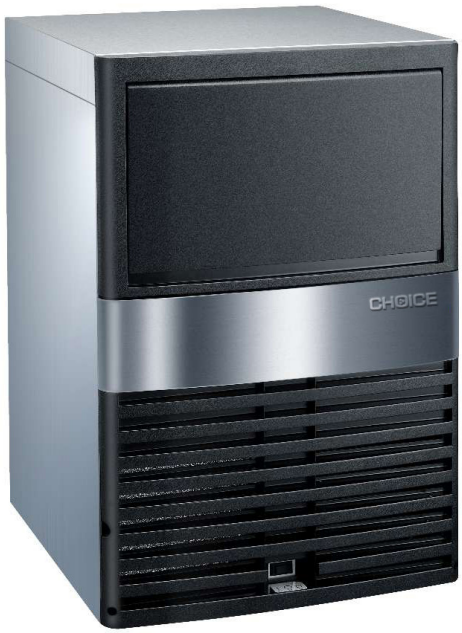
CHOICE Undercounter

HE0120 Series

Installation, Operation and Maintenance Manual



⚠Caution

Read this instruction before operating this equipment.

Part Number: 040009437 09/24

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Safety Notices

Safety Notices

Read these precautions to prevent personal injury:

- Read this manual thoroughly before installing,operating or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.
- Routine adjustments and maintenance procedures outlined in this manual are not covered by the warranty.
- Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website www.manitowocice.com for manual updates, translations, or contact information for service agents in your area.
- 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.
- This equipment is intended for indoor use only. Do not install or operate this equipment in outdoor areas.

Definitions

⚠ DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This applies to the most extreme situations.

⚠Warning

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠Caution

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Notice

Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

Note: Indicates useful, extra information about the procedure you are performing.

⚠Warning

Follow these precautions to prevent personal injury during installation of this equipment:

- Installation must comply with all applicable equipment fire and health codes with the authority having jurisdiction.
- To avoid instability the installation area must be capable of supporting the combined weight of the equipment and product. Additionally the equipment must be level side to side and front to back.
- Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.
- Connect to a potable water supply only.
- This equipment contains refrigerant charge. Installation of the line sets must be performed by a properly trained and EPA certified refrigeration technician aware of the dangers of dealing with refrigerant charged equipment.
- These products are hermetically sealed and contain fluorinated greenhouse gas R134a..

⚠Warning

Follow these electrical requirements during installation of this equipment.

- All field wiring must conform to all applicable codes of the authority having jurisdiction. It is the responsibility of the end user to provide the disconnect means to satisfy local codes. Refer to rating plate for proper voltage.
- This appliance must be grounded.
- This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., circuit breaker or disconnect switch) is provided.
- Check all wiring connections, including factory terminals, before operation. Connections can become loose during shipment and installation.

⚠ DANGER

Do not operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with, clean or maintain this appliance without proper supervision.

⚠ Warning

Follow these precautions to prevent personal injury while operating or maintaining this equipment:

- 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.
- Crush/Pinch Hazard. Keep hands clear of moving components. Components can move without warning unless power is disconnected and all potential energy is removed.
- Moisture collecting on the floor will create a slippery surface. Clean up any water on the floor immediately to prevent a slip hazard.
- Objects placed or dropped in the bin can affect human health and safety. Locate and remove any objects immediately.
- Never use sharp objects or tools to remove ice or frost. Do not use mechanical devices or other means to accelerate the defrosting process.
- When using cleaning fluids or chemicals, rubber gloves and eye protection (and/or face shield) must be worn.

⚠ DANGER

Follow these precautions to prevent personal injury during use and maintenance of this equipment:

- It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.
- Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance. Never use flammable oil soaked cloths or combustible cleaning solutions for cleaning.
- Risk of fire/shock. All minimum clearances must be maintained. Do not obstruct vents or openings.
- Failure to disconnect power at the main power supply disconnect could result in serious injury or death. The power switch DOES NOT disconnect all incoming power.
- All utility connections and fixtures must be maintained in accordance with the authority having jurisdiction.
- Turn off and lockout all utilities (gas, electric, water) according to approved practices during maintenance or servicing.
- Units with cords must be plugged into individual branch circuits. During movement, cleaning or repair it is necessary to unplug both power cords.
- Never use a high-pressure water jet for cleaning on the interior or exterior of this unit. Do not use power cleaning equipment, steel wool, scrapers or wire brushes on stainless steel or painted surfaces.
- The on-site supervisor is responsible for ensuring that operators are made aware of the inherent dangers of operating this equipment.
- Do not operate any appliance with a damaged cord or plug. All repairs must be performed by a qualified service company.

Section 1
General Information

Model Numbers

This manual covers the following models:

Self-Contained Air-Cooled	Self-Contained Water-Cooled
HDE0120A	----

Accessories

The following are optional spare parts. You can contact your Manitowoc distributor for these optional accessories.

TRI-LIMINATOR WATER FILTER SYSTEM

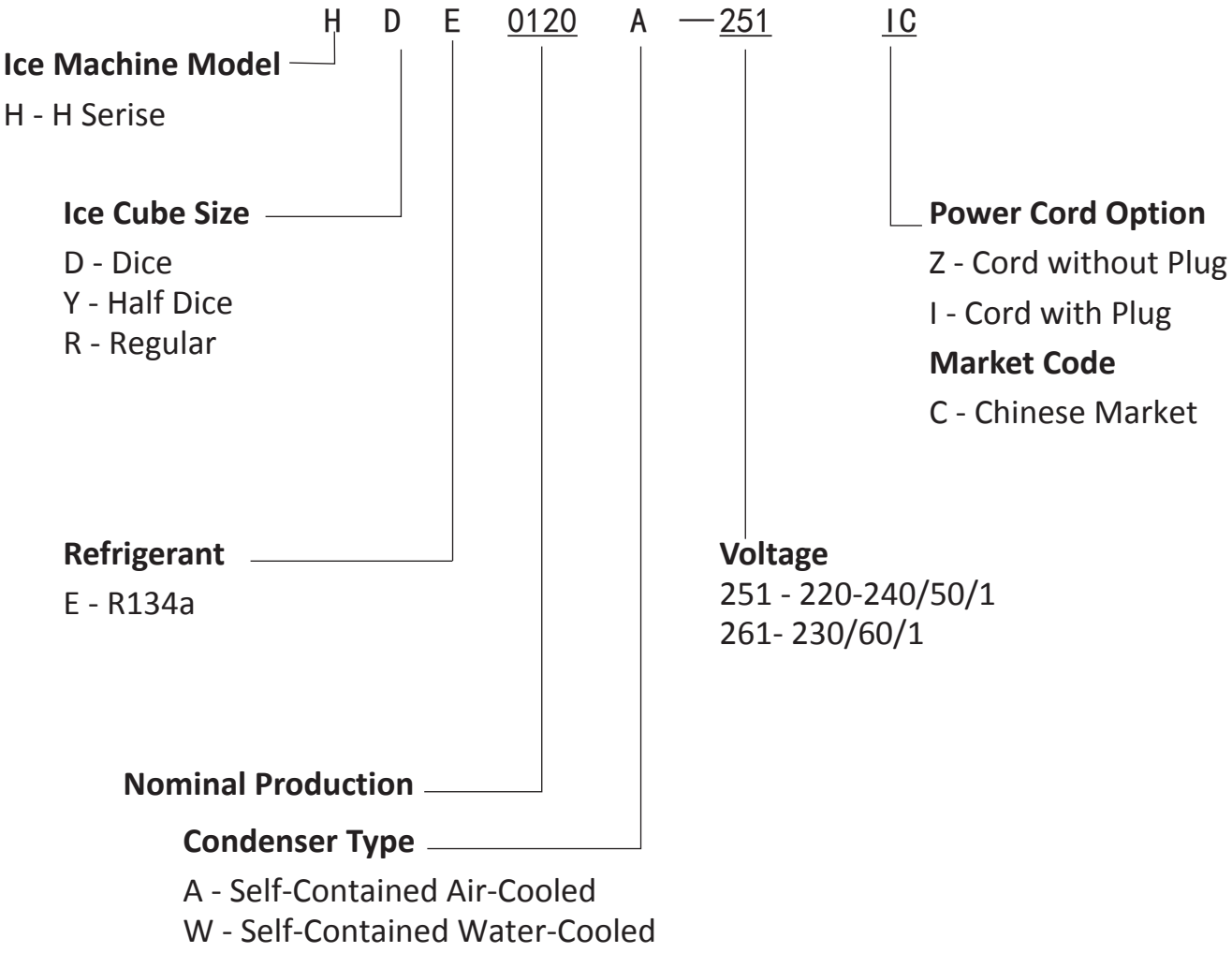
It can effectively prevent scale; efficiently and reliably filter out sediments; and remove chlorine and other odors in water.

DE-SCALER AND SANITIZER

Manitowoc Ice Machine De-scaler and Sanitizer are the only products approved for use in this ice machine.

De-scaler	Sanitizer
000016525	000016528

Model Nomenclature



Note:hese products are hermetically sealed and contain fluorinated greenhouse gas R134a.

Section 2
Installation

Location of Ice Machine

The location selected for the ice machine must meet the following criteria. If any of these criteria are not met, select another location.

- It must be installed indoors.
- The location must be free of airborne and other contaminants.
- The air temperature must be at least 35°F (1.6°C), but must not exceed 110°F (43.4°C).
- The location must not be near heat-generating (ovens, dishwashers, etc.) equipment or in direct sunlight and must be protected from weather.
- There must be enough space at the rear of the machine to facilitate water, electricity and drainage connections.
- The location must not obstruct airflow through or around the ice machine. Refer to the clearance requirements chart.

⚠Warning

Do not obstruct ice machine vents or openings.

Notice

The ice machine must be protected if it will be subjected to temperatures below 32°F (0°C). Failure caused by exposure to freezing temperatures is not covered by the warranty.

Clearance Requirements

HE0120	Self-Contained Air-Cooled
Top/Side	5" (12.7 cm)*
Back	5" (12.7 cm)

Note: The ice machine may be built into a cabinet.There is no minimum clearance requirement for the top or left and right sides of the ice machine. The listed values are recommended for efficient operation and servicing only.

Ice Machine Heat of Rejection

Series Ice Machine	Heat of Rejection [1]	
	Air Conditioning [2]	Peak
HE0120	1750	2600

1 B.T.U./Hour

2 Because the heat of rejection varies during the ice making cycle, the figure shown is an average.

Ice machines, like other refrigeration equipment, reject heat through the condenser. It is helpful to know the amount of heat rejected by the ice machine when sizing air conditioning equipment where self-contained air-cooled ice machines are installed.

Leveling the Ice Machine

After moving the ice machine into the installation location, it must be leveled for proper operation. Follow these steps to level the ice machine:

1. Screw the leveling legs onto the base of the ice mathine.
2. Screw the foot of each leg in as far as possible.

⚠Caution

The legs must be screwed in tightly to prevent them from bending.

3. Move the ice machine into its final position.

⚠Warning

Do not obstruct ice machine vents or openings.

4. Level the ice machine to assure that the siphon system functions correctly. Use a level on top of the ice machine. Turn each foot as necessary to level the ice machine from front to back and side to side.

Electrical Service

⚠Warning

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

⚠Warning

When in use, be sure to power the ice machine according to the specifications marked on the Model/Serial Plate.

VOLTAGE

The maximum allowable voltage variation is ±10% of the rated voltage at ice machine start-up (when the electrical load is highest).

Fuse/Circuit Breaker

A separate fuse/circuit breaker must be provided for each ice machine. Circuit breakers must be H.A.C.R. rated (does not apply in Canada).

⚠Warning

The ice machine must be grounded in accordance with national and local electrical codes.

MINIMUM CIRCUIT AMPACITY

The minimum circuit ampacity is used to help select the wire size of the electrical supply. (Minimum circuit ampacity is not the ice machine's running amp load.)

The wire size (or gauge) is also dependent upon location, materials used, length of run, etc., so it must be determined by a qualified electrician

GROUND FAULT CIRCUIT INTERRUPTER

Ground Fault Circuit Interrupter (GFCI/GFI) protection is a system that shuts down the electric circuit (opens it) when it senses an unexpected loss of power, presumably to ground. GFCI/GFI circuit protection is not recommended with our equipment. If code requires the use of a GFCI/GFI, then you must follow the local code. The circuit must be dedicated, sized properly and there must be a panel GFCI/GFI breaker. We do not recommend GFCI/GFI outlets as they are known for more intermittent nuisance trips than panel breakers.

⚠Warning

If the power cord of the ice machine is damaged, do not operate the machine until it has been replaced by an authorized service provider or qualified personnel.

Maximum Breaker Size & Minimum Circuit Amperage Chart

Important

Due to continuous improvements, this information is for reference only. Please refer to the ice machine serial number tag to verify electrical data. Serial tag information overrides information listed on this page.

Series Ice Machine	Voltage/Phase/Cycle	Air-Cooled	
		Maximum Fuse/Circuit Breaker	Minimum Circuit Amps
HE0120	230/1/50	15A	4.0A

Water Supply and Drain Connections

WATER SUPPLY REQUIREMENTS

Local water conditions may require treatment of the water to inhibit scale formation, filter sediment, and remove chlorine odor and taste.

⚠Warning

Connect to a potable water supply only. Plumbing must conform to state, local and national codes.

WATER INLET LINES

Follow these guidelines to install water inlet lines:

- If you are installing a water filter system, refer to the installation instructions supplied with the filter system for ice making water inlet connections.
- Do not connect the ice machine to a hot water supply. Be sure all hot water restrictors installed for other equipment are working. (Check valves on sink faucets, dishwashers, etc.)
- If water pressure exceeds the maximum recommended pressure of 80 psi (552 kPa), obtain a water pressure regulator from your local distributor.
- Install a water shut-off valve for the ice making.
- Insulate water inlet lines to prevent condensation.

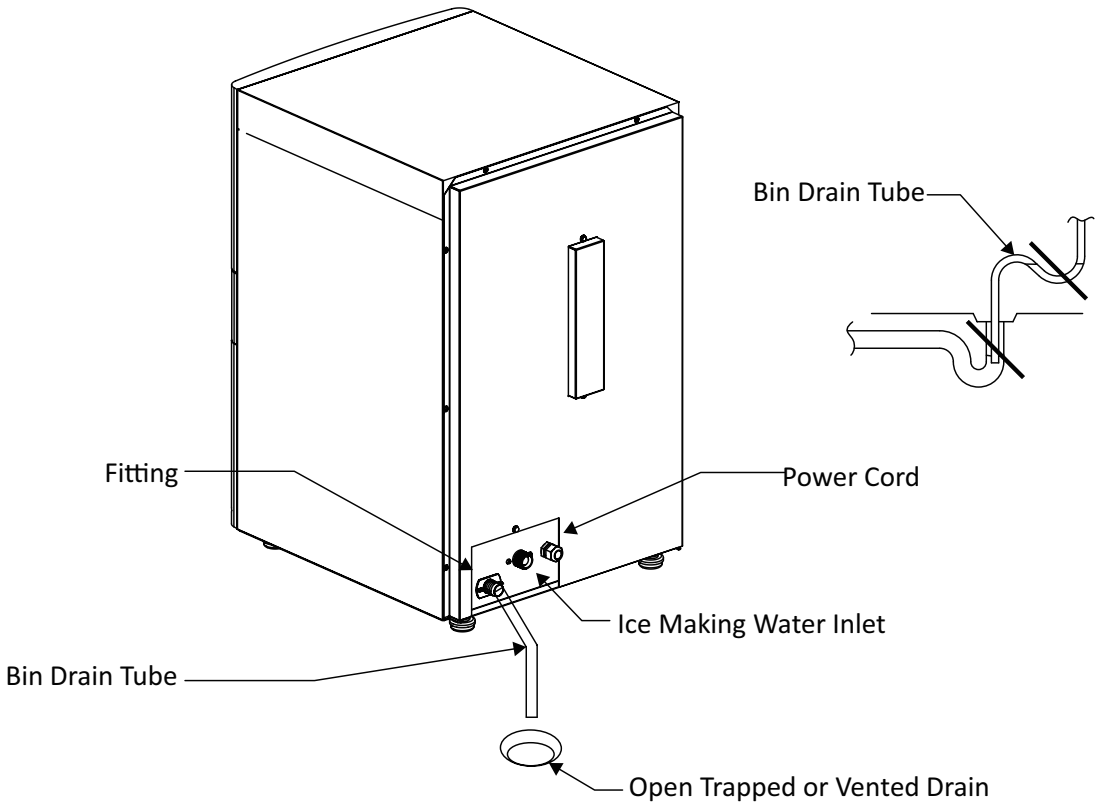
DRAIN CONNECTIONS

Follow these guidelines when installing drain lines to prevent drain water from flowing back into the ice machine and storage bin:

- Drain lines must have a 1.5 inch drop per 5 feet of run (2.5 cm per meter), and must not create traps.
- The floor drain must be large enough to accommodate drainage from all drains.
- Insulate drain lines to prevent condensation.
- Vent the bin drain to the atmosphere.

WATER SUPPLY AND DRAIN LINE SIZING/CONNECTIONS

Location	Water Temperature	Water Pressure	Ice Machine Fitting
Ice Making Water Inlet	0.6°C Min. 32°C Max.	20 psi (138 kPa) Min. 80 psi (552 kPa) Max.	1/2"NPT
Ice Making Water Drain	–	–	7/8"Adapter Connector



Notice

Do not apply heat to water inlet valve or water drain fittings. Heating will damage the nonmetallic connector. Do not over tighten fittings. Two turns after hand tight is the maximum.

Before Starting the Ice Machine

All ice machines are factory-operated and adjusted before shipment. Normally, new installations do not require any adjustment. Starting the ice machine and completing the Operational Checks are the responsibilities of the owner/operator.

Step 1 Refer to "De-scaling and Sanitizing" on page 21 and sanitize the ice machine and bin before placing in operation.

Step 2 Refer to "Ice Making Sequence of Operation" on page 17 for operational details.

⚠Warning

Potential Personal Injury Situation

Do not operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications.

Installation Check List

- ☐ Is the Ice Machine level?
- ☐ Has all of the internal packing been removed?
- ☐ Have all of the electrical and water connections been made?
- ☐ 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?
- ☐ Are the ice machine drains vented?
- ☐ Has the ice machine been installed where ambient temperatures will remain in the range of 35° - 110°F (1.6° - 43.3°C)?
- ☐ Has the ice machine been installed where the incoming water temperature will remain in the range of 33° - 90°F (0.6° - 32.2°C)?
- ☐ Are all refrigerant lines free from contact with other components?
- ☐ 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 our De-scaler and Sanitizer?
- ☐ Has the owner/operator completed the warranty registration card?
- ☐ Has the ice machine and bin been sanitized?

Section 3
Ice Machine Operation

Ice Making Sequence of Operation

INITIAL START-UP OR START-UP AFTER AUTOMATIC SHUT-OFF

1.Pressure Equalization

Before the compressor starts the hot gas valve is energized for 15 seconds to equalize pressures during the initial refrigeration system start-up.

2.Refrigeration System Start-Up

The compressor starts after the 15-second pressure equalization, and remains on throughout the entire Freeze and Harvest Sequences. The hot gas valve remains on for 5 seconds during initial compressor start-up and then shuts off.

FREEZE SEQUENCE

3.Prechill

The compressor is on for 30 seconds prior to water flow to Prechill the evaporator.

4.Freeze

The water pump starts after the 30-second Prechill. An even flow of water is directed across the evaporator and into each cube cell, where it freezes.

When sufficient ice has formed, the water flow (not the ice) contacts the ice thickness probe. After approximately 7 seconds of continual water contact, the Harvest Sequence is initiated. The ice machine cannot initiate a Harvest Sequence until a 6-minute freeze time has been surpassed.

HARVEST SEQUENCE

5.Harvest

The water pump de-energizes stopping flow over the evaporator. The rising level of water in the water trough diverts water out of the overflow tube, purging excess minerals from the water trough. The hot gas valve also opens to divert hot refrigerant gas into the evaporator.

The refrigerant gas warms the evaporator causing the cubes to slide, as a sheet, off the evaporator and into the storage bin. The sliding sheet of cubes contacts the ice damper, opening the bin switch.

The momentary opening and re-closing of the bin switch terminates the Harvest Sequence and returns the ice machine to the Freeze Sequence (steps 3 - 4).

AUTOMATIC SHUT-OFF

6.Automatic Shut-Off

When the storage bin is full at the end of a Harvest Sequence, the sheet of cubes fails to clear the ice damper and will hold it down. After the ice damper is held open for 7 seconds, the ice machine shuts off. The ice machine remains off for 3 minutes before it can automatically restart.

The ice machine remains off until enough ice has been removed from the storage bin to allow the ice to fall clear of the damper. As the ice damper swings back to the operating position, the bin switch re-closes and the ice machine restarts (steps 1 - 2), provided the 3-minute delay period is complete.

ENERGIZED PARTS CHART

SEQUENCE		CONTROL BOARD RELAYS			RELAY		LENGTH of "ON" TIME
		WATER PUMP	HOT GAS VALVE	RELAY COIL	COMPRESSOR*	FAN MOTOR	
INITIAL START-UP/START UP AFTER AUTO SHUT-OFF	Pressure Equalization	OFF	ON	OFF	OFF	OFF	15 Seconds
	Refrigeration System Start-up	OFF	ON	ON	ON	ON	5 Seconds
FREEZE SEQUENCE	Pre-Chill	OFF	OFF	ON	ON	ON	30 Seconds
	Freeze	ON	OFF	ON	ON	ON	Until 7 sec. water contact with ice thickness probe
HARVEST SEQUENCE		OFF	ON	ON	ON	ON	Bin switch activation
AUTOMATIC SHUT-OFF		OFF	OFF	OFF	OFF	OFF	Until bin switch re-closes

***Condenser Fan Motor: The fan motor is wired through a fan cycle pressure control, therefore, it may cycle on and off.**

Safty Limits

SAFTY LIMITS #1——FREEZING TIME LIMIT

If the freeze time reaches 60 minutes, the control board automatically initiates a harvest cycle. If three consecutive 60-minute freeze cycles occur, the ice machine stops and the orange light on control board flashes slowly. If the toggle switch is turned to OFF then to ICE position, the ice machine will re-start.

SAFTY LIMITS #2——HARVEST TIME LIMIT

If the harvest time reaches 3.5 minutes, the control board automatically initiates a prechill process. If three consecutive 3.5-minute harvest cycles occur, the ice machine stops and the orange light on control board flashes quickly. If the toggle switch is turned to OFF then to ICE position, the ice machine will re-start.

Operational Checks

GENERAL

Your ice machine was factory-operated and adjusted before shipment. Normally, a newly installed ice machine does not require any adjustment.

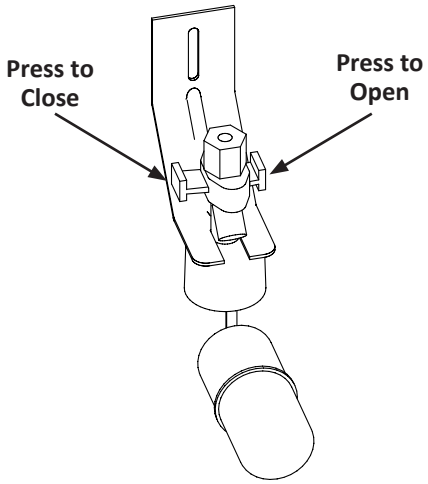
To ensure proper operation, always follow these Operational Checks when starting the ice machine:

- For the first time
- After a prolonged out of service period
- After cleaning and sanitizing

Note: Routine adjustments and maintenance procedures outlined in this manual are not covered by the warranty.

WATER FLOAT VALVE CHECK

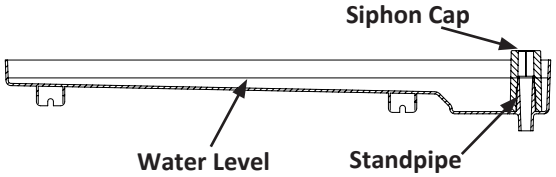
Before water will flow into the water trough the float valve shut-off must be in the OPEN position.



SIPHON SYSTEM

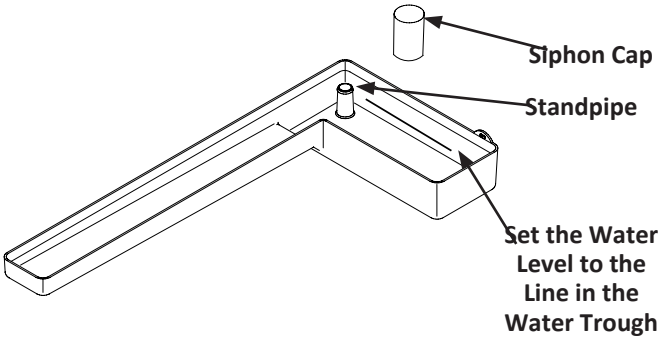
To reduce mineral build-up and cleaning frequency, the water in the sump trough must be purged during each harvest cycle.

When the water pump de-energizes the level in the water trough rises above the standpipe starting a siphon action. The siphon action stops when the water level in the sump trough drops. When the siphon action stops, the float valve refills the water trough to the correct level.



Water Level Check

Check the water level while the ice machine is in the ice mode and the water pump is running. The correct water level is 1/4" (6.3 mm) to 3/8" (9.5 mm) below the top of the standpipe a line in the water trough indicates the correct level.



Siphon System Check

The float valve is factory-set for the proper water level. If adjustments are necessary:

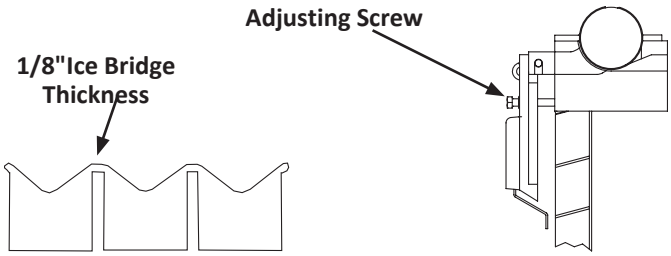
1. Verify the ice machine is level (see “Leveling the Ice Machine” on page 12).
2. Remove the siphon cap from the standpipe.
3. Place the main ON/OFF/WASH toggle switch to the ON position, and wait until the float valve stops adding water.
4. Adjust the water level to (1/4" to 3/8" [6.3 to 9.5 mm] below the standpipe) the line in the water trough.
5. Loosen the two screws on the float valve bracket.
6. Raise or lower the float valve assembly as necessary, then tighten the screws.
7. Move the main ON/OFF/ WASH toggle switch to the OFF position. The water level in the trough will rise above the standpipe and run down the drain.
8. Replace the siphon cap on the standpipe, and verify water level and siphon action by repeating steps 3 through 5.

ICE BRIDGE THICKNESS CHECK

The ice thickness probe is factory-set to maintain the ice bridge thickness at 1/8” (3.2 mm).

1. Inspect the bridge connecting the cubes. It should be about 1/8” (3.2 mm) thick.
2. If adjustment is necessary, turn the ice thickness probe adjustment screw clockwise to increase bridge thickness, or counterclockwise to decrease bridge thickness.

Note: Turning the adjustment 1/3 of a turn will change the ice thickness about 1/16” (1.5 mm).



Make sure the ice thickness probe wire and the bracket do not restrict movement of the probe.

Section 4
Maintenance

De-scaling and Sanitizing

GENERAL

De-scale and sanitize the ice machine every six months for efficient operation. If the ice machine requires more frequent de-scaling , consult a qualified service company to test the water quality and recommend appropriate water treatment.

Sanitizing can be performed independently and more frequently than de-scaling if desired.

Manitowoc Ice Machine De-scaler and Sanitizer are the only products approved for use in this ice machine.

Ice machine de-scaler is used to remove lime scale and mineral deposits. Ice machine sanitizer disinfects and removes algae and slime.

⚠Caution

Use only approved Ice Machine De-scaler and Sanitizer for this application (Manitowoc De-scaler part number 000016525 and Manitowoc Sanitizer part number 000016528). It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling. Read and understand all labels printed on bottles before use.

⚠Warning

Do not mix De-scaler and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling.

⚠Warning

Wear rubber gloves and safety goggles (and/or face shield) when handling Ice Machine De-scaler or Sanitizer.

DETAILED DE-SCALING/SANITIZING PROCEDURE

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

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

Before De-scaling/Sanitizing

Step 1 Ice must not be on the evaporator during the de-scale/sanitize cycle.Follow one of the methods below:

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

Notice

Never use anything to force ice from the evaporator. Damage may result.

Step 2 Remove all ice from the bin

Detailed De-scaling

Step 1 Mix a solution of de-scaler and lukewarm water. Use the ratio in the table below to mix a de-scaler solution to thoroughly de-scaler the ice machine.

Model	Water	Mixed with
H0120	1L	1Package

⚠Caution

Do not mix more than 2 packets of descaler per 34 oz(1 Liter) of warm water. Contents will not dissolve properly.

⚠Caution

Do not pour packgae directly into the ice machine trough. Power must be dissolved in 34 oz(1 Liter) of water first.

Step 2 Place the toggle switch in the CLEAN position. Add the de-scaler solution in the trough.

⚠Caution

Be sure to pour all of the prepared solution down the trough.

Step 3 Wait until the clean cycle is complete(approximately 25 minutes),then place the toggle switch in the OFF position . Then disconnect power to the ice machine.

⚠Warning

Disconnect the electric power to the ice machine at the electric service switch box.

Step 4 Remove parts for de-scaling.

Please refer to "Parts Removal" on page 24 and continue with step 5 when the parts have been removed.

Step 5 Mix a solution of de-scaler 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.

Model	Water	Mixed with
H0120	3.7L	4Package

Step 6 Use 1/2 of the de-scaler/water mixture to clean all components. The de-scaler solution will foam when it contacts lime scale and mineral deposits; once the foaming stops 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 when heavily scaled). Rinse all components with clean water.

Step 7 While components are soaking, use 1/2 of the de-scaler/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 machine areas:

- Evaporator plastic parts – including top, bottom and sides
- Bin bottom, sides and top

Step 8 Rinse all areas thoroughly with clean water.

DETAILED SANITIZING

Note: Sanitizing can be performed separately.

⚠Caution

Do not mix De-scaler and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling.

Step 9 Mix a solution of sanitizer and lukewarm water.

Solution Type	Water	Mixed with
Sanitizer	11.4L	3Package

Step 10 Use 1/2 of 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. Do not rinse parts after sanitizing.

Step 11 Use 1/2 of 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:

- Evaporator plastic parts - including top, bottom and sides
- Ice machine base (top of bin) and area above the water trough
- Bin sides and bottom

Do not rinse the sanitized areas.

Step 12 Replace all removed components. Wait 10 minutes.

Step 13 Mix a solution of sanitizer and lukewarm water.

Model	Water	Mixed with
H0120	1L	1Package

⚠Caution

Do not pour packgae directly into the ice machine trough. Power must be dissolved in 34 oz(1 Liter) of water first.

Step 14 Reapply power to the ice machine and place the toggle switch in the CLEAN position.

Step 15 Add the prepared sanitizer solution in the trough.

⚠Caution

Be sure to pour all of the prepared solution down the trough.

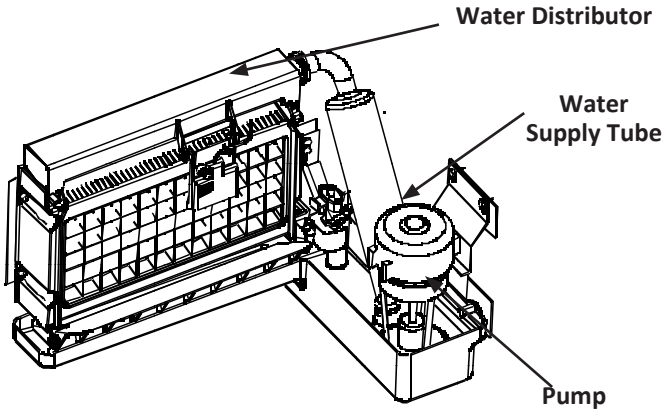
Step 16 After the sanitize cycle is complete(approximately 25 minutes),then move the toggle switch to the ICE position to start ice making.

Parts Removal

⚠Warning

Before proceeding with the following steps, be sure to disconnect the ice machine from the power source.

A. Remove the water supply tube Connecting the Water Pump and Water Distributer.



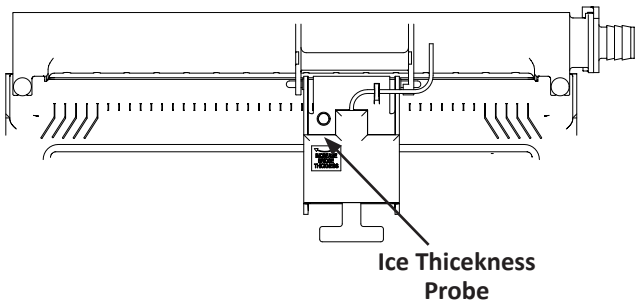
B. Remove Water Pump

- Unscrew the screws of the back panel and remove the back panel.
- Unplug the power cord of the water pump from the rear of the ice machine.
- Loosen the screws securing the pumpmounting bracket to the bulkhead
- Lift the pump and bracket assembly off the mounting screws.

Note: Do not soak water pump motor in De-scaler or Sanitizer solution.

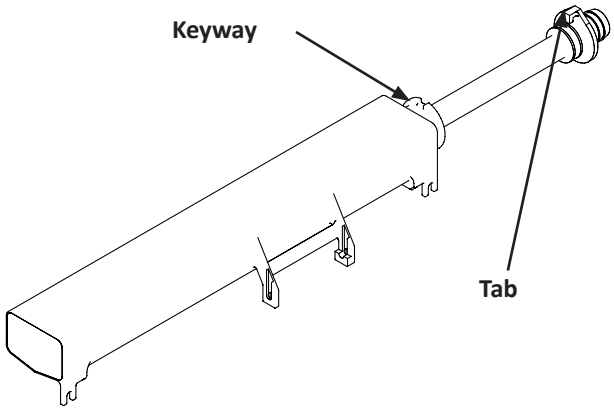
C. Remove the Ice Thickness Probe

- Compress the side of the ice thickness probe near the top hinge pin and remove it from the bracket.



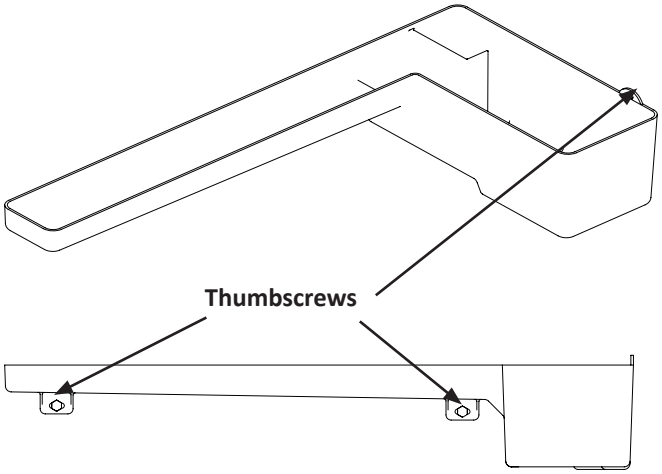
D. Remove the Water Distributor

- Loosen the two thumbscrews, which secure the distribution tube.
- Lift the right side of the distribution tube up off the locating pin, then slide it back and to the right.
- Twist both of the inner tube ends until the tabs line up with the keyways.
- Pull the inner tube ends outward.



E. Remove the Water Trough

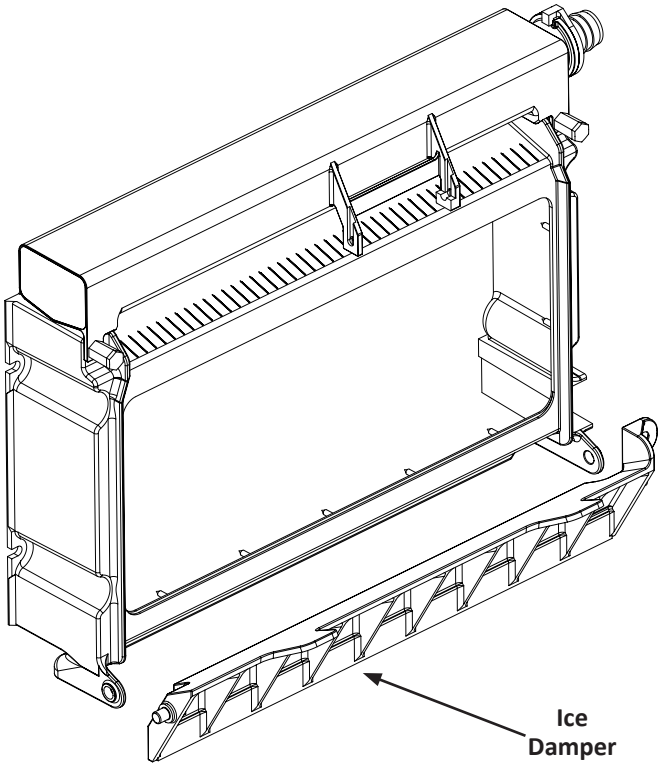
- Apply downward pressure on the siphon tube and remove from the bottom of the water trough.
- Remove the upper thumbscrew.
- While supporting the water trough remove the two thumbscrews from beneath the water trough.
- Remove the water trough from the bin area.



F. Remove the ice damper

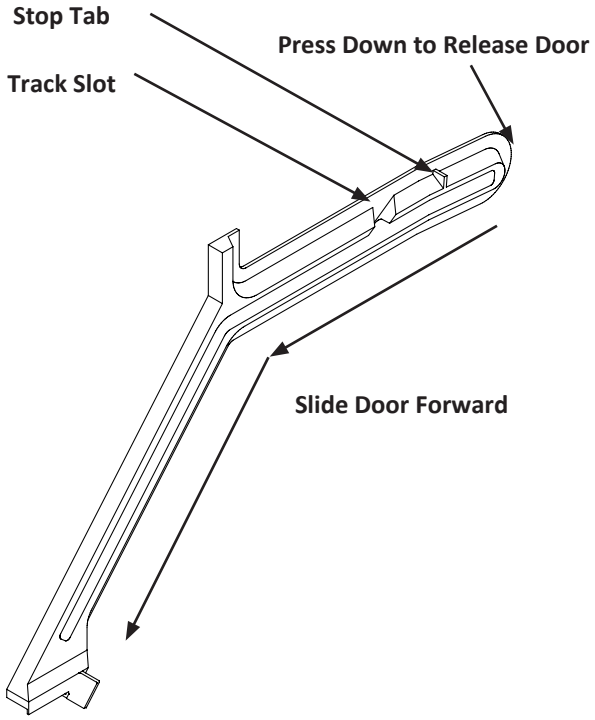
- Grasp ice damper and apply pressure toward the left hand mounting bracket.
- Apply pressure to the right hand mounting bracket with thumb.
- Pull ice damper forward when the right hand ice damper pin disengages.

Note: When installing the ice amper, apply pressure to the right hand mounting bracket with thumb,then push ice damper toward evaporator until right hand damper pin engages.



G. Remove the Bin Door

- Grasp the rear of the bin door and pull bin door forward approximately 5” (13 cm).
- Slide bin door to the rear while applying upward pressure (The rear door pins will ride up into the track slot and slide backward to the stop tab).
- While applying pressure against the bin door pull down on the rear of each bin door track until the door pins clear the stop tabs.
- Slide the rear door pins off the end and then below the door track. Slide bin door forward allowing the back of the door to lower into the bin. Continue forward with the bin door until the front pins bottom out in the track.
- Lift right side of door until the front pins clear the track, then remove door from bin.



Preventive Descaling Procedure

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

Step 1 Ice must not be on the evaporator during the de-scale/sanitize cycle.Follow one of the methods below:

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

Notice

Never use anything to force ice from the evaporator. Damage may result.

⚠Warning

Wear rubber gloves and safety goggles (and/or face shield) when handling Ice Machine De-scaler or Sanitizer.

Step 2 Mix a solution of de-scaler and lukewarm water. Use the ratio in the table below to mix a de-scaler solution to thoroughly de-scaler the ice machine.

Model	Water	Mixed with
H0120	1L	1Package

⚠Caution

Do not mix more than 2 packets of descaler per 34 oz(1 Liter) of warm water. Contents will not dissolve properly.

⚠Caution

Do not pour packgae directly into the ice machine trough. Power must be dissolved in 34 oz(1 Liter) of water first.

Step 3 Place the toggle switch in the CLEAN position. Add the de-scaler solution in the trough.

> **⚠Caution**
>
> Be sure to pour all of the prepared solution down the trough.

Step 4 Wait until the clean cycle is complete(approximately 25 minutes),then place the toggle switch in the ICE position to start ice making.

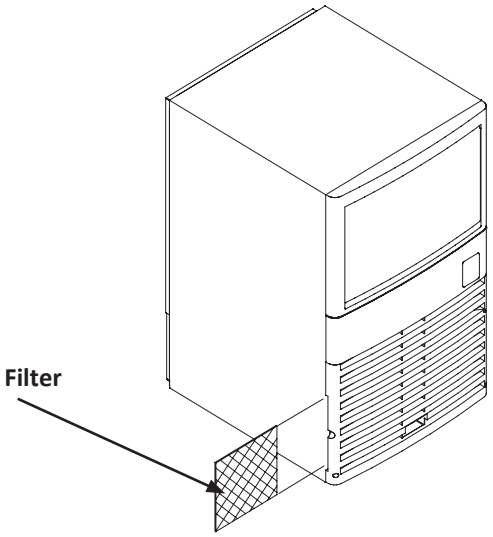
Exterior Cleaning

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.

Cleaning the Condenser Filter

The washable filter on self-contained ice machines is designed to catch dust, dirt, lint and grease. Clean the filter with a mild soap and water.



Cleaning the Condenser

> **⚠Warning**
>
> Disconnect electric power to the ice machine head section and the remote condensing unit at the electric service switches before cleaning the condenser.

A dirty condenser restricts airflow, resulting in excessively high operating temperatures. This reduces ice production and shortens component life.

- Clean the condenser at least every six months.

> **⚠Warning**
>
> The condenser fins are sharp. Use care when cleaning them.

- Shine a flashlight through the condenser to check for dirt between the fins.

- Blow compressed air or rinse with water from the inside out (opposite direction of airflow).

If dirt still remains call a service agent to clean the condenser.

Removal from Service/Winterization

1. Clean and sanitize the ice machine.
2. Move the toggle switch to the OFF position and turn off the ice machine.
3. Remove the overflow tube to drain the water trough.
4. Turn off the water supply, disconnect the drain and the incoming ice-making water line at the rear of the ice machine..
5. Make sure no water is trapped inside the ice machine incoming water lines, drain lines,distribution tubes, etc. Blow compressed air through the line if necessary.

Section 5
Troubleshooting

Before Calling for Service 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	Replace the fuse/reset the breaker/turn on the main switch
	Toggle switch set improperly	Move the toggle switch to the ON position
	Damper in open position (down).	Damper must be in upright position and capable of swinging freely.
Ice machine stops, and can be restarted by turning the ice machine OFF and then ON.	Safety limit feature stopping the ice machine.	Refer to "Safety Limit Feature" on page 32
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	Air temperature must be at least 1.6°C (35°F)
Ice machine does not cycle into harvest mode.	The six-minute freeze time lock-in has not expired yet.	Wait for freeze lock-in to expire.
	Ice thickness probe is dirty.	Clean and sanitize the ice machine.
	Ice thickness probe wire is disconnected.	Connect the wire.
	Ice thickness probe is out of adjustment.	Adjust the ice thickness probe.
	Uneven ice fill (thin at top of evaporator).	Refer to “Ice machine produces shallow or incomplete cubes, or the ice fill pattern on the evaporator is incomplete” on page 30

Problem	Possible Cause	To Correct
Ice quality is poor (soft or not clear).	Poor incoming water quality.	Contact a qualified service company to test the quality of the incoming water and make appropriate filter recommendations.
	Water filtration is poor.	Replace the filter.
	Ice machine is dirty.	De-scale and sanitize the ice machine.
	Water siphon is not working.	Check the water siphon system.
	Water softener is working improperly (if applicable).	Repair the water softener.
Ice machine produces shallow or incomplete cubes, or the ice fill pattern on the evaporator is incomplete	Ice thickness probe is out of adjustment.	Adjust the ice thickness probe.
	Water trough level is to high or too low.	Check the water level.
	Water filtration is poor	Replace the filter
	Hot incoming water	Connect the ice machine to a cold water supply
	Water float valve is not working.	Remove the water float valve and clean it.
	Incorrect incoming water pressure	Water pressure must be 240-620 kPA (34.8 - 89.9 psi)
	Ice machine is not level	Level the ice machine

Problem	Possible Cause	To Correct
Low ice capacity	Water float valve filter screen is dirty.	Remove and clean the filter screen.
	Incoming water supply is shut off	Open the water service valve
	Water float valve stuck open or leaking.	Remove the water float valve and clean it.
	The air filter is dirty	Clean the air filter
	The condenser is dirty	Clean the condenser
	Objects stacked around ice machine, blocking airflow to condenser.	Remove items blocking airflow.
	High air temperature around ice machine (air-cooled models).	Air temperature must not exceed 110°F (43°C).
	Inadequate airflow at the front of the ice machine	Remove items blocking airflow at the front of the ice machine

Safety Limit Feature

In addition to the standard safety controls, your Manitowoc ice machine features built-in safety limits that will stop the ice machine if conditions arise which could cause a major component failure.

Before calling for service, re-start the ice machine using the following procedure:

1. Move the toggle switch to OFF and then back to ON.
   A. If the safety limit feature has stopped the ice machine, it will restart after a short delay. Proceed to step 2.
   B. If the ice machine does not restart, see "Ice machine does not operate" on the previous page.
2. Allow the ice machine to run to determine if the condition is reoccurring.
   A. If the ice machine stops again, the condition has reoccurred. Call for service.
   B. If the ice machine continues to run, the condition has corrected itself. Allow the ice machine to continue running.

DETERMINING THE TYPE OF SAFETY LIMIT

When the ice machine stops due to a safety limit, the Harvesting light on the control board will flash. Follow the steps below to determine which safety limit has shut down the ice machine.

1. Turn the toggle switch to the "OFF" position and then to the "ON" position.
2. Observe the Harvesting light:

- If it flashes once, it means the machine has stopped due to safety limit #1;
- If it flashes twice, it means the machine has stopped due to safety limit #2.

Note:

- The Harvesting light will also flash if water splashes onto the ice thickness probe during the ice making process. Do not mistake the flashing Harvesting light during ice making as a safety limit indication;
- After completing 100 consecutive ice harvesting processes, the safety limit record will be cleared;
- The control board only records and indicates the most recent safety limit;
- Before completing 100 ice harvesting cycles, turn the toggle switch to "OFF" and then to "ON", and the most recent safety limit will be indicated.
- If the Harvesting light does not flash before the ice machine restarts, it means the ice machine did not shut down due to safety limit protection.

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