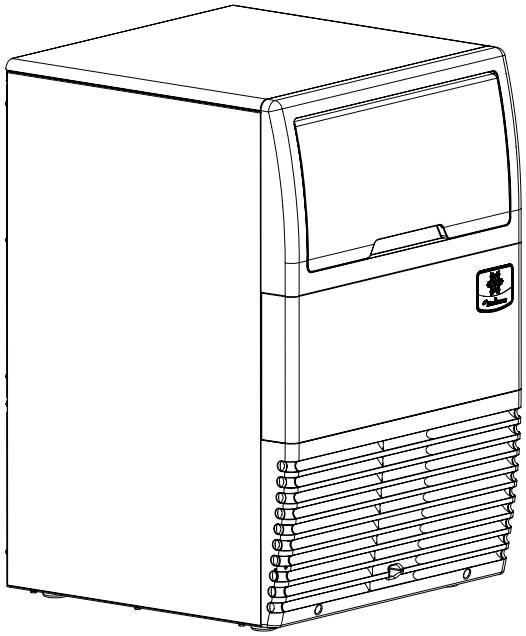
UnderCounter Ice Machines
UG Series

Installation, Operation and Maintenance Manual



⚠ **Caution**

Read this instruction before operating this equipment.

Part Number: 040006977 09/22

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.

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.
- 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.
- Connect to a potable water supply only.
- Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.
- When positioning the appliance, ensure the supply cord is not trapped or damaged.

⚠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.
- Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.
- Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.

⚠ DANGER

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

- Refer to nameplate-Ice machine models may contains 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 an a temperature higher than 470℃ is needed for a combustion to occur. Refer to nameplate to identify the type of refrigerant in your equipment. Only trained and qualified personnel aware of the dangers are allowed to work on the equipment.
- To minimize the risk of ignition due to improper installion, 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 manufactures authorized replacement part network.
- 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 peocedures must be followed when working on this equipment.
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.
- This equipment contains high voltage electricity and refrigerant charge. Shorting electrical wires to refrigeration tubing may result in an explosion. All electical power must be disconnected from the system before servicing the system. Refigerant leaks, can result in serous injury or death from explosing, fire, or contant with refrigerant or lubricant mists.

⚠ 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 (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.
- 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.

Table of Contents

Safety Notices

Safety Notices 3
Definitions 3

Section 1
General Information

General 3
Model Numbers 3
How To Read A Model Number 3
Model/Serial Number Location 4
Owner Warranty Registration Card 5
General 5
Commercial Warranty Coverage 5
General 5
Parts 5
Labor 5
Exclusions 5
Authorized Warranty Service 5
Service Calls 5

Section 2
Installation

General 7
Ice Machine Dimensions 7
Location of Ice Machine 7
Leveling the Ice Machine 7
Electrical Service 8
Voltage 8
Fuse/Circuit Breaker 8
Total Circuit Ampacity 8
Water Service/Drains 9
Water supply 9
Water inlet lines 9
Drain Connections 9
Water Supply and Drain Line Sizing/Connections 9
Before Starting the Ice Machine 10

Section 3
Operation

Component Identification 11
Componet Removal 12
Top Cover 12
Bin Door 12
Water Curtain 13
Ice Chute 13
Spary Bar 14
Sump Drain Overflow Tube 14
Ice Making Sequence of Operation 15
Initian Start-up 15
Operational Checks 16

General....16
Ice Cube Thickness Check....16
Cube Shape....16

Section 4
Maintenance

General....17
De-scaling and Sanitizing....18
General....18
DETAILED DE-SCALING/SANITIZING PROCEDURE....18
REMEDIAL DE-SCALING PROCEDURE....18
Detailed De-scaling and Sanitizing procedure....18
De-scaling Procedure....18
Sanitizinging Procedure....19
Cleaning the Condenser....19
Air-Cooled Condenser....19
Exterior Cleaning....20
Removal from Service/Winterization....20
General....20
Air-Cooled Ice Machines....20

Section 5
Troubleshooting

Checklist....21

Section 1
General Information

General

It is recommended that this ice machine be inspected and installed by a qualified service technician.

⚠Warning

If you do not understand the procedures or the safety precautions that must be followed, call your local service representative to perform the necessary installation procedures for you.

Follow all recommendations and instructions for proper installation and safe operation of this ice machine.

⚠Warning

PERSONAL INJURY POTENTIAL

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

Model Numbers

This manual covers the following models:

UGE0020A	**UGP0020A**
UGE0030A	**UGP0030A**
UGF0040A	**UGP0040A**
UGF0050A	**UGP0050A**
UGF0065A	**N/A**
UGF0080A	**UGP0080A**

How To Read A Model Number

U G P 0040 A — 251 F D

Ice Machine Model

Refrigerant

P - R290
F - R404A
E - R134a

Nominal Production

Condenser Type

A - Self-Contained Air-Cooled

Voltage

161 - 115/60/1
261 - 208-230/60/1
251 - 230/50/1

Market Specific

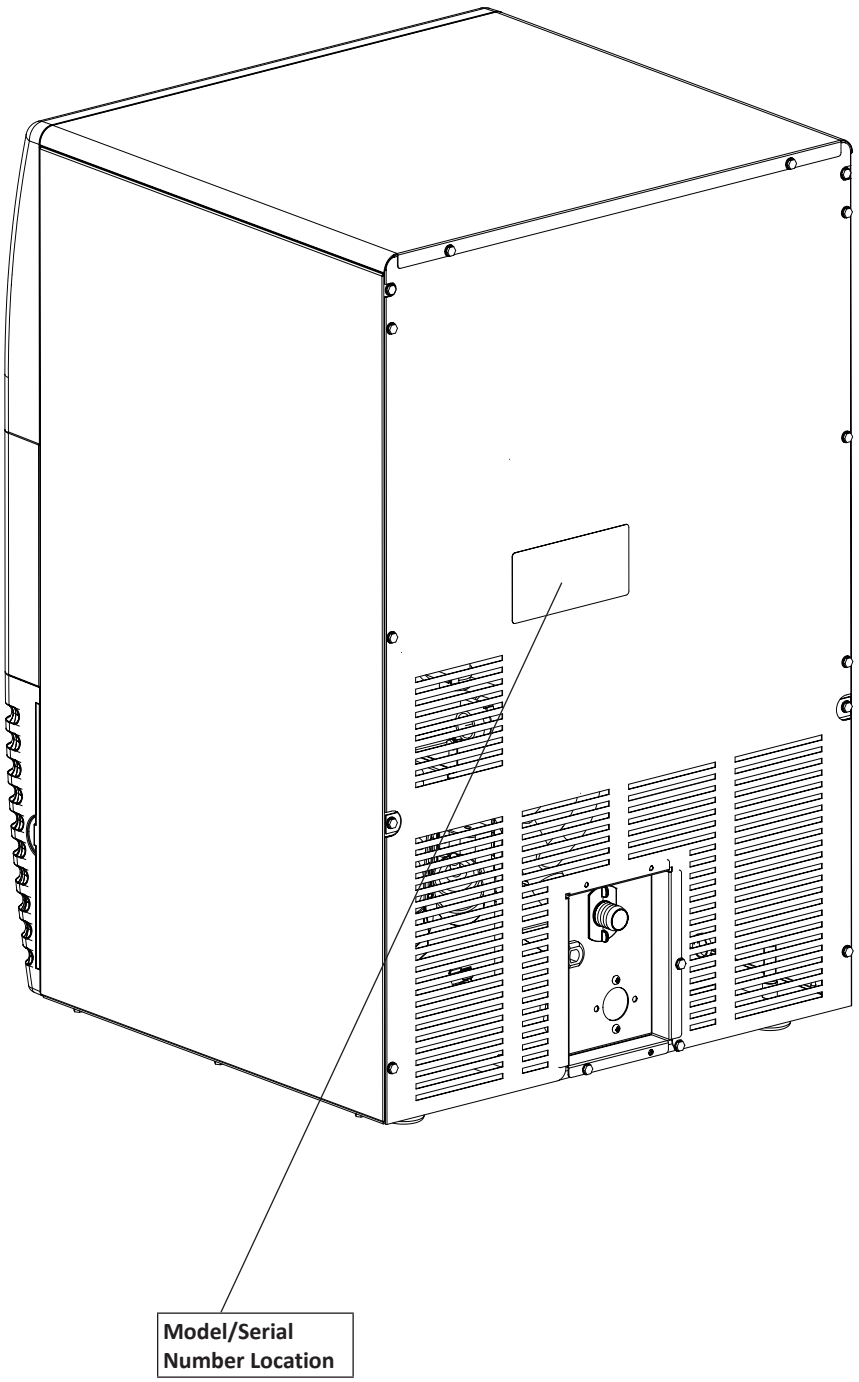
Blank:Non-market specific
S: Saudi Arabic
C:China
D: Germany
E: WARAS
N: Brazil

F=Schuko
G=Blade
Z=No Plug/Bare Lead
I=Oblique Flat Blades with Ground
B=115V Grounded Power Cord

Model/Serial Number Location

Record the model and serial number of your ice machine and bin or dispenser in the space provided below. These numbers are required when requesting information from your local Manitowoc distributor, or Manitowoc China.

The model and serial number are listed on the OWNER WARRANTY REGISTRATION CARD. They are also listed on the MODEL/SERIAL NUMBER DECAL affixed to the ice machine, remote condenser and storage bin.



Owner Warranty Registration Card

GENERAL

The packet containing this manual also includes warranty information. Warranty coverage begins the day your new ice machine is installed.

Important

Complete and mail the OWNER WARRANTY REGISTRATION CARD as soon as possible to validate the installation date.

If you do not return your OWNER WARRANTY REGISTRATION CARD, Manitowoc will use the date of sale to the Manitowoc Distributor as the first day of warranty coverage for your new ice machine.

Commercial Warranty Coverage

GENERAL

The following Warranty outline is provided for your convenience.
Contact your local Manitowoc representative or Manitowoc China. if you need further warranty information.

PARTS

Manitowoc warrants the ice machine against defects in materials and workmanship, under normal use and service for two (2) years from the date of original installation.

LABOR

Labor required to repair or replace defective components is covered for one (1) year from the date of original installation.

Exclusions

The following items are not included in the ice machine's warranty coverage:

1. Normal maintenance, adjustments and cleaning as outlined in this manual.
2. Repairs due to unauthorized modifications to the ice machine or use of non-standard parts without prior written approval from Manitowoc China.
3. Damage caused by improper installation of the ice machine, electrical supply, water supply or drainage, or damage caused by floods, storms, or other acts of God.
4. Premium labor rates due to holidays, overtime, etc.; travel time; flat rate service call charges; mileage and miscellaneous tools and material charges not listed on the payment schedule. Additional labor charges resulting from the inaccessibility of equipment are also excluded.
5. Parts or assemblies subjected to misuse, abuse, neglect or accidents.
6. Damage or problems caused by installation, cleaning and/or maintenance procedures inconsistent with the technical instructions provided in this manual.

Authorized Warranty Service

To comply with the provisions of the warranty, a refrigeration service company, qualified and authorized by your Manitowoc distributor, or a Contracted Service Representative must perform the warranty repair.
If the dealer you purchased the ice machine from is not authorized to perform warranty service, contact your Manitowoc distributor or Manitowoc China. for the name of the nearest authorized service representative.

Service Calls

Normal maintenance, adjustments and cleaning as outlined in this manual are not covered by the warranty. If you have followed the procedures listed in this manual, and the ice machine still does not perform properly, call your authorized service company.

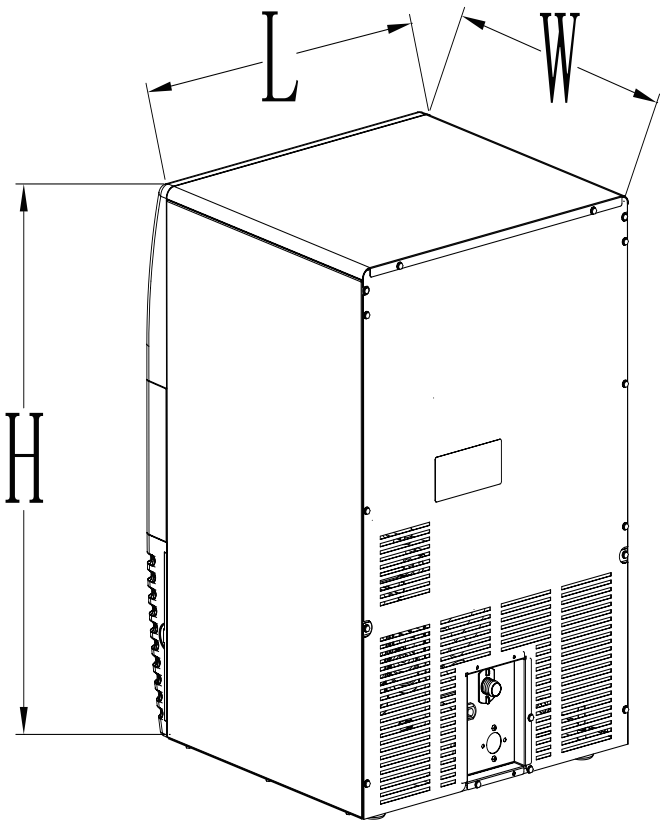
THIS PAGE INTENTIONALLY LEFT BLANK

Section 2
Installation

General

These instructions are provided to assist the qualified installer.

Ice Machine Dimensions



Model		L	W	H
UG0020	mm	450	475	650
UG0030	mm	450	475	650
UG0040	mm	550	550	800
UG0050	mm	550	550	800
UG0065	mm	700	600	902
UG0080	mm	700	600	902

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.

1. The location must be indoors.
2. The location must be free of airborne and other contaminants.
3. The air temperature must be at least 10°C (50°F), but must not exceed 43°C (110°F).
4. The location must not be near heat-generating equipment or in direct sunlight.
5. The location must be capable of supporting the weight of the ice machine and a full bin of ice.
6. The location must allow enough clearance for water, drain and electrical connections in the rear of the ice machine.
7. The location must not obstruct airflow through or around the ice machine (condenser airflow is in and out the front). Refer to the chart below for clearance recommendations:

	Self-Contained Air-Cooled
Top/Sides	8”(203mm)*
Back	5”(127mm)*

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.

⚠Caution

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

Leveling the Ice Machine

Levelers are included with all ice machine. Legs are an available option.

1. Screw the legs or levelers into the bottom of the ice machine.
2. Screw the foot of each leg or leveler in as far as possible. Move the ice machine into its final position.
3. Level the ice machine 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. The ice machine must be grounded in accordance with national and local electrical codes.

VOLTAGE

The maximum allowable voltage variation is ±6% of the rated voltage on the ice machine model/serial number plate at start-up (when the electrical load is highest).

All ice machines are factory pre-wired with a 2 meter (6 ft) power cord, no plug is supplied.

FUSE/CIRCUIT BREAKER

A separate fuse/circuit breaker must be provided for each ice machine. An electrical disconnect switch must be provided if the ice machine is hard wired (wired without a plug).

TOTAL CIRCUIT AMPACITY

The total circuit ampacity is used to help select the wire size of the electrical supply.

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

⚠Warning

RISK OF ELECTRICAL SHOCK

FOR HARD WIRED(WIRED WITHOUT A PLUG) MACHINE, IT MUST BE PROPERLY GROUNDED AND CONNECTED TO THE FIELD WIRING TERMINAL IN ACCORDANCE WITH ALL APPLICABLE NATIONAL AND LOCAL ELECTRICAL CODES BY A QUALIFIED ELECTRICIAN. BEFORE CONNECTING WIRES, DISCONNECT POWER AT THE ELECTRICAL DISCONNECT AND LOCK OUT TO PREVENT ACCIDENTALLY ENERGIZING. CONNECT ALL ELECTRICAL WIRING BEFORE USE - DO NOT ENERGIZE ICE MACHINE UNTIL INSTALLATION IS COMPLETE.

1. Connect –the three supply lead wires (Blue, Brown, and Yellow/Green) to the field wiring terminal, “L”, “N”, and “G”, the Yellow/Green wire must connect to the “G”(ground).
2. After connecting the wiring to the terminal strip, the supply lead must be secured to the cabinet with a strain relief near the terminal strip.
3. Verify wiring is contained in the electrical wiring box

Ice Machine	Voltage/Phase/Cycle	Air-Cooled	
		Maximum Fuse/Circuit Breaker	Total Amps
UG0020	220/1/50	10	2.3
	220/1/60	10	2.3
UG0030	220/1/50	15	2.8
	220/1/60	15	2.8
	115/1/60	15	5.5
UG0040	220/1/50	15	3.0
	220/1/60	15	3.0
UG0050	220/1/50	15	4.0
	220/1/60	15	4.0
	115/1/60	15	6.8
UG0065	220/1/50	15	4.5
	220/1/60	15	4.5
UG0080	220/1/50	15	5.5
	220/1/60	15	5.5

Water Service/Drains

WATER SUPPLY

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

Important

If you are installing a water filter system, make sure that you use a separate line for water-cooled condenser. Filter life will be greatly reduced if filtered water is used for water-cooled condenser.

WATER INLET LINES

Follow these guidelines to install water inlet lines:

1. 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.)
2. Water pressure to the machine should be between 1.4 to 5.5 bar (20 to 80 psi).
3. If water pressure exceeds the maximum 5 bar recommended pressure, obtain a water pressure regulator from your Manitowoc distributor. Adjust pressure to 2.5 bar (37 psi).
4. Install a water shut-off valve.
5. Connect to a potable water supply only.

DRAIN CONNECTIONS

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

1. Drain lines must have a 3.8 cm (1.5 inch) drop of run for each meter (3 feet), and must not create traps.
2. The floor drain must be large enough to accommodate drainage from all drains.
3. Run separate bin and water-cooled condenser drain lines. Insulate them to prevent condensation by temperature.

WATER SUPPLY AND DRAIN LINE SIZING/CONNECTIONS

	Water Temperature	Water Pressure	Ice Machine Fitting	Tubing Size Up to Ice Machine Fitting
*Ice Making Water Inlet	50°F (10°C) Min.[1] 90°F (32.2°C) Max.[2]	20 psi (137.9 kPa) Min.[1] 80 psi (551.5 kPa) Max.[2]	3/4" male pipe thread	1/2" (15 mm) minimum inside diameter
**Drain Connection Outlet	—	—	7/8" Fitting Barbed	3/4" (18 mm) minimum inside diameter

[1] Min. = Minimum

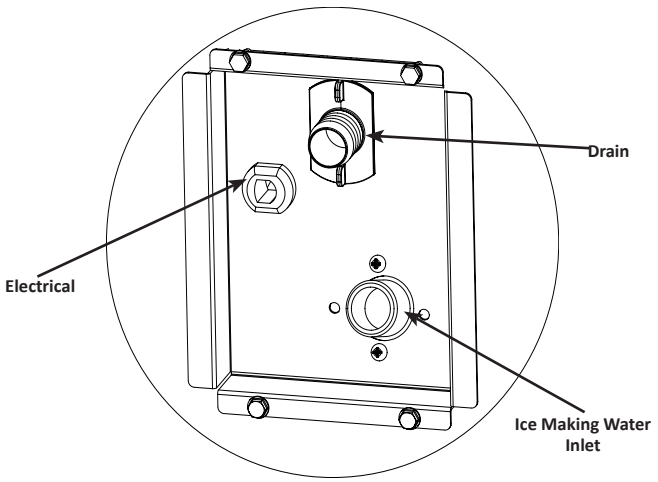
[2] Max. = Maximum

* Water Inlet Hose Supplied With Machine.3/4” Female Pipe Thread/ 2 meters long.

** Drain Hose Supplied With Machine.7/8” (22.2mm) Hose/ 2 Meters Long.

INSTALLATION NOTE (SWITZERLAND)

The connection to the drinking water network must be made with a certified backflow preventer type EA (EN13959) and with a certified connection hose (EN13618 or EN61770) on site.



Typical Water Supply and Drain Line Sizing and Connections

Installation Checklist

- ☐ 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?
- ☐ Are all components installed?
- ☐ Has the ice machine been installed where ambient temperatures will remain in the range of 50° - 110°F (10° - 43°C)?
- ☐ Has the ice machine been installed where the incoming water temperature will remain in the range of 50° - 90°F (10° - 32°C)?
- ☐ 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 Manitowoc De-scaler and Sanitizer?
- ☐ Has the owner/operator completed the warranty registration card?
- ☐ Has the ice machine and bin been sanitized?
- ☐ Has this manual been given to the owner/operator?
- ☐ Is the ice-off-wash switch set to the ice position?

Before Starting the Ice Machine

All Manitowoc ice machines are factory-operated and adjusted before shipment. Normally, new installations do not require any adjustment.

To ensure proper operation, follow the Operational Checks. Starting the ice machine and completing the Operational Checks are the responsibilities of the owner/operator.

Adjustments and maintenance procedures outlined in this manual are not covered by the warranty.

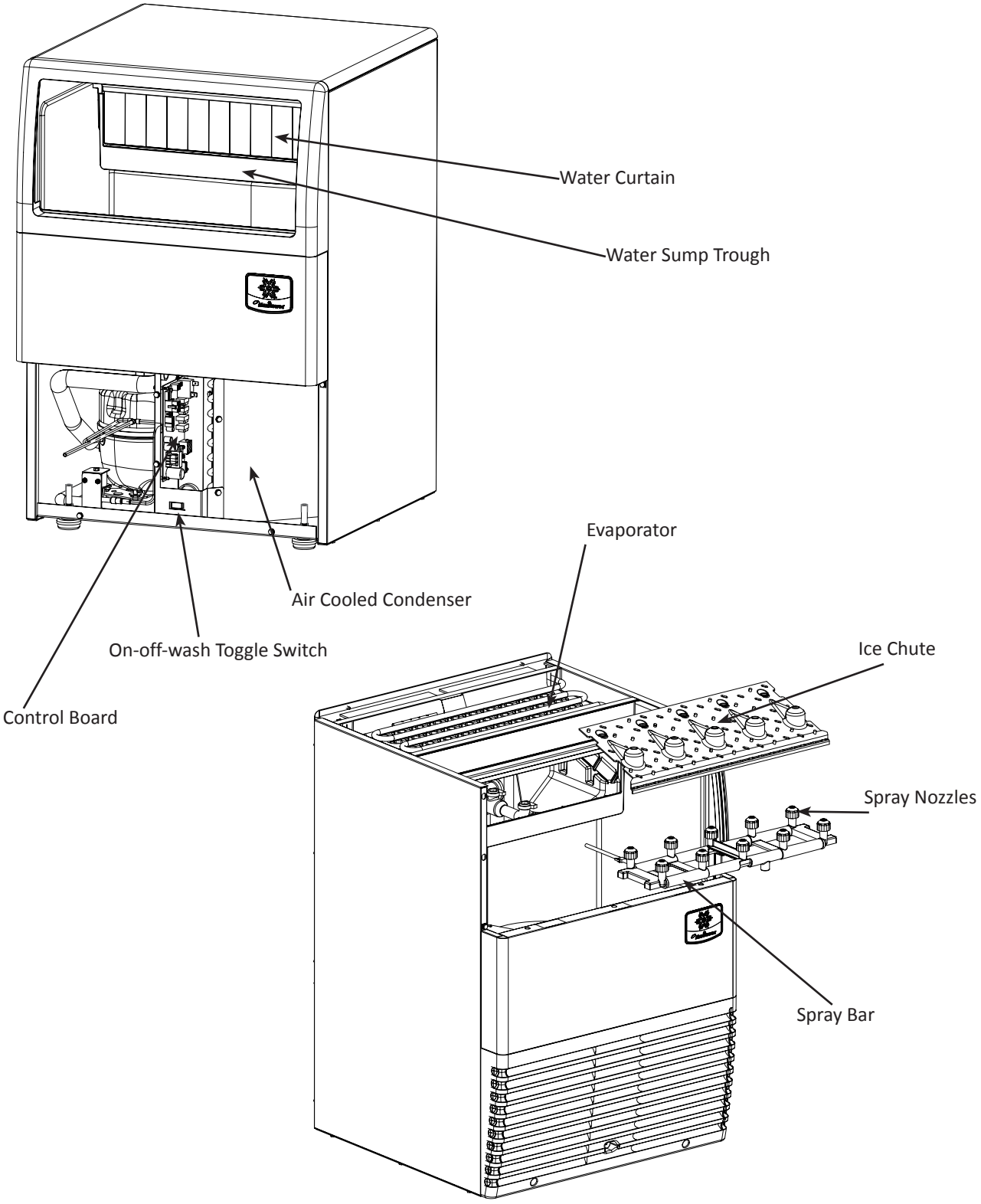
⚠Warning

PERSONAL INJURY POTENTIAL

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

Section 3
Operation

Component Identification



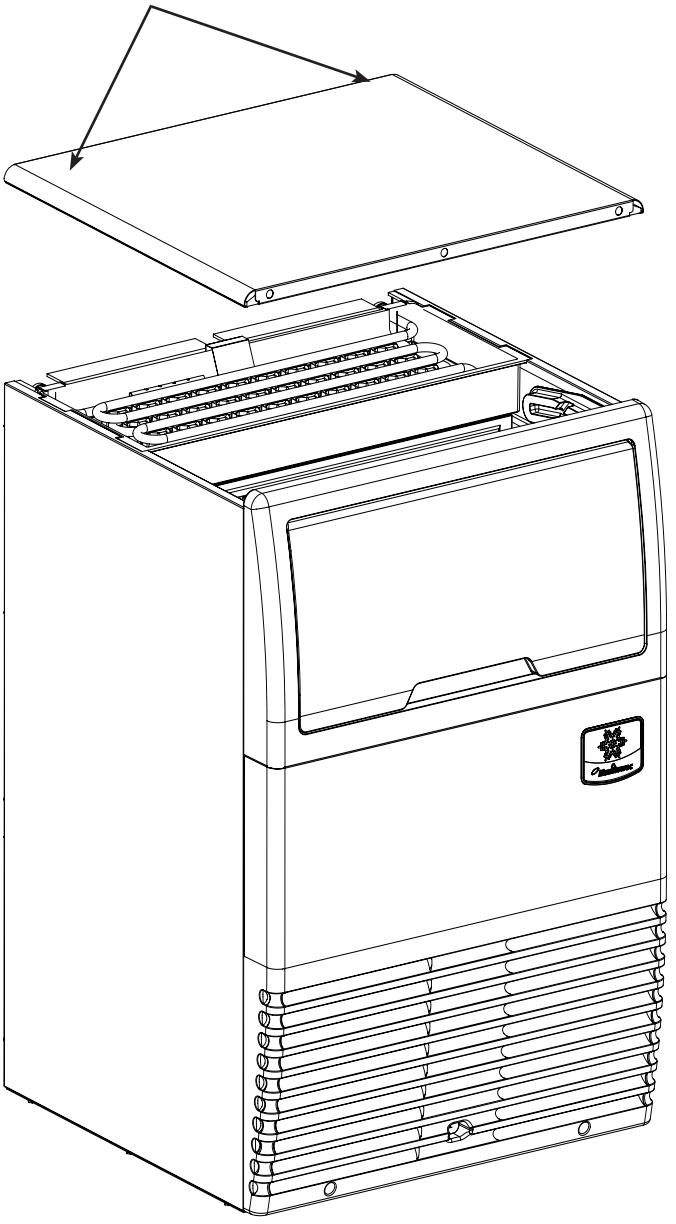
Componet Removal

TOP COVER

For easiest access to the evaporator compartment, the top cover can be removed.

1. Remove two screws on the rear of the ice machine.
2. Slide top cover back to disengage the three pins from the front panel.

Remove Two Screws-Slide Cove Back To Remove

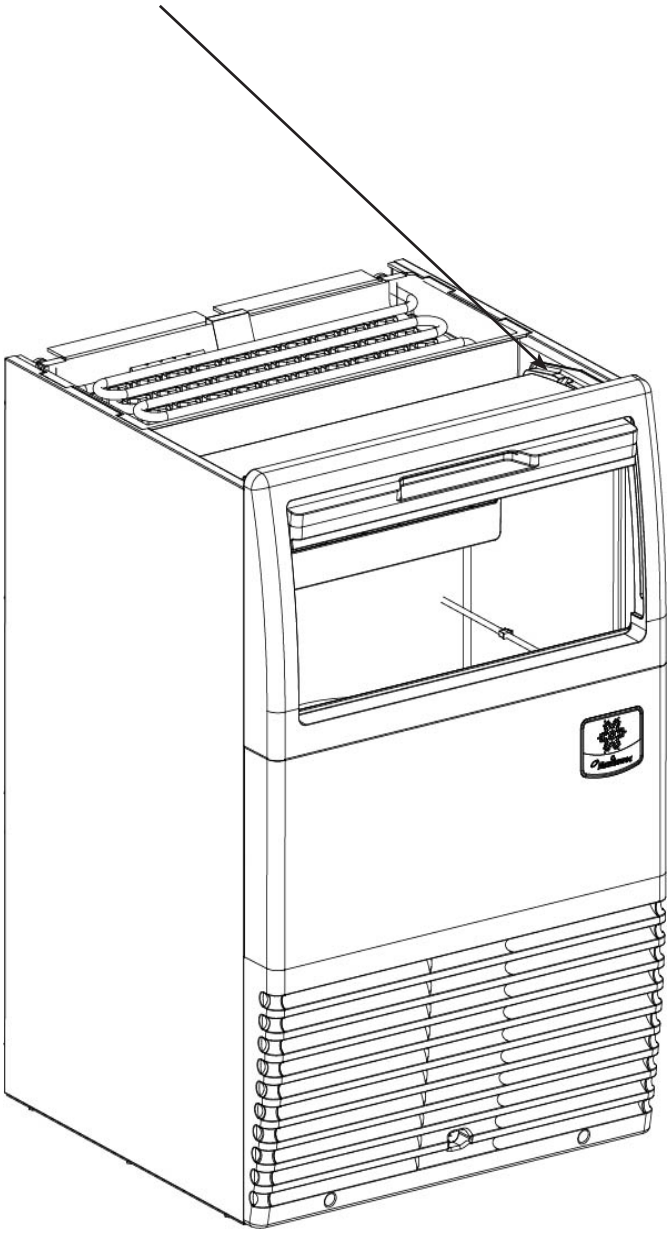


BIN DOOR

Allows access to the storage bin.

1. Remove top cover.
2. Slide door up until rear pins align with slot in door tracks.
3. Lift rear door pins out and slide door up until front door pins align with slot.
4. Lift door out of door track

Align Door Pins With Track Slots Then Lift Door Out of Track

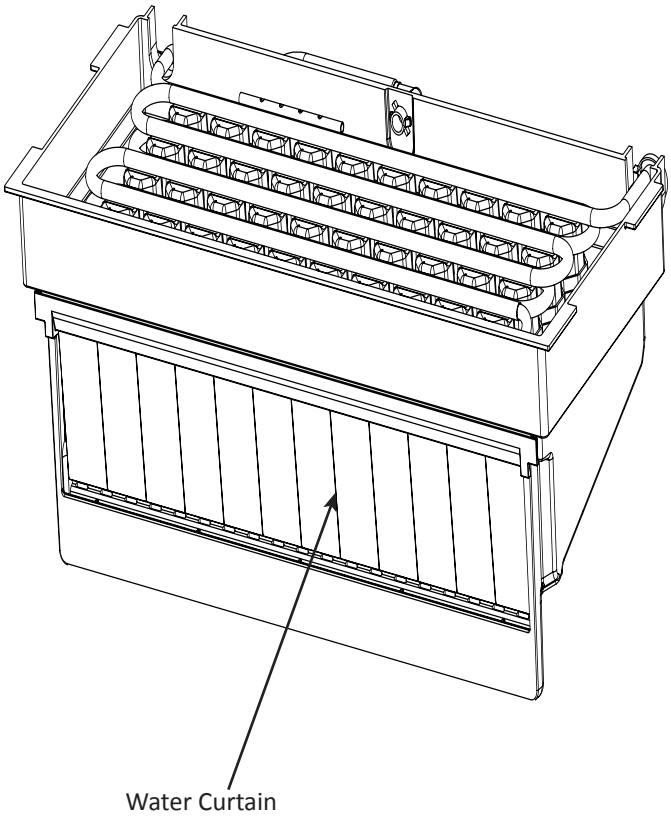


WATER CURTAIN

The water curtain is designed to keep the spraying water from escaping the evaporator compartment. Removal of the bin door is not required, but enhances access.

Grasp the ice curtain and lift up.

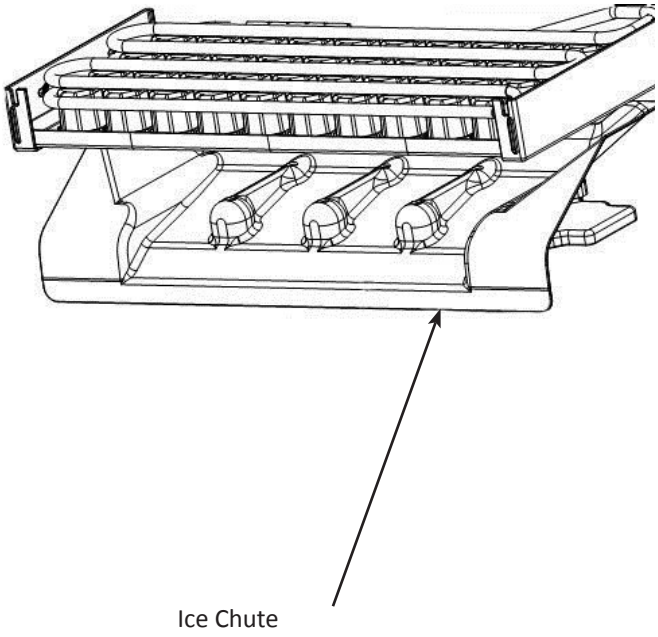
To re-install into ice machine,pivot the water curtain and pull down into position. Make sure tabs are secure in grooves.



ICE CHUTE

The ice chute is positioned over the spray nozzles and allows the ice to easily fall into the bin. It must be firmly positioned over the Spray Bar Assembly, with the front edge inside the water trough or the spray nozzles will not be aligned with the spray holes, and spray water will fall into bin.

1. Grab protruding spray holes on one end and lift up.
2. Pivot ice chute and remove.
3. To re-install ice chute, grasp protruding spray holes and position over Spray Bar Assembly. Make sure rear supports are over Spray Bar Assembly, and front edge is inside of water trough.

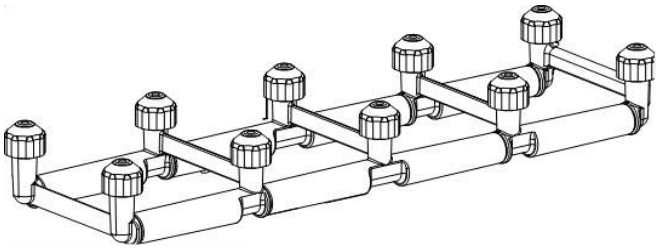


SPARY BAR

The spray bar supplies water to the individual ice-making cups. Water from the Water Pump sprays through the nozzles, located on the upper portion of the tubes.

1. Grasp one end of the spray bar, lift up and remove from seat formed in water trough.
2. Remove both plastic clips on water inlet tubing by grasping both ears on clip and separating.
3. Apply food grade lubricate to ease re-assembly of spray bar components when necessary.
4. To re-install spray bar, position water inlet tubing on inlet ports, and squeeze clips until tight.
5. Reposition assembly on water trough seat.

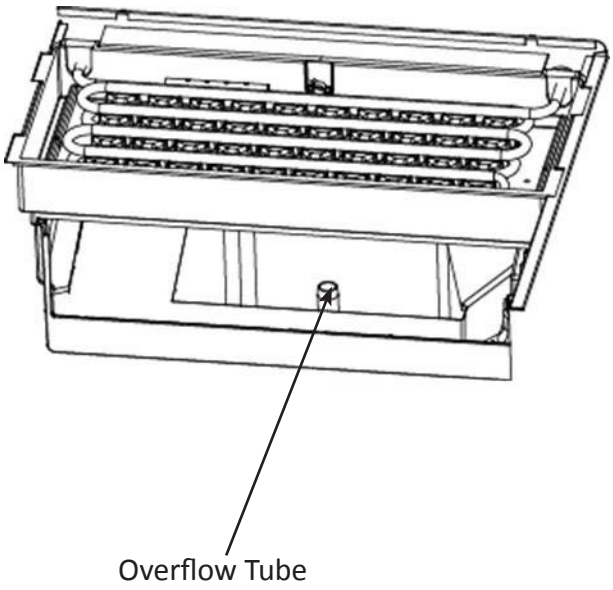
Nozzles and inserts can be removed for cleaning by unscrewing nozzles. Inserts are located inside the spray bar ports. The spray bar also disassembles for easy cleaning.



SUMP DRAIN OVERFLOW TUBE

The sump drain overflow tube is located in the evaporator water sump.

1. Remove shutters and ice chute.
2. Lift spray bar or disconnect and remove for easiest access.
3. Pull up on over flow tube to remove.
4. To replace plug, insert in hole, and push with force to make a tight seal.



Ice Making Sequence of Operation

INITIAN START-UP

1. Water Inlet and Pressure Equalization

Turn the toggle switch to”ON” position,the water fill valve and harvest valve are energized, 300 seconds later, the water fill valve is de-energized. 20seconds after the harvest valve solenoid is energized, the compressor is energized. 300seconds after the compressor is energized, the harvest valve solenoid is de-energized, the water pump and the fan motor are energized,machine goes into freeze cycle.

2. Freeze Cycle

The pump sprays water into the inverted cups. The water freezes layer by layer, until an ice cube forms in each cup.

When the”water temperature”is equal to or less than 2 °C for more than 5 seconds, control will read

the” liquid line temperature” and dip switch setting , get the” freeze postpone time” and “fan shut off time”.Board will shut the Fan before the end of the freeze cycle to assist harvest. When the ” freeze postpone time” has elapsed, the harvest cycle is initiated.

3. Harvest Cycle

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

At the point of 2 minutes to freeze end , board will read the “ liquid line temperature”again and calculate the “harvest time”

The ice falls from the cups and is directed into the bin by the ice chute. The harvest cycle continues until the harvest time has elapsed, then machine goes into a new freeze cycle

4. 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 machine will stop after approximately 45seconds of continuous ice contact with the bin thermostat probe.

The ice machine remains off until a 3 minutes delay has elapsed and enough ice has been removed from the storage bin to allow the ice to fall clear of the bin thermostat probe. As the ice clears the probe, the bin thermostat warms up and the machine starts another freeze cycle.

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 de-scaling and sanitizing

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

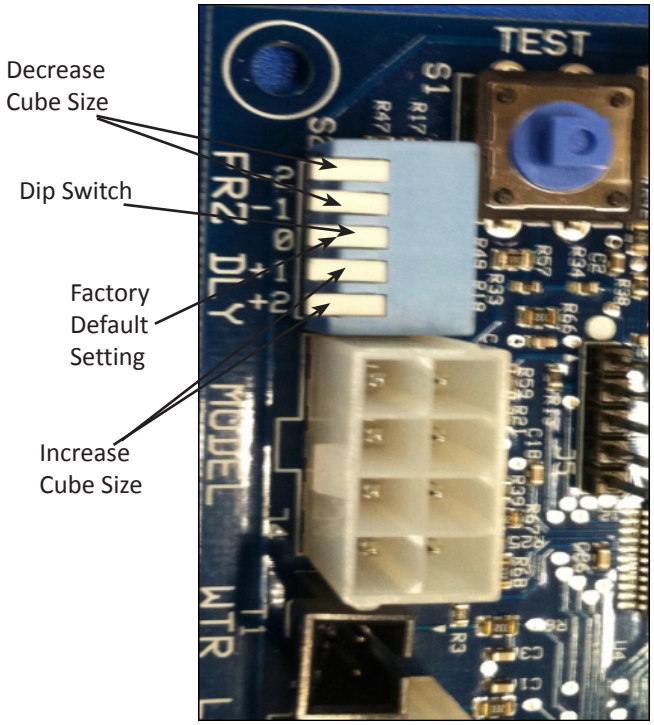
Important

It is recommended that adjustments made to this ice machine be made by a qualified technician. Improper adjustment, may seriously affect the life of this ice machine.

ICE CUBE THICKNESS CHECK

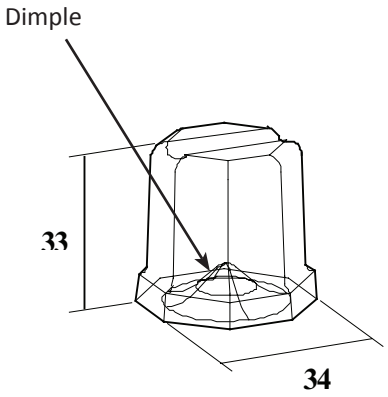
The ice cube thickness is factory-set to maintain the ice cube thickness at the proper size and weight.

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), raise the “dip switch” level to increase cube size. Allow ice machine to complete three cycles, then check cube.
4. If cubes are too full, (no dimple), lower the “dip switch” level to decrease cube size.Allow ice machine to operate three complete cycles.
5. The “dip switch” can be adjusted to five levels: -2/-1/0/+1/+2, and ensure that only one level switch is pressed.



CUBE SHAPE

The standard cube has an average weight of 19 grams, Notice the normal dimple in the center of the cube.



Standard Cube 19g

Section 4
Maintenance

General

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

> **⚠ Caution**
>
> If you do not understand the procedures or the safety precautions that must be followed, call your local service representative to perform the necessary maintenance procedures for you.

Basic hygiene and maintenance of your Ice Machine, will increase its reliability, increase performance, and help save on water and power consumption. Ice production will be maintained within the manufacturers guidelines, and unwanted repairs due to maintenance issues will be minimized.

The chart below is an overview of the maintenance that the end user and service technician should perform, and the frequency. These figures are the minimum required. If the Ice Machine is supplied with hard water, more frequent evaporator de-scaling should be performed. If the condenser air filter is totally blocked, after one week, more frequent cleaning is recommended.

Maintenance	Weekly	Monthly	Semi Annual	Annual	After prolonged shutdown	At Start-up
Clean cabinet exterior	**X**				**X**	**X**
Sanitize Ice Bin			**X**		**X**	**X**
Clean Evaporator			**X**	**S**	**S**	
Sanitize Evaporator			**X**	**S**	**S**	**S**
Clean Condenser Coil			**X**	**S**	**S**	
Check Ice Quality	**X**			**S**	**S**	**S**

X= End User

S=Service Company

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. An extremely dirty ice machine must be taken apart for de-scaling and sanitizing.

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

⚠ Caution

Use only approved Ice Machine Cleaner and Sanitizer (Manitowoc De-scaler part number 000000084 and Manitowoc Sanitizer part number 9405653). Read and understand all labels printed on bottles before use. Do not mix Ice Machine De-scaler and Sanitizer solutions together

⚠ 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.

REMEDIAL DE-SCALING PROCEDURE

- This procedure de-scales all components in the waterflow path, and is used between the bi-yearly detailed

Detailed De-scaling and Sanitizing procedure

DE-SCALING PROCEDURE

Ice machine de-scaler is used to remove lime scale or other mineral deposits. Sanitizer is used to remove algae or slime.

Mix 4 liters of water with 500 ml of de-scaler in a plastic or stainless container.

De-scaler	Water
500 ml (16 oz)	4 L (1 gal)

Step 1 Set the toggle switch to the OFF position at the end of a Harvest Cycle, after ice releases from the evaporator. Or, set the switch to the OFF position and allow the ice to melt off the evaporator.

⚠ Caution

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

Step 2 Remove all ice from the bin.

Step 3 Remove all parts as described in Section 3 “Componet Removal” on page 12.

Step 4 Take all components to sink and with 2 liters De-scaler/Water mixture clean all components with a soft nylon brush. Disassemble spray bar, remove nozzles and inserts and soak for 5 minutes. For heavily scaled parts, soak in solution for 15–20 minutes. Rinse all components with clean water. Cleaning the Condenser

Step 5 While components are soaking; use nylon brush to scrub inside of ice bin. Scrub inside of door, door track, bin, sump trough, and evaporator moldings. With clean water, rinse all of these areas thoroughly.

Step 6 Replace sump overflow tube and pour remaining 2 liters of mixture into the water sump. Replace all parts.

Step 7 To start a standard cleaning cycle, press the toggle switch to WASH position and hold for 5 seconds.

Step 8 Wait until the cleaning cycle is complete (approximately 13.5 minutes). Remove water curtain, ice chute and over flow tube from the water sump. Allow all water to drain from the sump. Replace drain plug.Press the toggle switch to WASH position and hold for 5 seconds to start a rinsing cycle.

Step 9 Wait until the rinsing cycle is complete (approximately 12 minutes). Remove water curtain, ice chute, water sump over flow tube. Drain water from sump and replace tube.

SANITIZINGING PROCEDURE

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

Step 10 Mix 60 ml of sanitizer with 12 l of water in a plastic or stainless steel container.

Sanitizer	Water
60 ml (2 oz)	12 L (3 gal)

Step 11 Remove Water Curtain and Ice Chute as described in Section 3 “Componet Removal” on page 12.

Step 12 Take all components to sink and with 10 liters Sanitizer/Water mixture sanitize all components with a soft nylon brush or cloth. Do not rinse components.

Step 13 Use brush or cloth to sanitize the inside of ice bin. Scrub inside of door, door track, bin, water sump, water distribution assembly and evaporator moldings. Do not rinse.

Step 14 Replace sump drain over flow tube, and transfer remaining 2 liters of solution to the sump trough. Replace all components.

Step 15 To start a standard sanitizing cycle, press the toggle switch to WASH position and hold for 5 seconds.

Step 16 Wait until the cleaning cycle is complete (approximately 13.5 minutes). Remove water curtain and ice chute Remove over flow tube from water sump and allow all water to drain from sump. Replace drain plug. Press the toggle switch to WASH position and hold for 5 seconds to start a rinsing cycle.

Step 17 Wait until the rinsing cycle is complete (approximately 12 minutes). Remove water curtain, ice chute, water sump over flow tube. Drain water from sump and replace tube.

Step 18 Replace all parts.

Step 19 Place toggle switch to ON position,ice machine will go into ice making cycle.

NOTE: To terminate a standard cleaning cycle, press the toggle switch to WASH position and hold more than 30 seconds

⚠Caution

If the de-scaler /sanitizer solution has been poured into the water trough, then the standard cleaning cycle must be completed. Don’t terminate the cleaning cycle, or the ice machine will not purges the remaining de-scaler /sanitizer solution from the water trough.

Cleaning the Condenser

⚠Warning

Disconnect electric power to the ice machine at the electric service switch before performing maintenance on equipment.

AIR-COOLED 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.

1. Remove Plastic Front Grill removing two Phillips head screws. Clean Grill openings before replacing.
2. Clean the outside of the condenser with a soft brush or a vacuum with a brush attachment. Clean from top to bottom, not side to side. Be careful not to bend the condenser fins.
3. Shine a flashlight through the condenser to check for dirt between the fins. If dirt remains:
   A. Blow compressed air through the condenser fins. Be careful not to bend the fan blades.
   B. If dirt or grease remains between fins, consult your service representative.

⚠Warning

The condenser fins are sharp. Use care when cleaning them.

Exterior Cleaning

Clean the area around the ice machine as often as necessary to maintain cleanliness and efficient operation.

Sponge any dust and dirt off the outside of the ice machine with mild soap and water. Wipe dry with a clean, soft cloth.

A commercial grade stainless steel cleaner and polish may be used.

Removal from Service/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 0°C (32°F) or below.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. Follow the steps below.

⚠ Caution

If water is allowed to remain in the ice machine in freezing temperatures, severe damage to some components could result. Damage of this nature is not covered by the warranty.

Follow the applicable procedure below.

AIR-COOLED ICE MACHINES

1. Disconnect the electric power at the circuit breaker or the electric service switch.
2. Turn off the water supply.
3. Drain the water from the water sump and water pump by disconnecting the water pump tubing.
4. Disconnect and drain the incoming ice-making water line and disconnect the tubing from the water inlet valve outlet and allow water to drain.
5. Blow compressed air in the drain opening and water valve outlet hose, then reattach.
6. Make sure water is not trapped in any of the water or drain lines.

Section 5
Troubleshooting

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 run.	No Power – Breaker off, fuse blown, unplugged	Restore power
	Toggle switch is not in ice position	Place toggle switch in ice position
	The storage bin is full	Remove enough ice from the bin and wait for 3 minutes delay to expire.
Ice machine runs and no ice is produced	No water to ice machine	Correct water supply
	Water sump overflow tube out of position	Reposition/install overflow tube
	Water sump thermistor or liquid line thermistor faulty	Replace the thermistor
	Control board problem	Call for service
Freeze cycle long – low production	Dirty condenser.	Clean condenser
	Water temperature too high	Connect to a cold water supply, verify check valves in faucets and other equipment work properly
	Refrigeration problem	Call for service
Shallow, incomplete or white ice cubes	Ice machine is dirty	De-scale & sanitize the ice machine
	Water pressure supply incorrect	Verify water pressure is correct
	Air temperature around ice machine is too high	Vent area or move ice machine
	Dip switch incorrectly adjusted	Adjust Dip switch
Will not initiate a harvest cycle	Liquid line thermistor faulty	Replace the thermistor
	Control board problem	Call for service
Ice cubes do not release	Ice machine is dirty	De-scale and sanitize the ice machine
	Low ambient around ice machine	Move ice machine to warmer area
	Dip switch incorrectly adjusted (cubes too large)	Adjust Dip switch

MANITOWOC ICE
2110 SOUTH 26TH STREET, MANITOWOC, WI 54220

844-724-2273
WWW.MANITOWOCICE.COM

©2018 Manitowoc. except where explicitly stated otherwise. All rights reserved.
Part Number: 040006977 Rev. 02 09/22