a 3/8" inch double male flare adapter (flare union) is supplied. Use the supplied adapter to make a 3/8" male flare fitting for the water inlet.

Connect a cold, potable water supply to the 3/8” water inlet fitting installed above. Use 3/8" OD copper or other comparable sized tubing for the water supply.

Note: This is an NSF listed ice machine and contains provisions for back-flow prevention in its design. No external back flow preventer is required.



Electrical:

Condensing Unit

Route interconnecting control wire through proper hole end of condensing unit and plug into the connection on the control box.

Route power conduit (liquid tight) and wires to the junction box of the ECCX unit. Secure with the proper type of connector.

Note: The power supply wires must be the correct size and type per the National Electric Code.

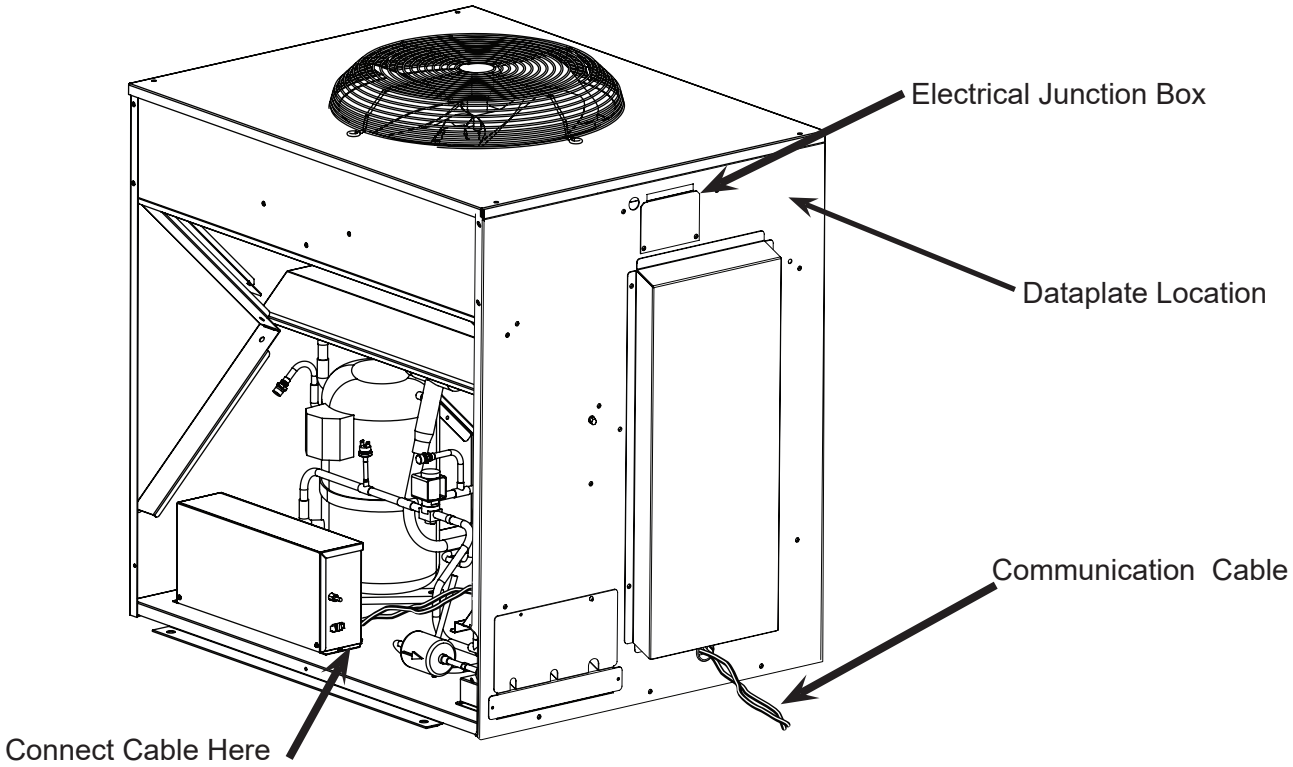
Locate the nameplate on the ECCX unit for the Voltage, Phase, Minimum Circuit Ampacity and Maximum Fuse Size. Either fuses or HACR type circuit breakers may be used.

Follow all Local, State and National Codes.

Three Phase Notice: Check voltage between legs at contactor. If there is a “wild leg” in the three phase power supply move supply wires at the contactor so the higher voltage is on L3, which connects to the compressor motor only.

Head

Plug head’s power cord into a nearby 115 volt electrical outlet.



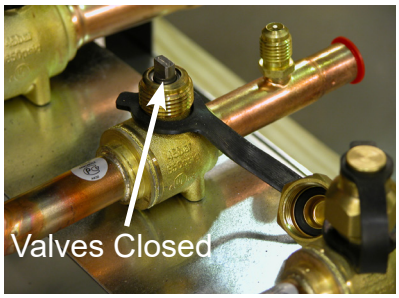
Requires brazing, steps must be performed by an EPA certified type II or higher technician.

At Head:

1. Remove protective plugs from all three connections and vent the nitrogen from the ice machine.
2. Route the each of the three tubes to its connection.
3. Remove the top panel and attach a refrigeration hose with depressor to the 1/2” vapor line access valve so the valve is OPEN. This is a vent for nitrogen purging.
4. Remove screws holding tubing bracket to back panel and lower it out of the way for brazing.
5. Clean tubing ends and position into couplings.

At Condensing Unit

1. Confirm connection valves are fully closed.
2. Remove protective plugs from all three connections.



3. Remove caps from access valve connections.
4. Remove cores from access valves.
5. Connect refrigeration hoses to access valves.
6. Connect dry nitrogen source to liquid line connection and vapor line connection.
7. Shorten tubing to correct length, clean ends and insert them into valve ends and couplings.

Note: Be sure tube and stubs are round, dress with swage tool if needed.

8. Add heat sink material to ball valve body.
9. Open nitrogen and flow 1 psi nitrogen into liquid line and vapor line tubes and braze the liquid line, vapor line and suction line tubes to the valve stubs.

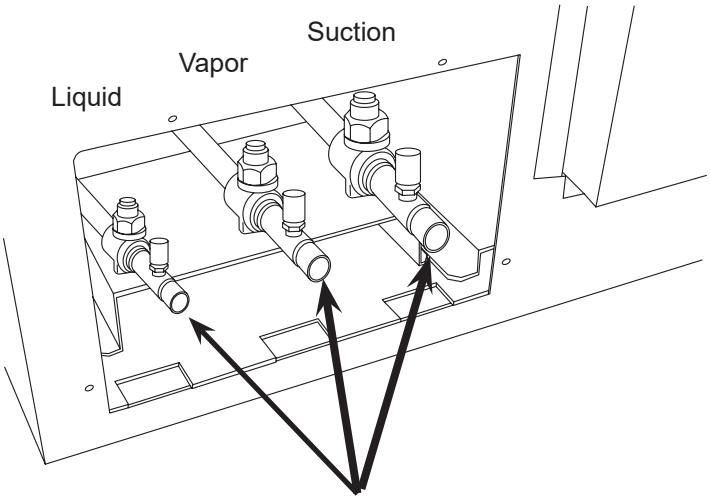
At Head

1. With nitrogen flowing from condensing unit, braze the liquid, vapor and suction line connections.
2. Remove refrigeration hose from head. Be sure valve cap is on tight.
3. Pull tubing bracket up and secure to back panel.

At Condensing Unit

1. Remove nitrogen source.
2. Return valve cores to access valves.
3. Connect vacuum pump to **all three** access valves (use two manifolds or two extra hoses and a tee) and evacuate the tubing and head to at least a 300 micron level.
4. Remove vacuum pump and add R-449A vapor to all three tubes to provide a positive pressure.
5. Leak check the braze connections and repair any leaks.
6. Open all three valves to full open.

Note: The full refrigerant charge is contained in the receiver of the ice machine.



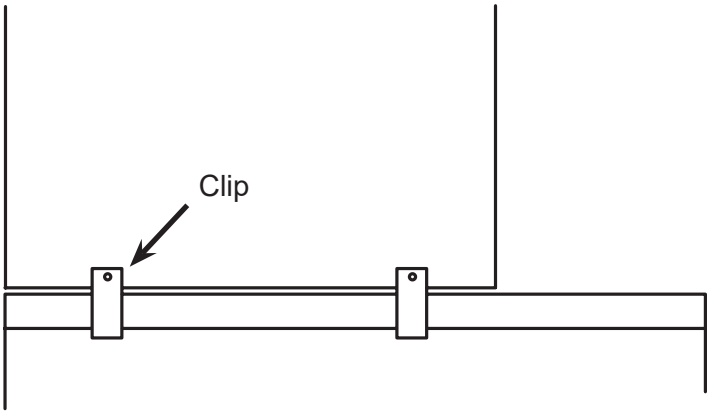
Refrigeration Connections

After the utilities and refrigeration connections have been made, secure the unit to the dispenser or bin top.

Secure ice making section to dispenser or bin adapter.

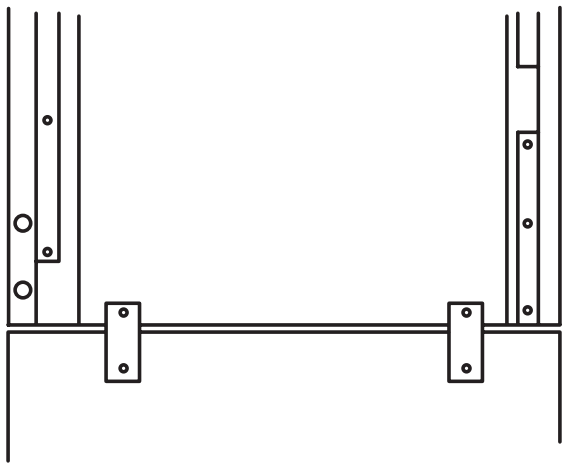
Use strap/clips to secure unit:

- When used with Cornelius ABS adapter, install clip on the side of the cabinet. Clip under edge of adapter and secure to ice making section using the screws provided in the hardware bag.



Note: If one side will be against a wall, do not use a clip on that side. One clip is sufficient to secure the unit.

- For use on bin adapter, use clip (as a strap) on back.



If the ice maker & bin or dispenser is not yet in its final position gently move it there.

Note: The refrigerant lines above the machine must be able to move freely while the machine is being moved into position.

Final Check List Before Initial Start Up

1. Confirm that the ice making section is installed indoors in a controlled environment.

2. Confirm that all packing materials have been removed from all products.

3. Confirm that the ice making section is level.

4. Confirm that all the refrigerant connections have been made and checked for leaks.

5. Confirm that the proper power supply has been turned on to the condensing unit.

6. Confirm that cold, potable water has been supplied to the ice making section and checked for leaks.

7. Confirm that the water supply is adequate.

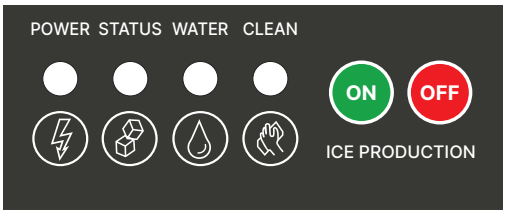
8. Confirm that there is adequate water pressure and that any water filters have been checked to confirm that the cartridges do not need changing.

9. Confirm that the proper size drain tubing has been installed and properly routed.

10. Confirm that the ice making section has been connected to the proper power supply.

11. Confirm that the interconnecting wire has been routed and connected between the ice making section and the condensing unit.

The controller has four indicator lights, a code display, four push buttons, and eleven component indicator lights.



Indicator Lights

- Power - on when there is power to the controller
- Status - on in ice making mode
- Water - on and blinking when there is no water
- De-scale & Sanitize - on when it is time to clean the machine

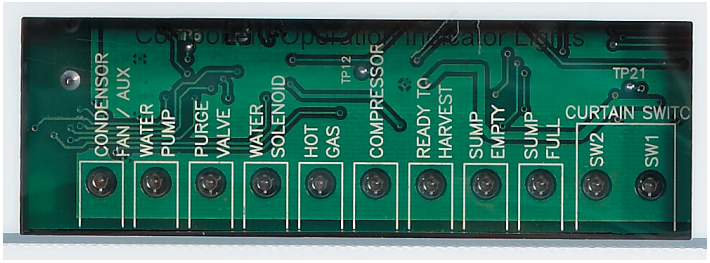
Code Display

- Displays status and diagnostic codes

Push Buttons

- On
- Off
- Manual Harvest
- Clean

Component indicator lights



- Fan - not used on this model
- Water Pump - on when the pump is
- Purge Valve - on when the purge valve is
- Water Solenoid - on when the inlet water solenoid valve is
- Hot Gas - on when the vapor inlet valve and harvest assist solenoid have power
- Compressor - on when the compressor contactor is energized
- Ready to Harvest - on when the ice thickness sensor has water touching it
- Sump Empty - on when there is no water touching the mid-length probe
- Sump Full - on when water is touching the shortest probe
- SW2 - on when the curtain is open
- SW1 - on when the curtain is open

Cycle Definitions:

Freeze: The refrigeration system is operating to remove heat from the evaporators. The compressor, fan motor, and water pump are on.

Harvest: The refrigeration system and water system are operating to harvest the ice and rinse the reservoir. The compressor is on for the full cycle, the pump is on until the purge valve closes.

The inlet water valve opens and refills the reservoir. The vapor and condenser by-pass valves are open during the entire harvest cycle, as is the harvest assist mechanism.

Pre Start

A soak-out period of four hours is optional for this system. If desired, powering the compressor unit for four hours prior to start up allows the crankcase heater to warm up the oil in the compressor.

Start Up

1. Connect power to the condensing unit and move its toggle switch to Run or On.
2. Open the water supply valve.
3. Switch on the electrical power to the MC222X. Observe that some of the lower control's indicator lights glow and its display shows 0.
4. Locate lower light and control panel.
5. Push and release the ON button on the lower panel. The code display will begin to blink F.

The purge valve opens, the water pump starts and the inlet water valve opens to add water to the reservoir. In a few seconds the purge valve closes and the water pump stops. Water will flow into the machine until the reservoir is full. The vapor valve and harvest assist device will activate, then the compressor and water pump will start. F will be on steady.

Note: Because the condensing unit is external to the ice making section, no visible signs of operation will be noticeable until the water begins to cool and frost forms on the evaporator tubing.

6. Go to the condensing unit and confirm that the compressor and fan motor are operating. Warm air will be discharged from the condenser.

Observe the Ready for Harvest indicator light. It may blink early in the cycle, that is normal. The control will ignore that signal for the first 6 minutes of freeze.

During the Freeze cycle move the curtain and observe that either the SW1 or SW2 light on the control board blinks On when the curtain moves away from the evaporator and Off when returned to its normal position.

Note: Moving the curtain during the Freeze cycle has no affect on control function, but will cause water to flow into the cube chute.

When enough ice has frozen, the Ready for Harvest indicator light will be on steady. After it's been on steady for a few seconds Harvest will begin.

The display shows an H. The vapor valve in the MC222X opens, and the harvest assist mechanism activates. In the CU the condenser bypass valve opens and the receiver inlet valve closes. In the MC222X, the purge valve opens to drain some water, when it does the inlet water valve opens to refill the reservoir. After a few seconds the purge valve closes but the inlet water valve continues to fill the reservoir. Harvest continues until the ice is released as a unit and forces the curtain to open.

When the curtain opens it signals the controller that harvest is complete, and it returns the unit to a freeze cycle.

7. Check the ice harvested for proper bridge thickness. The ice bridge is factory set at 1/8 inch. If needed, adjust bridge thickness. Do NOT make it too thin.
8. Instruct the user in the operation of the machine and its maintenance requirements.
9. Fill out and mail the warranty registration form or register it on line at www.scotsman-ice.com.

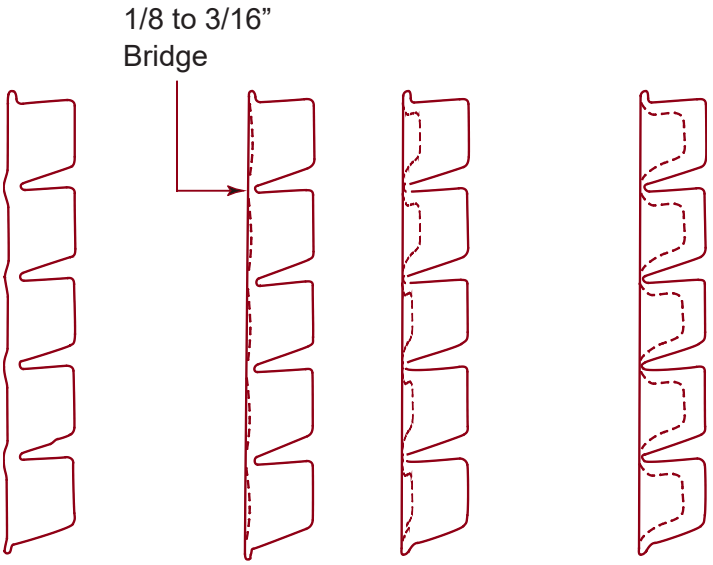
Ice Thickness and Water Purge Adjustment

Bridge Thickness - For the Service Tech Only

1. Push and hold Off till the machine stops.
2. Remove evaporator cover.
3. Remove curtain.
4. Use a hex wrench and rotate the bridge thickness adjustment screw in 1/16 turn increments CW to increase bridge thickness.
5. Rotate CCW to decrease bridge thickness.

Caution: Do not make the bridge too thin or the machine will not harvest properly. Bridge thickness adjustments are not covered by warranty.

6. Return curtain and evaporator cover to their normal positions.
7. Push and release the On button. Check next harvest of ice. Repeat steps 1-6 if needed.

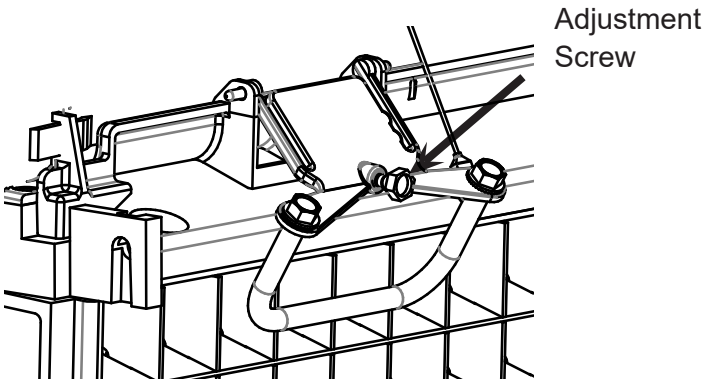


ice Bridge Thickness

Water Purge Setting

The water purge is factory set to the automatic position, suitable for most water conditions. The setting can be changed to one of 5 manual settings or left on automatic.

Setting	Water Type
1	Minimum - RO water or equivalent
2	Moderate - Low TDS, non RO
3	Standard - Use with typical water
4	Heavy - High TDS
5	Maximum - Very high TDS
A	Automatic - Factory setting



Bridge Thickness Adjustment Mechanism

To set:

1. Switch the machine OFF by holding the Off button in until a number or the letter A shows on the display.
2. Press and release the On button repeatedly until the number on the display corresponds to the desired setting.
3. Press and release the Off switch again to return to the normal control state.

Adjustable Ice Level Control

There is an adjustment post and an additional indicator light to the right of the four indicator lights. The ultrasonic ice level control allows the user to control the point that the ice machine will stop making ice before the bin or dispenser is full. Reasons for this include:

- Seasonal changes in ice used
- Planning to sanitize the bin
- Certain dispenser applications where maximum ice level is not desired

Use of control

There are several positions the ice level can be set to, including Off (knob and label indicators lined up), where it fills the bin until the standard bin control shuts the machine off.



Rotate the adjustment post to the desired ice level.

The machine will fill up to that level and when it shuts off the indicator light next to the adjustment post will be On.

Suggested Adjustment Knob Position for use with the ABS or Freestyle: first CW position - as shown above.

DO NOT ADJUST TOO LOW OR THE MACHINE WILL STOP MAKING ICE

Note: Ice will build up in the bin or dispenser at an angle, the distance set will be from the sensor to the top of the ice. The sensor position is shown in the cabinet layout diagrams.

The actual distance between the highest point of the ice may be closer or further away than the distance set, depending upon the angle of the ice.

Ice

The cuber drops ice in large sections. That ice will break up into random parts as it falls into the bin, but some large sections may remain on top of the ice in the bin. In a dispenser this ice will break up into mostly individual cubes as the dispense mechanism moves the ice.

Noise

The ice machine will make little noise when it is in ice making mode. The compressor and fan motor are remote from the ice making head. The water pump in the ice making head will produce some sound. It is also normal to hear some cracking just before the harvest cycle begins. In addition, during the harvest cycle the harvest assist solenoid will click twice as it pushes the ice out and returns to its normal position. The ice harvests as a unit or slab, which makes some noise when it impacts the bin or dispenser. These noises are all normal for this machine.

This ice system requires three types of maintenance:

- Remove the build up of mineral scale from the ice machine's water system and sensors.
- Sanitize the ice machine's water system and the ice storage bin or dispenser.
- Clean or replace the air filter and clean the air cooled condenser (air cooled models only).

It is the User's responsibility to keep the ice machine and ice storage bin in a sanitary condition. Without human intervention, sanitation will not be maintained. Ice machines also require occasional cleaning of their water systems with a specifically designed chemical. This chemical dissolves mineral build up that forms during the ice making process.

The ice machine's water system should be cleaned and sanitized a minimum of twice per year. Sanitize the ice storage bin as frequently as local health codes require, and every time the ice machine is cleaned and sanitized.

Preparing to Clean:

1. Remove the front panel.
2. Remove the evaporator cover.

Scale Removal:

3. Push and release the Clean button. The yellow Clean light will blink and the display will show C. The machine will harvest any ice, drain the reservoir and begin to refill it.
4. Observe code display, when it blinks the characters "A D I" immediately go to the next step.
5. Pour the below specified amount Scotsman Clear 1 ice machine scale remover into the reservoir. The unit will circulate the scale remover, then drain and flush it. This will take 35 minutes, then the machine will stop and the display will show O.

MC222X	8 ounces

Note: Using chemicals or dilution ratios other than what is specified will damage the ice machine and significantly affect the performance and life of the ice machine.

Clean internal parts:

6. Mix a cleaning solution of 6oz of Scotsman Clear 1 scale remover with 9 cups (72oz) of 105-115° F potable water.
7. In a separate bucket, mix a sanitizing solution of 1.6 oz of Nu-Calgon IMS Sanitizer with 1 gallon (128 oz) of 105-115 degree F. potable water.
8. Remove air filter(s)(if applicable), water level sensor and housing, water distributor(s), curtain(s), ice thickness sensor, and splash panel for additional cleaning.
9. Soak and scrub each part (including the evaporator cover!) using the previously prepared solution of Scotsman Clear 1 scale remover and a nylon brush, and then rinse with water. Save scale remover solution.
10. Soak and scrub each part using the previously prepared sanitizing solution. No rinse needed. Save sanitizing solution.
11. Using a non-metallic scouring pad, scrub spillway with sanitizer to remove any material buildup and debris.
12. Reinstall ice thickness sensor, curtain(s), splash panel, water distributor(s), and water level sensor in their original positions. Be sure water level sensor and ice thickness sensor are completely dry.

⚠CAUTION	Ice machine cleaner contains acids. Acids can cause burns.
	If concentrated cleaner comes in contact with skin, flush with water. If swallowed, do NOT induce vomiting. Give large amounts of water or milk. Call Physician immediately. Keep out of the reach of children.

Sanitize:

13. Push and release the Clean button. The yellow Clean light will blink and the display will show C. The machine will go through a harvest cycle, drain the reservoir and begin to refill it.
14. Observe code display, when it blinks the characters "A d I" immediately go to the next step.
15. Pour the previously prepared sanitizing solution into the reservoir until it is full. The unit will circulate the sanitizer, then drain and flush it. This will take 35 minutes, then the machine will stop and the display will show 0.
16. Remove all ice from storage bin or dispenser and sanitize bin or dispenser with remaining sanitizing solution while machine completes sanitizing cycle. Pour excess sanitizer down drain.

Finish Cleaning Process:

17. Reinstall evaporator cover and front panel (with air filter(s) if applicable) in their original positions.
18. Push and release the "ON" button to resume ice making.

Want more detail?

Scan QR Code to download the Scotsman IcelinQ™ App to connect to this machine via Bluetooth and access the self-guided cleaning process.

Additional maintenance:

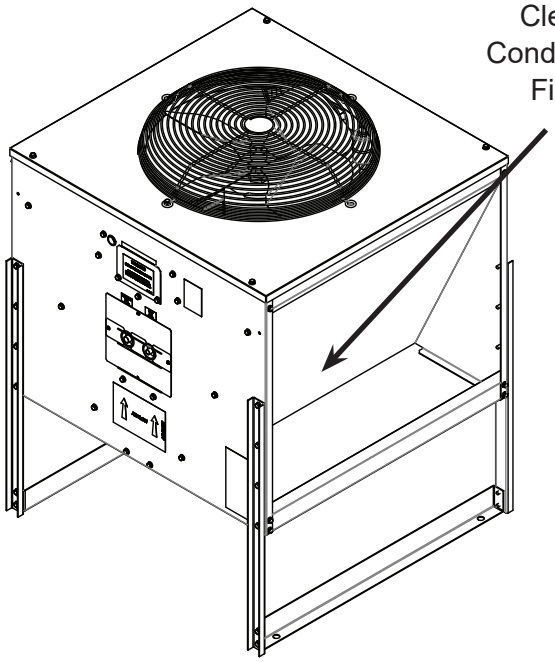
Remote Condenser

The condenser fins will need to be cleaned.

Push and release the Off button. Wait until the machine stops.

Note: Lock out the controller or the ice machine power supply to prevent an unauthorized fan motor restart.

If there is imbedded grease, use a commercial coil cleaner to wash out the grease. Dust can be blown out with compressed air from the inside or use a vacuum cleaner and soft brush. Be careful not to damage the condenser's fins. Use a fin comb to straighten any bent fins.



Exterior Panels

Fingerprints, dust and grease will require cleaning with a good quality stainless steel cleaner.

Water filters

If the machine has been connected to water filters, check the cartridges for the date they were replaced or for the pressure on the gauge. Change cartridges if they've been installed more than 6 months or if the pressure drops too much when the ice machine fills with water

Operational Characteristics 1000 lb system

Cycle Times @ Condenser Temp/Cabinet Temp/Water Temp in degrees F.

Cycle	20°/70°/40°	70°/70°/50°	90°/90°/70°	120°/100°/80°
Freeze	8 to 9 minutes	8 to 10 minutes	11 to 12 minutes	16 to 18 minutes
Harvest	3 to 4 minutes	2 to 2.5 minutes	1.5 to 2 minutes	0.5 to 1 minute

System Pressures @ Condenser Temp/Cabinet Temp/Water Temp in degrees F

Cycle	-20°/50°/40°	70°/70°/50°	90°/90°/70°	120°/100°/80°
Suction at head, end of Freeze	22 PSIG	26 to 31 PSIG	27 to 32 PSIG	30 to 35 PSIG
Suction at head, Harvest - Peak	88 PSIG	85 to 105 PSIG	90 to 110 PSIG	140 to 160 PSIG
Discharge at Condensing Unit: Freeze - 5 minutes in	219 PSIG	230 to 250 PSIG	240 to 250 PSIG	345 to 380 PSIG

Below information applies to both size systems:

Headmaster maintains a minimum discharge pressure during freeze of 217 PSIG + 25, -15 PSIG.

CPR Valve Setting: 80 PSIG.

Note: CPR allows a maximum low side pressure at the compressor. Maximum only occurs during harvest.

Refrigerant Charge

- 800: 192 oz.
- 1000: 248 oz

Compressor Amps, 800 model

- Single Phase - 6A - 8A
- Three Phase - 5A - 7A

Compressor Amps, 1000 model

- Single Phase - 8A - 9A,
- Three Phase - 5.2A - 6.3A

Batch Weight: 8 lbs

Discharge Pressure Cut Out Switch

- Cuts Out at: 450 PSIG Resets at: 350 PSIG

Reasons the machine might shut itself off:

- Lack of water.
- Freeze cycle takes too long.
- Harvest cycle takes too long.
- High discharge temperature.
- Controller self test failure.

Check the following:

1. Has the water supply to the ice machine or building been shut off? If yes, the ice machine will automatically restart within 25 minutes after water begins to flow to it.
2. Has power been shut off to the ice machine? If yes, the ice machine will automatically restart when power is restored.
3. Has someone shut the water off to a water cooled unit? If yes, after the water supply has been restored the ice machine may need to be manually reset.
4. Is the curtain open because some ice is stuck under it? If so, remove the ice and the machine should start in a few minutes.

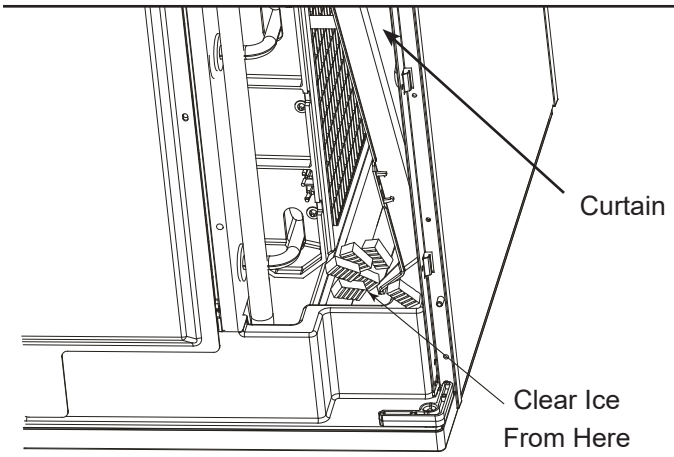
To Manually Reset the machine.

- Open the switch door
- Push and release the Off button.
- Push and release the On button.



Open Door to Reset or Switch Off

Note: Curtain can be removed & replaced anytime the machine is in a standby mode or when it is in a freeze cycle. However, removal of the curtain during freeze will result in water flowing into the bin. Removal of the curtain during harvest terminates harvest at that point and, if left off, will result in the machine shutting off.



Clear Ice From Beneath Curtain

Scotsman ICELINQ® Mobile App

All Prodigy Elite® models are Bluetooth® enabled and are compatible with the Scotsman ICELINQ® app, available on both the Apple App Store and Google Play Store.

The ICELINQ mobile app uses Bluetooth connectivity to allow users to easily monitor, control, and maintain their machine:

- View machine status
- Control machine operation
- Adjust machine settings
- View active errors with troubleshooting tips
- Initiate self-guided cleaning
- Access service resources and warranty info

Scan QR Code to download the Scotsman ICELINQ® App

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