

Model USP0100A

Installation, Operation and Maintenance Manual



Original Document

Part Number 000016382 Rev00 6/20

 **Caution**

Read this instruction before operating this equipment.

Safety Notices

Safety Notices

Read these precautions to prevent personal injury:

- 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.
- 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.

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.

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.
- Remove all removable panels before lifting and installing and use appropriate safety equipment during installation and servicing. Two or more people are required to lift or move this appliance to prevent tipping and/or injury.
- Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.
- Connect to a potable water supply only.
- Legs or casters must be installed and the legs/casters must be screwed in completely. When casters are installed the mass of this unit will allow it to move uncontrolled on an inclined surface. These units must be tethered/secured to comply with all applicable codes. Swivel casters must be mounted on the front and rigid casters must be mounted on the rear. Lock the front casters after installation is complete.

⚠ DANGER

Follow these flammable refrigeration system requirements during installation, use or repair of this equipment:

- Refer to nameplate - Ice machine models may contain up to 150 grams of R290 (propane) refrigerant. R290 (propane) is flammable in concentrations of air between approximately 2.1% and 9.5% by volume (LEL lower explosion limit and UEL upper explosion limit). An ignition source at a temperature higher than 470°C is needed for a combustion to occur. Refer to nameplate to identify the type of refrigerant in your equipment.
- To minimize the risk of ignition due to improper installation, replacement parts or service procedures, only refrigeration technicians with flammable refrigerant training who are aware of the dangers of dealing with high voltage electricity and refrigerant under pressure are allowed to work on this equipment.
- All replacement parts must be like components obtained from the equipment manufacturers authorized replacement part network.
- This equipment must be installed in accordance with the ASHRAE 15 Safety Standard for Refrigeration Systems.
- This equipment can not be installed in corridors or hallways of public buildings.
- Installation must comply with all applicable equipment fire and health codes with the authority having jurisdiction.
- All lockout and tag out procedures must be followed when working on this equipment.
- This equipment contains high voltage electricity and refrigerant charge. Shorting electrical wires to refrigeration tubing may result in an explosion. All electrical power must be disconnected from the system before servicing the system. Refrigerant leaks, can result in serious injury or death from explosion, fire, or contact with refrigerant or lubricant mists.
- Do not damage the refrigeration circuit when installing, maintaining or servicing the unit. Never use sharp objects or tools to remove ice or frost. Do not use mechanical devices or other means to accelerate the defrosting process.

⚠ 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

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.

⚠ 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.
- All covers and access panels must be in place and properly secured when operating this equipment.
- 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.
- 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.
- Two or more people are required to move this equipment to prevent tipping.
- Locking the front casters after moving is the owner's and operator's responsibility. When casters are installed, the mass of this unit will allow it to move uncontrolled on an inclined surface. These units must be tethered/secured to comply with all applicable codes.
- 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.

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Section 1

General Information

Model Numbers

This manual covers the following ice machines:

| Self-Contained Air-Cooled | Self-Contained Water-Cooled |
|------------------------------|--------------------------------|
| USP0100A | N/A |

Warning

Do not move the ice machine unless all ice has been removed from the bin.

Important

Water quality greatly affects cube clarity, although highly filtered water will not create a 100% crack free cube. Cracks are caused by expansion of the ice during the freeze cycle and cannot be eliminated.

Dimensions

| Model | Height | Width | Depth |
|----------|----------|----------|----------|
| USP0100A | 31.50 in | 19.68 in | 22.83 in |
| | 800 cm | 500 cm | 580 mm |

Height listed is without legs installed - Add 6 inches to height for legs

Legs

Six inch legs must be installed or the ice machine must be sealed to the floor.

Ice Machine Weight

| Model | Lbs | Kg |
|----------|-----|----|
| USP0100A | 108 | 49 |

ARCTIC PURE PLUS WATER FILTER SYSTEM

Engineered specifically for Manitowoc ice machines, This water filter is an efficient, dependable, and affordable method of inhibiting scale formation, filtering sediment, and removing chlorine taste and odor.

WARRANTY

For warranty information visit:

www.manitowocice.com/Service/Warranty

- Warranty Coverage Information
- Warranty Registration
- Warranty Verification

Warranty coverage begins the day the ice machine is installed.

WARRANTY REGISTRATION

Completing the warranty registration process is a quick and easy way to protect your investment.

Scan the QR code with your smart device or enter the link in a web browser to complete your warranty registration.



WWW.MANITOWOCICE.COM/SERVICE/WARRANTY#WARRANTY-REGISTRATION

Registering your product insures warranty coverage and streamlines the process if any warranty work is required.

How To Read A Model Number

| Ice Machine Model | Ice Cube Size | Refrigerant | Ice Machine Series | Condenser Type | | Voltage |
|--------------------------|--------------------|------------------|--------------------|---------------------------------------|----------|-----------------------------|
| U Undercounter | S Square | P R290 | 0100 | A Self Contained Air-Cooled | | 161 115V/60Hz/1Ph |
| U | S | P | 0100 | A | - | 161 |

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.

- The location must be free of airborne and other contaminants.
- The air temperature must be at least 50°F (10°C), but must not exceed 100°F (38°C).
- The water temperature must be at least 50°F (10°C), but must not exceed 90°F (32°C).
- The location must not be near heat-generating equipment (ovens, dishwashers, etc.) or in direct sunlight and must be protected from weather.
- The location must not obstruct air flow through or around the ice machine. Refer to the clearance requirement chart.

These ice machines are intended for use in applications such as:

- Staff kitchen areas in shops, offices and other work environments.
- Clients in hotels, motels, farmhouses, bed and breakfast and other residential type environments.
- Catering and similar non-retail applications.

CLEARANCES

Warning

Do not obstruct ice machine vents or openings.

USP0100A

| | |
|---|----------------|
| Top | 2 in - (51 mm) |
| Sides | 2 in - (51 mm) |
| Back | 2 in - (51 mm) |
| 8" (203 mm) recommended at top for cleaning and maintenance | |

Warning

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.

Warning

To avoid instability the equipment must be installed in an area capable of supporting the weight of the ice machine and a full bin of ice. The ice machine must be level side to side and front to back.

INSTALL LEGS AND LEVEL

Caution

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

1. Screw the leveling legs onto the bottom of the ice machine.
2. Screw the foot of each leg in as far as possible.
3. Move the ice machine into its final position.
4. Use a level on top of the ice machine. Turn the base of each foot as necessary to level the ice machine.

Electrical Service

Warning

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

Caution

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

Warning

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

All electrical work, including wire routing and grounding, must conform to local, state and national electrical codes. The following precautions must be observed:

- The ice machine must be grounded.
- A separate fuse/circuit breaker must be provided for each ice machine.
- A qualified electrician must determine proper wire size dependent upon location, materials used and length of run (minimum circuit ampacity can be used to help select the wire size).
- The maximum allowable voltage variation is $\pm 10\%$ of the rated voltage at ice machine start-up (when the electrical load is highest).
- Check all green ground screws in the control box and verify they are tight before starting the ice machine.

Caution

Observe correct polarity of incoming line voltage. Incorrect polarity can lead to erratic ice machine operation. Operate equipment only on the type of electricity indicated on the specification plate.

TOTAL 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.

ELECTRICAL REQUIREMENTS

Refer to Ice Machine Model/Serial Plate for voltage/ amperage specifications.

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. Manitowoc Ice does not recommend the use of a GFCI/GFI circuit protection 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.

POWER SPECIFICATIONS

Maximum breaker size is 15 amps.

The wire size to the receptacle is dependent upon location, materials used, length of run, etc., so it must be determined by a qualified electrician. Local, state or national requirements must be followed.

Water Supply and Drain Requirements

WATER SUPPLY

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

Water inlet fitting - 3/8" FPT

⚠ Warning

Connect to a potable water supply only.

WATER INLET LINES

Follow these guidelines to install water inlet lines:

- The water temperature must be at least 50°F (10°C), but must not exceed 90°F (32°C).
- If you are installing a Manitowoc Arctic Pure® 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 check valves installed for other equipment are working. (Check valves on sink faucets, dishwashers, sprayer nozzles, etc.)
- If water pressure exceeds the maximum recommended pressure of 80 psi (552 kPa), obtain a water pressure regulator from your Manitowoc distributor.
- Insulate water inlet lines to prevent condensation.

⚠ Caution

Do not apply heat to water valve inlet fitting. This will damage plastic water inlet connection.

DRAIN CONNECTIONS

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

Drain fitting - 1/2" MPT

- 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.

Installation Check List

- Is the Ice Machine level?
- 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?
- Has the ice machine been installed where ambient temperatures will remain in the range of 50° - 100°F (10° - 38°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 proper cleaning/sanitizing procedures?
- Has the owner/operator registered for warranty coverage on the Manitowoc Ice Website?
- Have the ice machine and bin been sanitized?
- Has the ice machine been turned on at the power switch and the power switch LED is energized?
- Has the cube weight been verified/adjusted to 21 to 24 grams (.75 - .85 oz)?

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Section 3 Operation

Sequence of Operation

This ice machine is controlled by an electronic control module, while there are some mechanical switches, most functions and timers are controlled by the electronic control module. Refer to the “Troubleshooting Chart” on page 25 to diagnose the electronic control module.

The electronic control module retains the power switch position in memory whenever power is disconnected and reconnected at the wall socket.

| Power Switch Position When Power Was Disconnected | When Power Is Reconnected The Green LED |
|---|---|
| On | Flashes |
| Off | Remains Off |

Pre-Freeze

The following occurs whenever power is applied to the ice machine by turning the power button on, or disconnecting/reconnecting power:

- A. Pressing the power button energizes the water inlet valve to fill the water sump and the green LED will flash on/off for four minutes. The harvest valve is energized any time the unit is plugged in and the water pump is not running. The condenser fan motor has the potential to run any time the ice machine is plugged in.
- B. After 4 minutes the compressor starts, the water inlet valve remains energized and the LED stops flashing and remains solid green.
- C. At the end of the cycle the water inlet and harvest valves de-energize.

FREEZE CYCLE

The water pump energizes and the compressor remains energized, starting the freezing cycle. The pump sprays water into the inverted cups. The water freezes layer by layer, until an ice cube forms in each cup.

At the same time the compressor starts, the condenser fan motor is supplied with power throughout the freeze and harvest cycles. The freeze cycle continues until the evaporator thermostat reaches the adjusted set point and an internal timer is satisfied.

HARVEST CYCLE

The compressor continues to operate and the water pump is de-energized. The harvest valve energizes, allowing hot gas from the compressor to enter and warm the evaporator. The water valve is also energized to aiding with harvest and refill the water sump with fresh water for a new freeze cycle.

The ice falls from the cups and is directed into the bin by the ice cube slide. The harvest cycle continues until the evaporator thermostat set point is reached and an internal timer is satisfied.

The harvest valve and water valve de-energize. If ice cubes are not contacting the bin thermostat, a new freeze cycle is initiated as the water pump energizes and sprays water into the cups.

AUTOMATIC SHUT-OFF

When the storage bin is full, the ice will come in contact with the bin thermostat which is located inside the bin. The ice machine stops when the bin thermostat opens and the LED remains solid green.

The ice machine remains off until enough ice has been removed from the storage bin to allow the bin thermostat to warm and close, starting a harvest cycle, then a freeze cycle.

Important

The coil on the harvest valve is energized whenever the ice machine is shut off on full bin. At times it is possible to hear a hum or slight buzz from the coil which is normal operation.

Power, Wash, Defrost Switch

The ice machine switch is used to select and control the ice machine cycles.

▲Warning

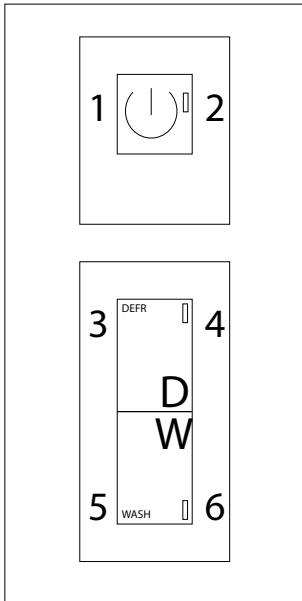
Risk of electrical shock or burns. The ice machine front panel requires removal to access the defrost and wash buttons. Do not touch electrical wiring or insert hands into the area the front panel covered.

ON/OFF Push button (1) Used to turn on and turn off the ice machine - Green LED (2)

DEFR Push button (3) Used to start the defrost cycle - Yellow LED (4)

WASH Push button (5) Push to start and/or finish the washing cycle - Blue LED (6)

Refer to “Service Faults” on page 26 for diagnostics.



1. On/Off Push Button
2. Green Power LED
3. Defrost Push Button
4. Yellow Defrost LED
5. Wash Push Button
6. Blue Wash LED

Ice Cube Thickness Check

The ice cube thickness is factory-set to maintain the ice cube thickness at the proper size and weight.

NOTE: A dimple in the end of each cube is normal. Adjusting to remove the dimple will result in longer freeze cycles and lower production.

1. Allow the ice machine to operate for three complete cycles. The cubes should have a small dimple in the center.
2. Cycle times vary, according to surrounding air and water inlet temperatures.
3. If cubes are not full (large dimple), turn evaporator thermostat one increment towards the right to increase cube size. Allow ice machine to complete three cycles. Check cube.
4. If cubes are too full, (no dimple), turn evaporator thermostat one increment towards the left to decrease cube size. Allow ice machine to operate three complete cycles.

Ice Cube Weight Adjustment

“The factory setting for the evaporator thermostat is 3. The cube weight can be increased or decreased from the factory setting by adjusting the evaporator thermostat. Turn the thermostat to the left to decrease the cube weight or to the right to increase the cube weight.

NOTE: To access the bin thermostat or adjust cube weight, remove the front ice machine panel.

Important

Individual cube weight must be between 21 to 24 grams (.75 - .85 oz) to maximize production and energy efficiency.

Bin Thermostat Adjustment

The bin thermostat stops the ice machine when the bin is full. Turn the thermostat to the left to decrease the level of ice in bin or to the right to increase the level of ice in bin. If the ice machine stops before the bin is full or runs after the bin is full, ambient temperatures are probably high or low and the bin thermostat can be adjusted.

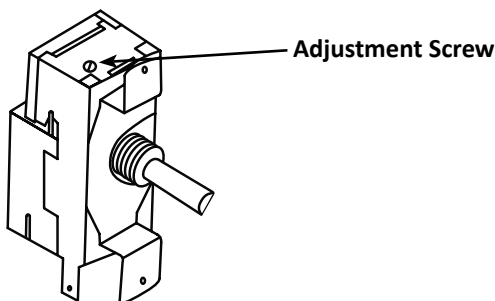
Thermostat Adjustment For Altitude

Installation at altitude will require an adjustment to allow the ice machine to operate according to the thermostat setting chart.

NOTE: The screw located between the electrical terminals sets the cut-in/cut-out differential and must never be adjusted.

ALTITUDE ADJUSTMENT CHART

| Altitude Feet Meters | Bin Thermostat |
|----------------------------|--------------------------------|
| | Turn Screw Clockwise To Adjust |
| 2000 610 | 1/4 Turn |
| 4000 1219 | 5/8 Turn |
| 6000 1829 | 1 Turn |
| 8000 2438 | 1 3/8 Turn |



Removal from Service/Long Term Storage/ Winterization

GENERAL

Special precautions must be taken if the ice machine is to be removed from service for an extended period of time or exposed to ambient temperatures of 32°F (0°C) or below.

- Step 1** Perform a cleaning and sanitizing procedure to prevent mildew growth.
- Step 2** Disconnect the electric power cord.
- Step 3** Turn off the water supply.
- Step 4** Drain water from sump by opening/removing shutters and ice cube slide and then removing overflow pipe located in the right hand rear corner.
- Step 5** Disconnect and drain the incoming ice-making water line at the rear of the ice machine.
- Step 6** Disconnect vinyl hose from water pump and allow to drain.
- Step 7** Make sure water is not trapped in any of the water or drain lines. Compressed air can be used to blow out the lines.
- Step 8** Block the door partially open to provide air exchange and prevent mildew growth.

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Section 4 Maintenance

Detailed Cleaning and Sanitizing

GENERAL

You are responsible for maintaining the ice machine in accordance with the instructions in this manual. Maintenance procedures are not covered by the warranty.

Descale and sanitize the ice machine every 12 months for efficient operation. If the ice machine requires more frequent cleaning and sanitizing, consult a qualified service company to test the water quality and recommend appropriate water treatment. The ice machine must be taken apart for cleaning and sanitizing.

⚠ Caution

Damage to the ice machine evaporator caused by incorrect chemical usage is not covered by the warranty.

⚠ Warning

Wear rubber gloves and safety goggles (and/or face shield) when handling vinegar and bleach.

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.

Products containing abrasives may damage/scratch the panels. Never use steel wool or abrasive pads for cleaning.

DETAILED DESCALING/SANITIZING PROCEDURE

This procedure must be performed every twelve months.

- The ice machine and bin must be disassembled descaled and sanitized.

Step 1 Open the bin door to access the evaporator compartment. Ice must not be on the evaporator during cleaning and sanitizing. Follow one of the methods below:

- Press the power switch at the end of a harvest cycle after ice falls from the evaporator(s).
- Press the defrost switch to initiate a harvest. (See Step 3 for front panel removal).
- Press the power switch and allow the ice to melt.

⚠ Caution

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

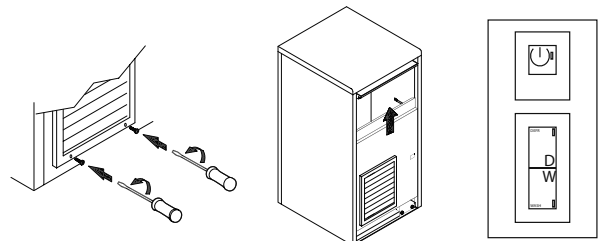
Step 2 Remove all ice from the bin and remove top cover of ice machine.

⚠ Warning

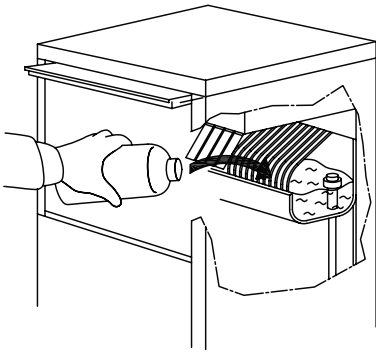
Risk of electrical shock or burns. Do not touch electrical wiring or insert hands into the area the front panel covered while performing the following step.

Step 3 Remove front panel to access Wash/Defrost button:

- Using a small Philips screwdriver, loosen the 2 lower screws behind the grill of the front panel, then lift up on the front panel and remove.
- Press the Power button and then press the Wash button.
- While the ice machine is going through the Harvest cycle, replace the front panel without tightening the screws.



Step 4 After the harvest cycle is complete (the compressor will stop and the pump will start spraying water), lift some of the shutters and pour in 1 quart (4 cups) of white vinegar.



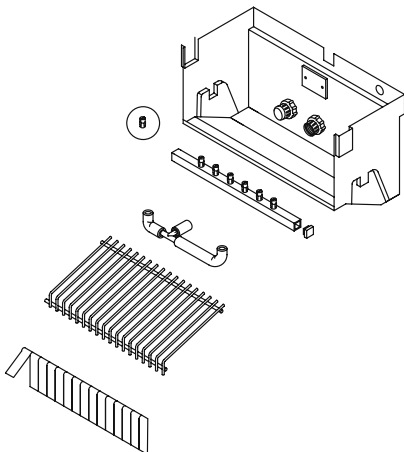
Step 5 When the 90 minute wash cycle is complete (compressor energizes and starts a freeze cycle), press the Power button to stop the ice machine.

Step 6 Disconnect electrical power and water.

Step 7 Remove parts for cleaning.

- A. Remove the shutter assembly
- B. Remove ice cube slide
- C. Remove overflow tube
- D. Remove drain water sump
- E. Remove spray bar and vinyl tubing
- F. Remove pump inlet filter
- G. Remove the top panel
- H. Remove evaporator shield located on top of the evaporator

NOTE: Disassemble the tubing, spray bar ends and nozzles for easier cleaning.



Step 8 Transfer the removed parts to a sink and clean with a mild dish washing soap and water, then rinse thoroughly with clean water. Mix a 25% solution of white vinegar 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 remove all lime scale from the removed parts, evaporator, bin and bin door.

| Solution Type | Water | White Vinegar |
|---------------|--------------|------------------|
| Delimer | 1 gal. (4 L) | 1 quart (4 cups) |

Step 9 Use 1/2 of the vinegar/water mixture to clean all components. Use a soft-bristle nylon brush, sponge or cloth (NOT a wire brush) to carefully clean the parts. Rinse all components with clean water.

Step 10 While components are soaking, use 1/2 of the vinegar/water solution to clean all foodzone surfaces of the ice machine and bin. Use a nylon brush or cloth to thoroughly clean the following ice machine areas:

- Top of the evaporator
- Water trough interior/exterior
- Evaporator and plastic parts - including top, bottom, and sides
- Bin

Important

Take care to avoid bending evaporator coils or dislodging/disturbing the water inlet or thermostat. The drain holes in the evaporator base must be open to allow water to drain freely.

Caution

Do not use metal objects to clear evaporator drain holes damage will result.

Step 11 Rinse all areas thoroughly with clean water.

Step 12 Mix a solution of bleach and lukewarm water.

| Solution Type | Water | Mixed With |
|---------------|--------|-------------|
| Sanitizer | 2 gal. | 1 oz Bleach |

Step 13 Use 1/2 of the sanitizer/water solution to sanitize all removed components. Use a sponge or cloth to liberally apply the solution to all surfaces of the removed parts or soak the removed parts in the sanitizer/water solution. Rinse all areas thoroughly with clean water.

Step 14 Sanitize all foodzone surfaces of the ice machine and bin. Use a sponge or cloth to liberally apply the solution to all surfaces. When sanitizing, pay particular attention to the following areas:

- Top of the evaporator
- Water trough interior/exterior
- Evaporator and plastic parts - including top, bottom, and sides
- Bin

Rinse all areas thoroughly with clean water.

Step 15 Replace all removed components.

NOTE: Spray bar and nozzles.

- If the nozzles were removed from the spray bar, take care to prevent cross threading when reassembling.
- Verify the spray bar is correctly positioned and the nozzles are aligned to the evaporator cups.

Step 16 Reapply power and water to the ice machine.

⚠ Warning

Risk of electrical shock or burns. Do not touch electrical wiring or insert hands into the area the front panel covers while performing the following step.

Step 17 Remove front panel to access Wash button:

- Press the Power button and then press the Wash button.
- While the ice machine is going through the Harvest cycle, replace the front panel and tighten the screws using a small Philips screwdriver.

Step 18 After the harvest cycle is complete (the compressor will stop and the pump will start spraying water), lift some of the shutters and pour in 1/2 oz (.5 oz) of bleach.

Step 19 When the 90 minute sanitize cycle is complete the compressor energizes and starts a freeze cycle.


Step 20 Discard the first two batches of ice to remove any flavor transmission from the cleaning/sanitizing process.

Remedial Cleaning Procedure

This procedure must be performed every six months between the yearly Detailed Descaling/Sanitizing Procedure.


Step 1 Open the bin door to access the evaporator compartment. Ice must not be on the evaporator during cleaning and sanitizing. Follow one of the methods below:

- Press the power switch at the end of a harvest cycle after ice falls from the evaporator(s).
- Press the power switch and allow the ice to melt.

 **Caution**

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

Step 2 Remove all ice from the bin and remove top cover of ice machine.

 **Warning**

Risk of electrical shock or burns. Do not touch electrical wiring or insert hands into the area the front panel covered while performing the following step.

Step 3 Disconnect electrical power and water.

Step 4 Remove parts for cleaning.

- A. Remove the shutter assembly
- B. Remove ice cube slide
- C. Remove overflow tube
- D. Remove drain water sump
- E. Remove spray bar and vinyl tubing
- F. Remove pump inlet filter
- G. Remove the top panel
- H. Remove evaporator shield located on top of the evaporator

NOTE: Disassemble the tubing, spray bar ends and nozzles for easier cleaning.

Step 5 Transfer the removed parts to a sink and clean with a mild dish washing soap and water:

Step 6 Rinse all areas thoroughly with clean water.

Step 7 Mix a 25% solution of white vinegar 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 remove all lime scale from the removed parts, evaporator, bin and bin door.

| Solution Type | Water | White Vinegar |
|---------------|--------------|------------------|
| Delimer | 1 gal. (4 L) | 1 quart (4 cups) |


Step 8 Use 1/2 of the vinegar/water mixture to clean all components. Use a soft-bristle nylon brush, sponge or cloth (NOT a wire brush) to carefully clean the parts. Rinse all components with clean water.

Step 9 While components are soaking, use 1/2 of the vinegar/water solution to clean all foodzone surfaces of the ice machine and bin. Use a nylon brush or cloth to thoroughly clean the following ice machine areas:

- Top of the evaporator
- Water trough interior/exterior
- Evaporator and plastic parts - including top, bottom, and sides
- Bin

Important

Take care to avoid bending evaporator coils or dislodging/disturbing the water inlet or thermostat. The drain holes in the evaporator base must be open to allow water to drain freely.

 **Caution**

Do not use metal objects to clear evaporator drain holes damage will result.

Step 10 Rinse all areas thoroughly with clean water.

Step 11 Mix a solution of bleach and lukewarm water.

| Solution Type | Water | Mixed With |
|---------------|--------|-------------|
| Sanitizer | 2 gal. | 1 oz Bleach |

Step 12 Use 1/2 of the sanitizer/water solution to sanitize all removed components. Use a sponge or cloth to liberally apply the solution to all surfaces of the removed parts or soak the removed parts in the sanitizer/water solution. Rinse all areas thoroughly with clean water.

Step 13 Sanitize all foodzone surfaces of the ice machine and bin. Use a sponge or cloth to liberally apply the solution to all surfaces. When sanitizing, pay particular attention to the following areas:

- Top of the evaporator
- Water trough interior/exterior
- Evaporator and plastic parts - including top, bottom, and sides
- Bin

Step 14 Rinse all areas thoroughly with clean water.

Step 15 Replace all removed components.

NOTE: Spray bar and nozzles.

- If the nozzles were removed from the spray bar, take care to prevent cross threading when reassembling.
- Verify the spray bar is correctly positioned and the nozzles are aligned to the evaporator cups.

Step 16 Reapply power and water to the ice machine and press the power button to start ice making.

Step 17 Discard the first two batches of ice to remove any flavor transmission from the cleaning/sanitizing process.

Cleaning the Condenser

GENERAL

Warning

Disconnect electric power to the ice machine by disconnecting the power cord 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.

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Section 5 Troubleshooting

Troubleshooting Chart

| Problem | Cause | Correction |
|---|---|--|
| Ice machine does not operate | No electrical power to the ice machine | Replace the fuse/reset the circuit breaker/turn on the main switch/plug in the power cord |
| | High pressure cutout tripping | Clean the condenser |
| | Ice machine is not turned on | Verify the power button is pushed and the green LED is energized. |
| | Ambient air temperature is too high. | The maximum air temperature is 100°F (38°C). Verify clearances are maintained and the condenser are clean. |
| Ice machine does not release ice or is slow to harvest | Ice machine is dirty | Clean and sanitize the ice machine |
| | Low air temperature around ice machine | Air temperature must be at least 50°F (10°C) |
| | Poor incoming water quality | Contact a qualified service company to test the quality of the incoming water and make appropriate filter recommendations |
| | Water softener is working improperly (if used) | Repair the softener |
| | Cubes too large and ice is forming on evaporator plastic | Verify cube weight is between 21 to 24 grams (.75 - .85 oz) |
| | Incoming water temperature is too low | Water temperature must be 50°F (10°C) or higher |
| Ice machine produces shallow or incomplete cubes or ice is cloudy | Spray bar or nozzles incorrectly aligned | Align nozzles and spray bar, Verify spray bar is correctly positioned and secure |
| | Water filtration is poor | Replace water filter |
| | Hot incoming water | Water must not exceed 90°F (32°C) |
| | Water trough level is low | Incorrect incoming water pressure Increase water pressure, replace filter, etc. Water pressure must be 14 - 80 psi (95 kPa - 550 kPa) |
| | Ice machine is dirty, mineral buildup in nozzles affecting spray pattern | Clean the ice machine refer to “Detailed Cleaning and Sanitizing” on page 19 |
| | Evaporator shutters do not close completely allowing water to escape into bin | Clean the ice machine and shutters to remove mineral buildup, verify free movement |
| Cubes are not completely clear and have cracks in the cube | Expansion during the freeze cycle results in cracks in the cube | This is normal operation |
| Low Ice Production | High ambient air temperature Maximum air temperature is 100°F (32°C) | Verify all clearance requirements are maintained, move ice machine to area with lower temperatures or more clearance |
| | Loss of water or ice machine dirty | Refer to shallow or incomplete cubes for corrections |
| | Air condenser dirty | Vacuum or blow out air condenser refer to “Cleaning the Condenser” on page 23 |
| Ice will not slide into bin | Ice slide is installed upside down | Reinstall ice slide, refer to section 4 for details |

Warranty Information

For warranty information visit:

www.manitowocice.com/Service/Warranty

- Warranty Verification
- Warranty Registration
- View and download a copy of your warranty

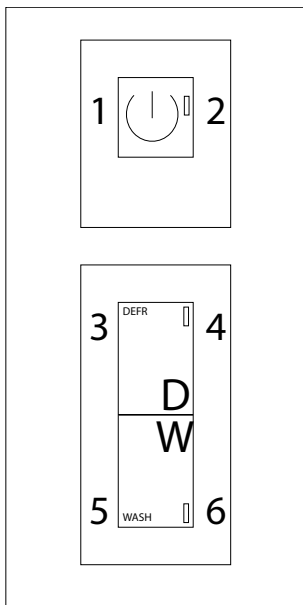
Service Faults

In addition to the standard safety controls, such as the high pressure cutout, your Manitowoc ice machine features built-in service faults which 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. Press the power button, the Green LED will go out.
2. Press the power button, the Green LED will illuminate and the ice machine will perform a start-up sequence (refilling of water sump, harvest cycle, then freeze cycle).
3. Allow the ice machine to run to determine if the condition repeats. If any of the below conditions repeat, call for service.
 - A. The ice machine remains in the freeze cycle for more than 90 minutes (Ice Maker flashing the yellow light, one flash every 4 seconds).
 - B. The ice machine remains in the harvest cycle for more than 30 minutes (Ice Maker flashing the yellow light, two flashes every 4 seconds).
 - C. The ice machine shows a Green solid LED but the bin is empty.

NOTE: Removal of the lower front panel is required to view the yellow LED.



1. On/Off Push Button
2. Green Power LED
3. Defrost Push Button
4. Yellow Defrost LED
5. Wash Push Button
6. Blue Wash LED



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