Indigo NXT Marine Ice Machines

Installation, Operation and Maintenance Manual



Original Document

⚠ **Caution**

Read this instruction before operating this equipment.

Part Number: 000016036 Rev 01 07/22

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.
- Ice machines require a deflector when installed on an ice storage bin. Prior to using a non-OEM ice storage system with this ice machine, contact the bin manufacturer to assure their ice deflector is compatible.
- Prior to installing a non-OEM ice storage system with this ice machine, follow the manufacturers installation procedures and verify the location and installation meets the local/national mechanical codes and stability requirements.
- 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.
- 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.
- Connect to a potable water supply only.
- Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.
- 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.

⚠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.
- 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.
- Units with two power 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.
- 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.

Table of Contents

Safety Notices

Safety Notices 3

Section 1
General Information

Model Numbers 9
Accessories 9
How To Read A Marine Model Number 10

Section 2
Installation

Installation 11
Location Requirements 11
Installation Requirements 11
Ice Machine Heat of Rejection 12
Bin Installation Requirements 12
Dispenser Installation Requirements 12
Electrical Requirements 13
Maximum Breaker Size & Minimum Amperage Chart 13
Water Supply and Drain Line Sizing/Connections 14
Water Connections 14
Water Supply and Drain Connections 15
Air Gap 15
Space-Maker Connections 16
Condenser Water Requirements 16
Drain Connections 16
Starting the Ice Machine 17
Initial Start Steps 17
Minimum/Maximum Slab Weight 17
Warranty 18
Warranty Registration 18

Section 3
Operation

Touch Screen Features 19
Home Screen Icon Descriptions 20
Setup Wizard 21
Menu Screen Navigation 22
Ice Making Sequence of Operation 23
Control Board Timers 23
Minimum/Maximum Slab Weight 25

Ice Thickness Check 25
Reverse Osmosis or Deionized Water Usage 26

Section 4 Maintenance

Descaling and Sanitizing 27
Detailed Descaling and Sanitizing Procedure 28
Sanitizing Procedure 29
Parts Removal for Detailed Descaling and Sanitizing 30
Remedial Descaling Procedure 32
Removal from Service/Winterization 33

Section 5 Troubleshooting

Before Calling for Service Checklist 35
Service Faults 37

Section 1
General Information

Model Numbers

This manual covers the following models:

Self-Contained Water-Cooled
IDT0750W-261M
IDT0900W-261M
IYT0900W-261M
IYT0900W-263M
IDT1900W-261M
IYT1900W-261M
IYT1900W-263M

Space-Maker Self-Contained Water-Cooled
IDT0900W-261V
IYT0900W-261V
IDT1900W-261V
IYT1900W-261V

Accessories

Ice Deflector

An ice deflector is required when the ice machine is installed on a bin. An ice deflector is not required when the ice machine is installed on a dispenser.

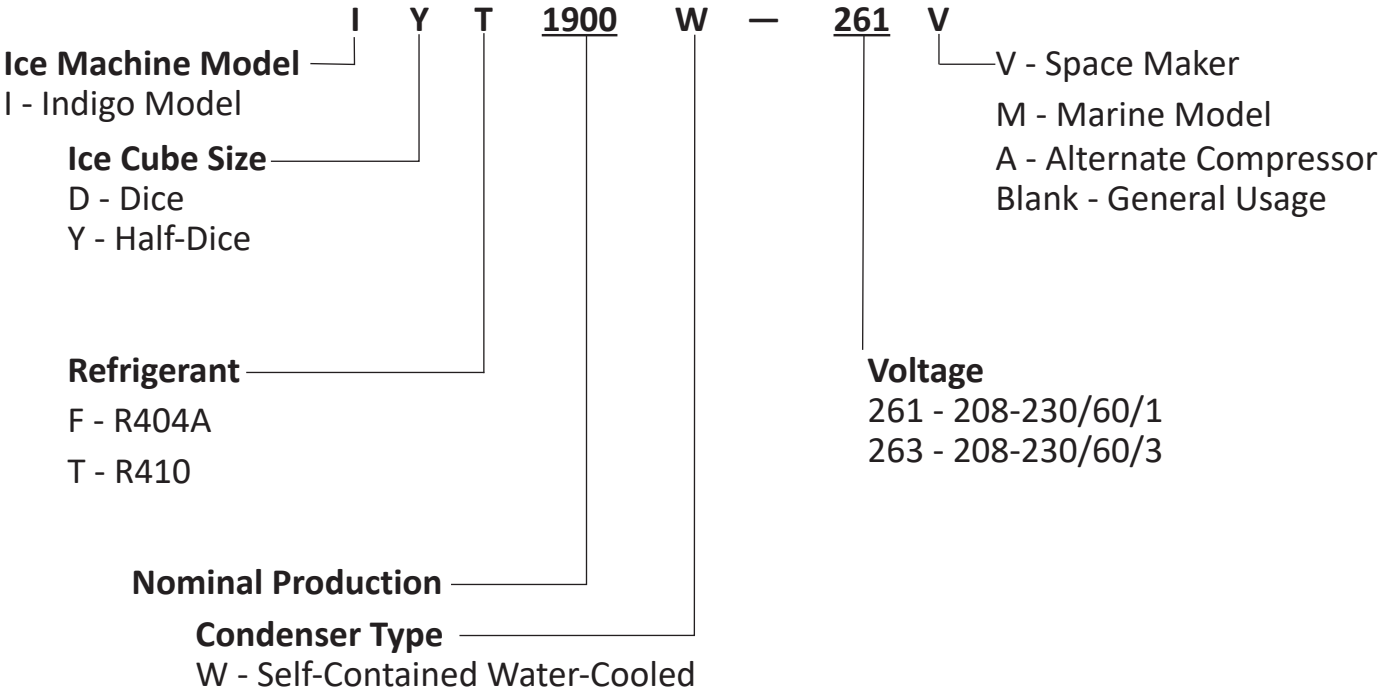
LuminIce® II

The LuminIce® growth inhibitor recirculates the air in the ice machine foodzone over a UV bulb. This process will inhibit the growth of common micro-organisms on all exposed foodzone surfaces.

AuCS® Automatic Cleaning System

This accessory reduces equipment cleaning expense. The AuCS® accessory monitors ice making cycles and initiates a remedial cleaning procedure automatically.

How To Read A Marine Model Number



NOTE: These products are hermetically sealed and contain R410A.

Section 2
Installation

Installation

Location Requirements

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

- The location must be indoors and must be free of airborne and other contaminants.
- The location must not be near heat-generating equipment or in direct sunlight.
- The location must allow enough clearance for water, drain, and electrical connections.

Installation Requirements

- The ice machine and bin must be level.
- Vent the ice machine and bin drains separately.
- Bin drain termination must have an air gap.
- The ice machine and bin must be descaled and sanitized after installation.
- The drain line must contain a union or other suitable means of disconnection at the ice machine.

Minimum/Maximum Temperatures

Model	Minimum Air Temperature	Maximum Air Temperature
All Ice Machine Head Sections	35°F 2°C	110°F 43°C

Ice Machine Heat of Rejection

Ice Machine	Heat of Rejection	
Series	Average	Peak
IT0750WM	12800	13700
IT0900WM	18620	20020
IT1900WM	26100	30500

Clearance Requirements

IT0750WM	Marine Water-Cooled
Top/Sides	8" (20 cm)
Back	5" (13 cm)

IT0900WM	Marine Water-Cooled
Top/Sides	8" (20 cm)
Back	5" (13 cm)

IT1900WM	Marine Water-Cooled
Top/Sides	8" (20 cm)
Back	5" (13 cm)

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.

Bin Installation Requirements

- The installation area must be capable of supporting the combined weight of the equipment and product.
- All ice machines installed on a bin require an ice deflector.
- Manitowoc bins have a deflector installed and require no modifications when used with a forward-facing evaporator.
- Align sides and back of ice machine with sides and back of bin when placing ice machine on bin.

Dispenser Installation Requirements

Observe following recommendations unless required by the dispenser manufacturer.

- An adapter is not required for ice machines that match the dispenser size.
- A deflector is not required.
- Ice level management is recommended to prevent water leakage or movement of ice machine during agitation.
- Align sides and back of ice machine with sides and back of dispenser when placing ice machine.
- Follow ice machine installation procedures in this manual and any additional installation requirements specified by the dispenser manufacturer.

Electrical Requirements

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

- The ice machine must be grounded.
- A separate fuse/circuit breaker (dedicated circuit) must be provided for each ice machine head section, condenser or condensing unit.
- 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).

⚠Warning

The ice machine must be grounded and all wiring must conform to governing codes.

Voltage

The maximum allowable voltage variation is +10% / -5% of the rated voltage at ice machine start-up (when the electrical load is highest).

Fuse/Circuit Breaker

A separate electrical disconnect, which disconnects all poles and has 3 mm (1/8") contact separation, must be provided for fixed wiring.

Ground Fault Circuit Interrupter

We do not recommend the use of a GFCI/GFI circuit protection with our equipment. If a GFCI/GFI is required by code, use a GFCI/GFI breaker rather than an outlet, which is more prone to intermittent nuisance trips than panel circuit breakers.

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) also depends on location, materials used, length of run, etc., so it must be determined by a qualified electrician.

Maximum Breaker Size & Minimum Amperage Chart

Due to continuous product improvements, this information is for reference only. Please refer to the ice machine data plate to verify electrical data. Model/Serial data plate information overrides information listed on this page

Ice Machine	Voltage/ Phase/ Cycle	Max Fuse/ Circuit Breaker	Min Circuit Amps
IT0750WM	208-230 1/60	15	8.1 [1]7.9
IT0900WM	208-230/ 1/60	15	8.8
	208-230/ 3/60	15	8.7
IT1900WM	208-230/ 1/60	25	16.5 [1]15.0
	208-230/ 3/60	20	12.8

[1]Alternate compressor - Refer to model serial tag on ice machine to verify your minimum circuit amps.

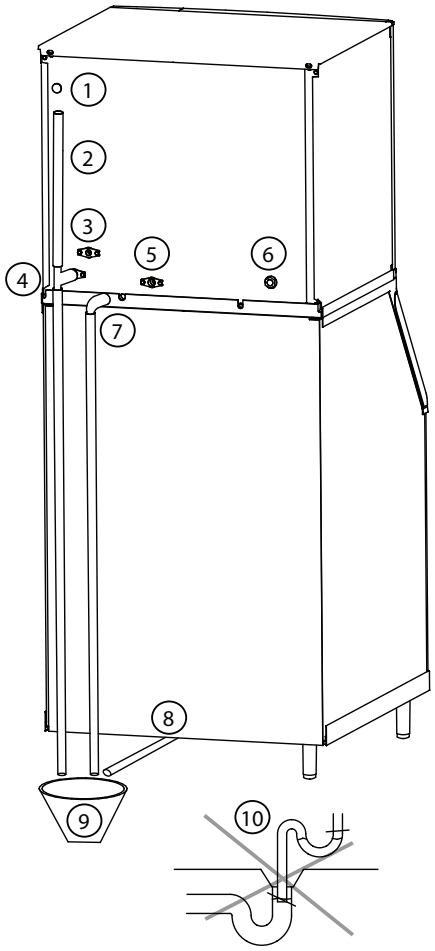
Water Supply and Drain Line Sizing/Connections				
Location	**Water Temperature**	**Water Pressure**	**Ice Machine Fitting**	**Tubing Size up to Ice Machine Fitting**
Ice Making Water Inlet	40°F (4.4°C) Min. 90°F (32°C) Max.	20 psi (140 kPa) Min. 80 psi (550 kPa) Max.	3/8" Female Pipe Thread	3/8" (10 mm) minimum inside diameter
Ice Making Water Drain	—	—	1/2" Female Pipe Thread	1/2" (13 mm) minimum inside diameter
Condenser Water Inlet	40°F (4.4°C) Min. 90°F (32°C) Max.	20 psi (140 kPa) Min. 276 psi (1900 kPa) Max.	IT0750WM & IT0900WM = 3/8" IT1900WM = 1/2" Female Pipe Thread	
Condenser Water Drain	—	—	1/2" Female Pipe Thread	1/2" (13 mm) minimum inside diameter
Bin Drain	—	—	3/4" Female Pipe Thread	3/4" (19 mm) minimum inside diameter
Large Capacity Bin Drain			1" Female Pipe Thread	1" (25 mm) minimum inside diameter

Min. = Minimum, Max. = Maximum

Water Connections

- Local water conditions may require treatment of the water to inhibit scale formation, filter sediment, and remove chlorine odor and taste.
- Connect ice making water inlet to potable water only.
- Install a water shut-off valve for potable water and water cooled condenser lines.
- Do not connect the ice machine to a hot water supply. Verify hot water restrictors installed on other equipment are functioning correctly. (Check valves on sink, faucets, dishwashers, etc.)
- Install a water regulating valve if water pressure exceeds the maximum valve rating.
- Insulate water and drain lines to prevent condensation.

Water Supply and Drain Connections



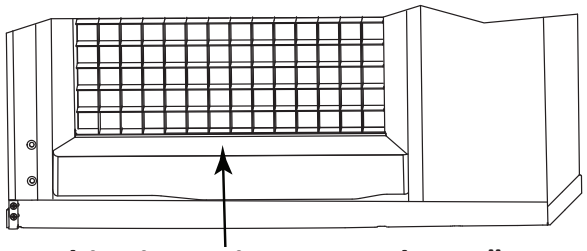
Item	Description
1	Electrical Entrance
2	Vent Tube - Minimum Height 18” (46 cm)
3	Potable Water Inlet - 3/8”FPT
4	Potable Water Drain - 1/2” FPT
5	Condenser Water Outlet - 1/2” FPT
6	Condenser Water Inlet See “Condenser Water Inlet” on page 14 for fitting sizes
7	Base Drain - 1/2” CPVC Socket
8	Bin Drain - See “Bin Drain” on page 14 for fitting sizes
9	Floor Drain - Open and Trapped
10	Do Not Trap Drain Line - Leave Air Gap Between Drain Line and Floor Drain

⚠Caution

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.

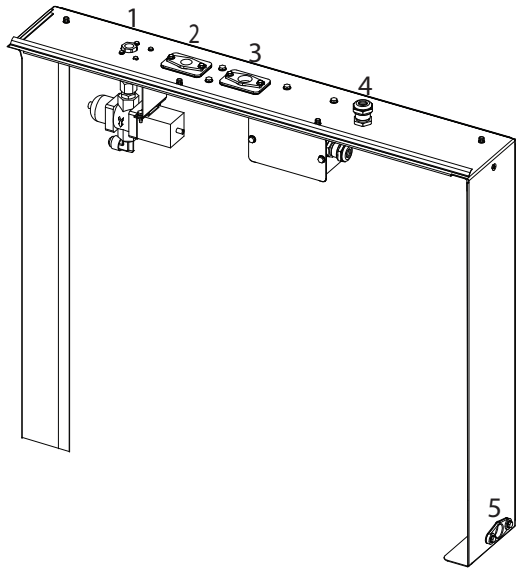
AIR GAP

A greater than 1-inch air gap is built into the ice machine for back-flow prevention. This air gap exceeds NSF 12 requirements for back-flow prevention.



This air gap is greater than 1”

Space-Maker Connections



Item	Description
1	Condenser Water Inlet see “Condenser Water Inlet” on page 14 for fitting sizes
2	Potable Water Inlet - 3/8”FPT
3	Condenser Water Outlet - 1/2” FPT
4	Electrical Entrance
5	Potable Water Drain - 1/2” FPT

Condenser Water Requirements

- Water pressure at the condenser cannot exceed 276 psig (1900 kPa).
- Water entering the condenser must not exceed 90°F (32°C).
- Water flow through the condenser must not exceed 5 gallons (19 liters) per minute.
- Allow for a pressure drop of 7 psi (50 kPa) between the condenser water inlet and the outlet of the ice machine.
- Water exiting the condenser must not exceed 110°F (43°C).

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 foot (2.5 cm per meter) of run and must not create traps.
- The floor drain must be large enough to accommodate drainage from all drains.
- Run separate bin and ice machine drain lines. Insulate them to prevent condensation.
- Install a tee at the ice machine drain outlet and install an 18” (46 cm) vent above the drain line.
- Drain termination must have an air gap that meets local code.

Auxiliary Base Drain Installation

An auxiliary drain is located in the ice machine base to remove moisture in high humidity areas.

1. View the back of the ice machine base on the compressor side and locate and remove the cap plug.
2. Route tubing to an open site drain:
   - Use 1/2 inch nominal CPVC tubing.
   - Apply a bead of silicone around the exterior of the ice machine tubing and insert into ice machine base. The silicone will secure the tubing and provide a watertight seal.
   - Provide support for tubing.

Starting the Ice Machine

Starting the ice machine and completing the Operational Checks are the responsibilities of the owner/operator.

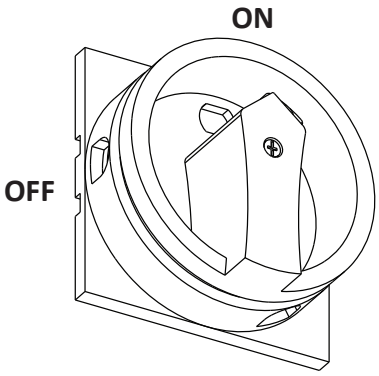
Adjustments and maintenance procedures outlined in this manual are not covered by the warranty.

INITIAL START STEPS

Step 1 Remove and discard shipping brackets from ice thickness probe before starting the ice machine.



Step 2 Place the disconnect switch in the on position.



Step 3 Ice machine must be programmed refer to “Setup Wizard” on page 21 for details.

Step 4 Refer to “Descaling and Sanitizing” on page 27 and clean and sanitize the ice machine and bin before placing in operation.

Step 5 Refer to “Ice Making Sequence of Operation” on page 23 for operational details.

MINIMUM/MAXIMUM SLAB WEIGHT

Adjust ice thickness probe to maintain the correct bridge thickness and “Minimum/ Maximum Slab Weight” on page 25.

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.

Section 3
Operation



Touch Screen Features

The Indigo®NXT control panel offers a series of pressure-sensitive buttons and an interactive touchscreen.

Buttons

Power Button: Provides On/Off functions for the ice machine.

Lock/Unlock Button: Allows or prevents touchscreen navigation.

Cleaning Button: Initiates a cleaning cycle. Refer to Section 4 for details.

Touchscreen

Home screen allows viewing of ice machine status, alerts and messages. Navigation with the touchscreen provides access to menu items, machine information, settings and event logs. Setup and Energy Saver settings can be adjusted along with access to service and troubleshooting information.

NOTE: Touchscreen is to be activated with finger tips only.

Icons: Provide status indication and allow navigation by pressing the icon.

HOME SCREEN ICON DESCRIPTIONS

Icon	Description
Home Screen 	Center portion of the screen displays the current condition of the ice machine - Making ice, bin full, program mode or machine off
Alert 	Alert icon with number of messages. Pressing this icon will display the alert log which will allow viewing and resetting of alerts
Message 	Notification icon with quantity of messages. Pressing this icon will display the routine maintenance reminder screen which will allow viewing and resetting of the reminder
Menu 	Menu icon will take you to the main menu
Information 	Information icon provides model and serial number, installation date and other information specific to the ice machine
Service Locater 	Provides contact information for your local service support - Default is the Manitowoc Ice website service locater
Lock/Unlock 	Indicates if screen is locked or unlocked
LuminIce 	Only visible when a LuminIce® II accessory is connected. Blue S - Normal operation Red S - Replace bulb Red/Blue alternating - Incorrect bulb installed
Performance Specifications NOTE: The performance statistics are calculated based on the performance of the machine at 90 degree ambient temperature and 70 degree water temperature. The actual statistics may vary depending on your operating conditions.	

Setup Wizard

Screens will automatically advance after a selection is made or press the right arrow to advance one screen, press left arrow to go back one screen. All settings can be accessed and changed without the wizard by using menu screen navigation.

Setup	Description
Press ON/ OFF Button	On/Off button is used to start/stop ice making.
Enter Model Number	Only visible if model number can not be automatically identified. The ice machine will not start without model identification.
Select Language	Default is English. Scroll to select a different language.
Start Wizard	Setup wizard will guide ice machine programming.
Accessory Detection	Detects if Ice Level Sensor, LuminIce II or AuCS are connected. Checkmark = yes - X = no
USB Setup	Only used when setup features have been transferred to a USB drive. Skip screen by selecting right arrow.
Configure Date and Time Formats	Select Month/Day/Year or Day/Month/Year. Select 12 hour or 24 hour time format.
Set Time	Use arrows to set local time.
Set Date	Use arrows to set date for your location.
Units	Select standard or metric.
Brightness	Configure screen brightness during normal operation.

Setup	Description
Ice Program	Program ice machine run times or press right arrow to skip this setup.
Cleaning Reminder	Set descale or sanitize reminder or press right arrow to skip.
IAuCS Only when detected	Set frequency of operation when this accessory is installed.
Air Filter Air-cooled models only	Set to ON for self-contained air cooled models.
Water Usage	Factory default or Use less water for reverse osmosis systems or Use more water to improve clarity for unfiltered water
Water Filter	Select Yes or No.
LuminIce II Only when detected	12 month reminder is automatically set.
Ice Level Sensor Only when detected	Reminder to rotate the sensor from shipping to operational position.
Wizard Complete	Press right arrow or home icon to return to home screen.

Menu Screen Navigation

Select SETTINGS Icon from the Home Screen to access Main Menu screen.

Energy	**Service**	**Settings**	**Reset Defaults**
Ice Program	Data	Language	Require Setup Wizard
Water Usage	Alert Log	Reminders	Backup Current Settings
Statistics	Manual Harvest	Time & Date	Reset To Factory Defaults
	Control Board Replacement	Units	
	Diagnostics	Brightness	
	Contact Information	USB	
	USB	*AuCS	
	*AuCS		
	*Prime AuCS Pump		

* Only visible when this optional accessory is installed

Ice Making Sequence of Operation

The power button must be depressed and the water curtain/ice dampers must be in place on the evaporator before the ice machine will start.

Water Purge Cycle

The ice machine purges any remaining water from the water trough down the drain.

Prechill Cycle

The refrigeration system cools the evaporator before the water pump is energized.

Freeze Cycle

Water flows across the evaporator and the refrigeration system chills the evaporator. Ice builds on the evaporator and the freeze cycle continues until the ice thickness probe senses a sheet of ice has formed. The ice thickness probe signals the control board to start a harvest.

Harvest Cycle

Any remaining water is purged down the drain as refrigerant gas warms the evaporator. When the evaporator warms, the sheet of cubes slides off the evaporator and into the storage bin. If all cubes fall clear of the water curtain (or ice damper) the ice machine starts another freeze cycle.

Off Cycle

If the water curtain or ice damper are held open by ice cubes the ice machine shuts off. When the water curtain or ice damper closes, the ice machine starts a new cycle at the water purge.

Control Board Timers

The control board has the following non-adjustable timers:

- The ice machine control board will set its own install date after 100 freeze and harvest cycles.
- The ice machine is locked into the freeze cycle for 6 minutes before a harvest cycle can be initiated.
- The maximum freeze time is 35 minutes at which time the control board automatically initiates a harvest sequence.
- The maximum harvest time is 7 minutes, the control board will perform a water thaw cycle and then return the ice machine to the freeze cycle.

Service Faults

Service Faults are stored and indicated by the control board after three cycles. The number of cycles required to stop the ice machine varies for each Service Fault.

- Long Freeze Cycle - If the freeze time reaches 35 minutes, the control board automatically initiates a harvest cycle. If 6 consecutive 35 minute freeze cycles occur, the ice machine stops.
- Long Harvest Cycle - If the harvest time reaches 7 minutes, the control board automatically returns the ice machine to the freeze cycle. After 3 consecutive long harvest cycles the ice machine stops.

Refer to Section 5 if you receive an alert for Service Fault E01 or E02.

Safe Operation Mode

Allows the ice machine to operate up to 72 hours if the ice thickness probe and/or water level probe sensors fail.

- When the control board starts the safe mode, an alert is flashed on the display to notify the end-user they have a production problem.
- The control board automatically initiates and monitors the safe mode. The control will automatically exit the safe mode if a normal signal is received from the input.
- After 72 hours, the control board will enter a standby mode and turn off.

NOTE: The control board needs a five cycle history to operate safe mode. If five cycles have never been successfully completed the ice machine will shut-off.

Water Assist Harvest

When the damper/curtain does not open within 3.5 minutes in the harvest cycle the following occurs:

- 3.5 minutes - The water inlet valve energizes until water touches the high water level probe.
- 4 minutes - The water pump energizes.
- 6.5 to 7 minutes - The water dump valve energizes.

Water Thaw Cycle

When the damper/curtain does not open during the 7 minute harvest cycle the following water thaw cycle occurs:

- 7 minutes - The compressor, harvest solenoid valve and dump valve de-energize.

1. The water pump remains energized and the water inlet valve energizes until water touches the high water level probe.
2. Water is circulated over the evaporator.
3. Water is circulated, dumped and refilled to the high water level probe for approximately 1 hour.

- At the end of the thaw cycle the ice machine will start another freeze cycle (approximately 1 - 1.75 hour).

Minimum/Maximum Slab Weight

Adjust ice thickness to meet chart specifications.

Model	Minimum Ice Weight Per Cycle lbs Grams	Maximum Ice Weight Per Cycle lbs Grams
IT0750WM	4.12 lbs 1869 grams	4.75 lbs 2155 grams
IT0900WM	6.20 lbs 2812 grams	7.20 lbs 3266 grams
IT1900WM	13.20 lbs 5987 grams	14.80 lbs 6713 grams

Important

Routine adjustments and maintenance procedures are not covered by the warranty.

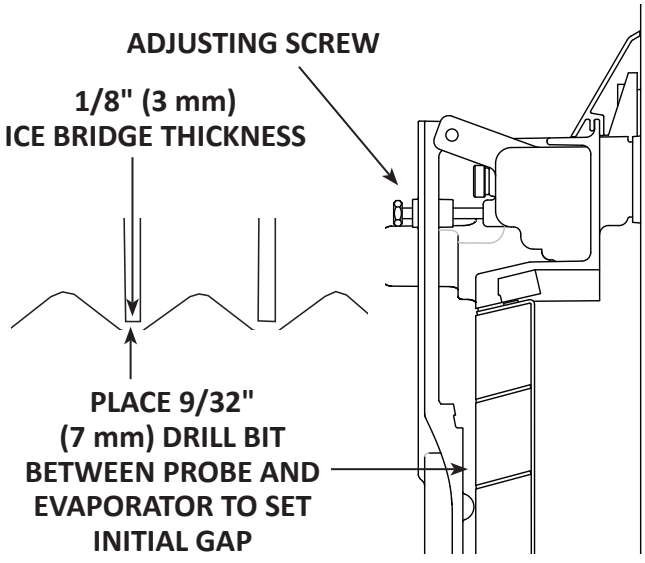
Ice Thickness Check

After a harvest cycle, inspect the ice cubes in the ice storage bin. The ice thickness probe is factory-set to maintain the ice bridge thickness at 1/8" (3 mm).

NOTE: Make sure the water curtain is in place when performing this check. It prevents water from splashing out of the water trough.

1. Inspect the bridge connecting the cubes. It must be approximately 1/8" (3 mm) thick.
2. If adjustment is necessary, turn the ice thickness probe adjustment screw clockwise to increase bridge thickness, counterclockwise to decrease bridge thickness. Set a 7 mm (9/32") gap between ice thickness probe and evaporator as starting point, then adjust to achieve a 1/8" (3 mm) bridge thickness.

NOTE: Turning the adjustment one-third of a turn will change the ice thickness about 1/16" (1.5 mm).

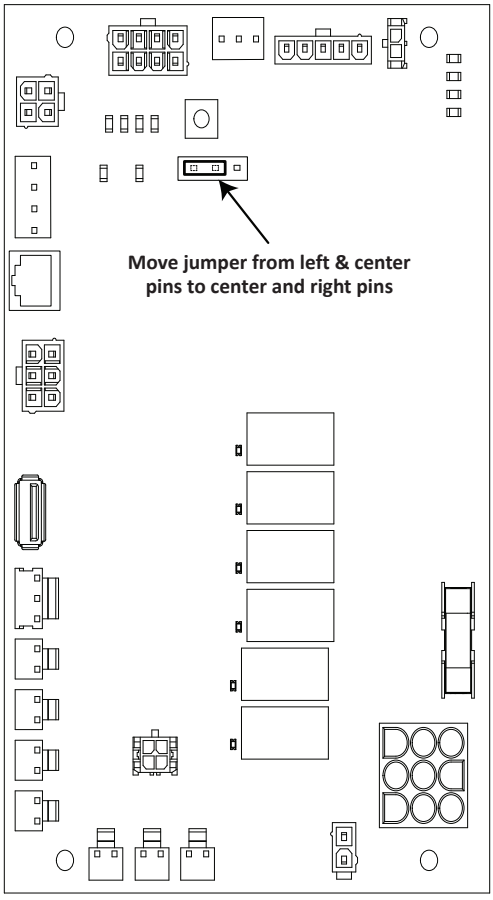


Verify the ice thickness probe wire doesn't restrict probe movement.

Reverse Osmosis or Deionized Water Usage

When using water with low total dissolved solid content (low TDS) the water level probe sensitivity can be increased by moving the jumper over one pin.

The Electronic Control Board diagram shows the default position of the jumper covering the left and center pins. Moving the jumper to the center and right pins and enabling R.O. menu “Use less water with reverse osmosis” (Settings/Energy/ Water Usage/ Use Less Water With Reverse Osmosis) will increase the sensitivity of the water level probe.



Section 4
Maintenance

Descaling 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 six months for efficient operation. If the ice machine requires more frequent descaling and sanitizing, 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 descaling and sanitizing.

Manitowoc Ice Machine Cleaner/Descaler and Sanitizer are the only products approved for use in Manitowoc ice machines.

Using non-Manitowoc de-scalers, sanitizers, cleaners or solutions may result in bodily harm and/or cause damage to the ice machine that is not covered under the warranty.

Sanitizing for Exterior, Remedial, and Detailed procedures can be performed independently and more frequently than descaling when needed.

Ice Machine Inspection

Check all water fittings and lines for leaks. Also, make sure the refrigeration tubing is not rubbing or vibrating against other tubing, panels, etc.

Do not put anything (boxes, etc.) in front of the ice machine. There must be adequate airflow through and around the ice machine to maximize ice production and ensure long component life.

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.

The exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels.

- Never use steel wool or abrasive pads for cleaning.
- Never use chlorinated, citrus based or abrasive cleaners on exterior panels and plastic trim pieces.

Remedial De-scaling Procedure

- This procedure descales all components in the water flow path, and is used between the bi-yearly detailed descaling and sanitizing procedure.

Detailed Descaling/Sanitizing Procedure

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

- The ice machine and bin must be disassembled descaled and sanitized.
- All ice produced during the descaling and sanitizing procedures must be discarded.

⚠Caution

Use only Manitowoc approved Ice Machine Descaler and Sanitizer for this application (Manitowoc Descaler part number 9405463 and Manitowoc Sanitizer part number 9405653). 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.

Detailed Descaling and Sanitizing Procedure

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

NOTE: Although not required and dependent on your installation, removing the ice machine top cover may allow easier access.

Step 1 Open the front door to access the evaporator compartment. Ice must not be on the evaporator during the descaling/sanitize cycle. 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.

Notice

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

Step 2 Remove all ice from the bin/dispenser.

Step 3 Press the Clean button and select "Turn off when complete". Water will flow through the water dump valve and down the drain. Wait approximately 1 minute until the water trough refills and the display indicates Add Chemical. Add the proper amount of ice machine cleaner/descaler to the water trough by pouring between the water curtain and evaporator, then confirm the chemical was added.

⚠Caution

Do not mix Descaler 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 Cleaner/Descaler or Sanitizer.

Model	Amount of Cleaner/ Descaler
IT0750WM/IT0900WM	5 oz (150 ml)
IT1900WM	9 oz (265 ml)

Step 4 Wait until the cycle is complete (approximately 24 minutes). Then disconnect power to the ice machine (and dispenser when used).

> **⚠Warning**
>
> Disconnect the electric power to the ice machine at the electric service switch box.

Step 5 Remove parts for descaling.

Refer to parts removal page 30. Continue with Step 6 when the parts have been removed.

Step 6 Mix a solution of cleaner/descaler 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 descale all parts.

Solution Type	Water	Mixed With
Cleaner/ Descaler	1 gal (4 L)	16 oz (475 ml) cleaner/descaler

Step 7 Use half of the cleaner/descaler & water mixture to descale all components. The 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 descale the parts. Soak parts for 5 minutes (15 - 20 minutes for heavily scaled parts). Rinse all components with clean water.

Step 8 While components are soaking, use half of the solution to descale all food zone surfaces of the ice machine and bin (or dispenser). Use a nylon brush or cloth to thoroughly descale the following ice machine areas:

- Side walls
- Base (area above water trough)
- Evaporator plastic parts - including top, bottom and sides
- Bin or dispenser

Rinse all areas thoroughly with clean water.

SANITIZING PROCEDURE

Step 9 Mix a solution of sanitizer and lukewarm water.

Solution Type	Water	Mixed With
Sanitizer	3 gal (12 L)	2 oz (60 ml) sanitizer

Step 10 Use half 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 half of the sanitizer/water solution to sanitize all food zone 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:

- Side walls
- Base (area above water trough)
- Evaporator plastic parts - including top, bottom and sides
- Bin or dispenser

Do not rinse the sanitized areas.

Step 12 Replace all removed components and wait 20 minutes.

Step 13 Press the Clean button and select "Make ice when complete". Water will flow through the water dump valve and down the drain. Wait approximately 1 minute until the water trough refills and the display indicates Add Chemical. Add the proper amount of ice machine sanitizer to the water trough by pouring between the water curtain and evaporator, then confirm the chemical was added.

Model	Amount of Sanitizer
IT0750WM/IT0900WM	3 oz (90 ml)
IT1900WM	6 oz (180 ml)

Step 14 Close and secure the front door. The ice machine will automatically start ice making after the sanitize cycle is complete (approximately 24 minutes).

Parts Removal for Detailed Descaling and Sanitizing

Single evaporator is shown; Each evaporator will have a distribution tube and water curtain/damper.

A. Remove the water curtain(s)

- Gently flex the curtain in the center and remove it from the right side.
- Slide the left pin out.

B. Remove the ice thickness probe

- Compress the hinge pin on the top of the ice thickness probe.
- Pivot the ice thickness probe to disengage one pin then the other. The ice thickness probe can be descaled and sanitized at this point without complete removal. If complete removal is desired, disconnect the ice thickness control wiring from the control board.

C. Remove the water trough

- Depress tabs on right and left side of the water trough.
- Allow front of water trough to drop as you pull forward to disengage the rear pins.

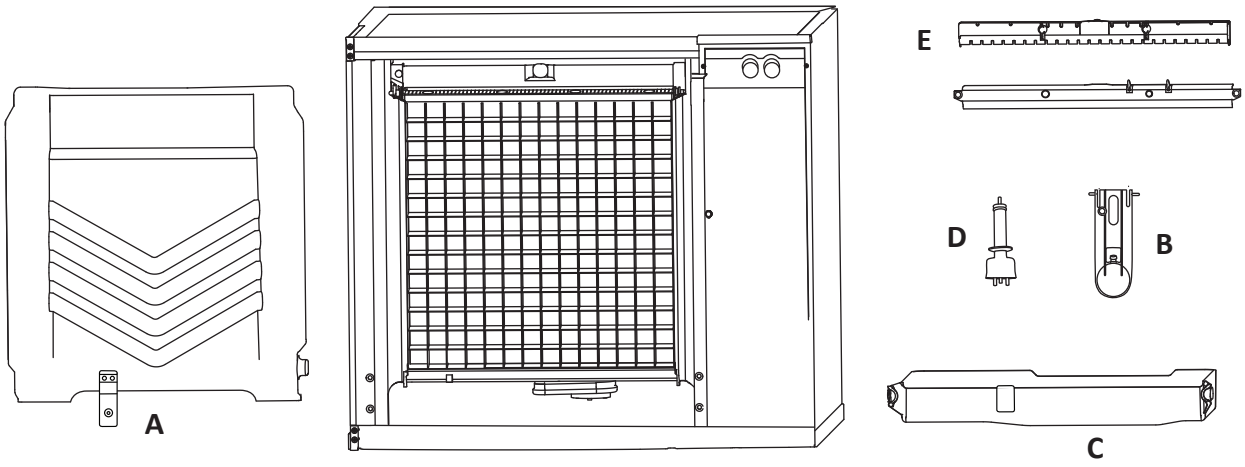
D. Remove the water level probe

- Pull the water level probe straight down to disengage.
- Lower the water level probe until the wiring connector is visible.
- Disconnect the wire lead from the water level probe.
- Remove the water level probe from the ice machine.

E. Remove the water distribution tube(s)

NOTE: Thumbscrews for the distribution tube are retained to prevent loss. Loosen thumbscrews, but do not pull thumbscrews out of distribution tube.

- Loosen the two outer screws (do not remove screws completely because they are retained to prevent loss) and pull forward on the distribution tube to release from slip joint.
- Disassemble distribution tube by loosening the two (2) middle thumbscrews and dividing the distribution tube into two pieces.



Remedial Descaling Procedure

This procedure descales all components in the water flow path, and is used to descale the ice machine between the bi-yearly detailed descaling and sanitizing procedure.

Ice machine cleaner/descaler is used to remove lime scale and mineral deposits. Ice machine sanitizer disinfects and removes algae and slime.

NOTE: Although not required and dependent on your installation, removing the ice machine top cover may allow easier access.

Step 1 Ice must not be on the evaporator during the clean/sanitize cycle. 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.

Notice

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

Step 2 Open the front door to access the evaporator.

Step 3 Press the Clean button and select "Make ice when complete". Water will flow through the water dump valve and down the drain. Wait approximately 1 minute until the water trough refills and the display indicates Add Chemical. Add the proper amount of ice machine descaler to the water trough by pouring between the water curtain and evaporator, then confirm the chemical was added.

Model	Amount of Descaler
IT0750WM/IT0900WM	5 oz (150 ml)
IT1900WM	9 oz (265 ml)

Step 4 Close and secure the front door. The ice machine will automatically start ice-making after the clean cycle is complete (approximately 24 minutes).

Removal from Service/Winterization

1. Descale and sanitize the ice machine.
2. Turn off the water supply, disconnect and drain the incoming ice-making water line and drain the water trough.
3. Energize the ice machine, wait one minute for the water inlet valve to open and blow compressed air in both the incoming water and the drain openings in the rear of the ice machine to remove all water.
4. Disconnect the incoming water and drain lines from the water-cooled condenser.
5. Insert a large screwdriver between the bottom spring coils of the water regulating valve and pry open the Water Regulating Valve.
6. Hold the valve open and blow compressed air through the condenser until no water remains.
7. Press the power switch and disconnect electrical power at the main disconnect/circuit breaker.
8. Fill spray bottle with sanitizer and spray all interior food zone surfaces. Do not rinse and allow to air dry.
9. Replace all panels.

THIS PAGE INTENTIONALLY LEFT BLANK

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 and/or condensing unit.	Replace the fuse/reset the breaker/turn on the main switch.
	High pressure cutout tripping.	Verify sufficient water supply to condenser.
	Energy Saver or other field entered programming is stopping ice machine.	Reset to factory defaults.
	Water curtain off or stuck open.	Water curtain must be installed and swinging freely.
	Disconnect switch is turned off or Ice machine is not turned on.	Place disconnect switch in the on position and press power button, display must indicate “Making Ice”.
Ice machine stops, and can be restarted by pressing the power switch.	Service Fault feature stopping the ice machine.	Refer to “Service Faults” on page 37.
Ice machine does not release ice or is slow to harvest.	Ice machine is dirty.	Descale and sanitize the ice machine. (See page 27)
	Ice machine is not level.	Level the ice machine.
	Low air temperature around ice machine head section.	Air temperature must be at least 35° (2°C).
	Water regulating valve incorrectly adjusted or will not close.	Check for water at condenser drain outlet in harvest cycle. Contact a qualified service company to adjust/replace valve if water is present.

Problem	Possible Cause	To Correct
Ice machine does not cycle into harvest mode.	The six-minute freeze time lock-in has not expired yet.	Wait for the freeze lock-in to expire.
	Ice thickness probe is dirty.	Descale and sanitize the ice machine. (See page 27)
	Ice thickness probe is disconnected.	Connect the probe to the control board.
	Ice thickness probe is out of adjustment.	Adjust the ice thickness probe. (See page 25)
	Uneven ice fill (thin at the top of evaporator).	Verify sufficient water level in sump trough. Contact a qualified service company to check refrigeration system.
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.	Descale and sanitize the ice machine. (See page 27)
	Water dump valve is not working.	Disassemble and clean the water dump valve.
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. (See page 25)
	Water trough level is too low.	Check the water level probe position.
	Water inlet valve filter screen is dirty.	Remove the water inlet valve and clean the filter screen.
	Water filtration is poor.	Replace the filter.
	Hot incoming water.	Connect the ice machine to a cold water supply. (See page 14)
	Water inlet valve is not working.	Replace the water inlet valve.
	Incorrect incoming water pressure.	Water pressure must be 20 psi - 80 psi (140 kPa - 550 kPa).
	Ice machine is not level.	Level the ice machine.

Problem	Possible Cause	To Correct
Low ice capacity.	Water inlet valve filter screen is dirty.	Remove the water inlet valve and clean the filter screen.
	Incoming water supply is shut off.	Open the water service valve.
	Water inlet valve stuck open or leaking.	Press the power button and turn off the ice machine, if water continues to enter water trough, replace the water inlet valve.
	The condenser has scale buildup.	Descale the condenser.
	The harvest assist air compressor is not functioning.	Call for service.

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 display reads “Off”. Press the power button again, and the display reads “Making Ice”.
   A. If a service fault 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 page 35.
2. Allow the ice machine to run to determine if the condition repeats.
   A. If the ice machine stops again, the condition has repeated. Call for service.
   B. If the ice machine continues to run, the condition has corrected itself. Allow the ice machine to continue running.

THIS PAGE INTENTIONALLY LEFT BLANK

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

800-545-5720
WWW.MANITOWOCICE.COM

©2022 Manitowoc Ice except where explicitly stated otherwise. All rights reserved. Continuing product improvement may necessitate change of specifications without notice.
Part Number: 000016036 Rev 01 07/22