

# Scotsman Ice Systems

## Installation and Operating Instructions

**NW-307 / 507 / 457 / 608 / 1008 / 1408 Models**

### Important Information

This equipment must be installed in accordance with all local, state, and national regulations. The machine must be installed correctly as per installation instructions. **This machine must be installed by a qualified Refrigeration or Electrical technician. A plumber should be used to make the water connections only.**

### THIS MACHINE IS NOT DESIGNED FOR OUTDOOR USE

**LOCATION** - This ice machine must be level and situated in a cool dry area with sufficient air ventilation. **The ice machine is NOT to be installed in a cupboard or with limited or restrictive airflow. The equipment should NOT be located next to equipment that discharges or radiates hot air on or near the ice machine. NOTE: Hotter working environments OR water temperatures will reduce the production capacity of the machine.** **Operating Specifications Below**

<b>Operating air temperatures</b>	<b>Min 10°C to Max 40°C (24°C ideal)</b>
<b>Operating water temperatures</b>	<b>Min 5°C to Max 35°C (18°C ideal)</b>
<b>Operating water pressure</b>	<b>Min 1 bar to Max 5 bar</b>
<b>Machine side clearance</b>	<b>Min 150mm</b>
<b>Machine rear clearance</b>	<b>Min 100mm</b>
<b>Machine top clearance</b>	<b>Min 400mm (NW307 / 507 models only)</b>

A water filter system must be fitted to the ice machine, this will help to reduce and control the buildup of sediment, scale, mineral and bacteria from accumulating inside the machine. The ice makers location should have a dedicated power point, a dedicated water supply and a water drainage point within one meter of the machine. **For the ice maker to operate effectively and efficiently the machine requires sufficient air ventilation. The machine requires a minimum side clearance of 150mm, a minimum rear clearance of 100mm (NW-307/507 top clearance min of 400mm)**

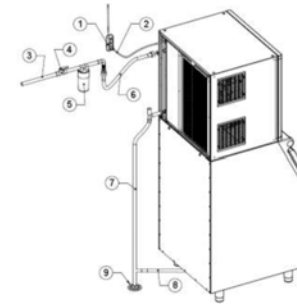


### IMPORTANT OPERATING REQUIREMENTS

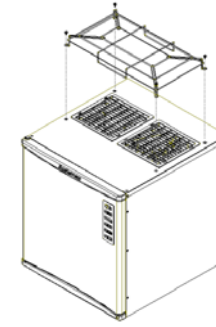
	MINIMUM	MAXIMUM
Air Temperature	10 °C(50°F)	40°C (100°F)
Water Temperature	5°C (40°F)	35°C (90°F)
Water Pressures	1 bar gauge	5 bar gauge
Electrical Voltage Variations	-10%	+10%
Electrical Voltage rating specified on nameplate		

**Contact Moffat Service Support On 1300 264 217 For Assistance**

**Set-Up** - For installation of an ice maker to an ice storage bin or to an ice dispenser. Fit legs to the ice storage bin or ice dispenser and set to minimum height, fit the water drain hose and hose clip to the underside water outlet of the bin / dispenser. Position the ice storage unit near its final location. Mount the ice maker head to the ice storage unit. Open the front panel of the ice maker and remove the manuals, water hoses, packaging, and red strapping tape. Remove the side panels and secure the ice maker head to the ice bin or dispenser. (side screws for ice bin and rear brackets and screws for dispenser) Ensure the internal parts are fitted and secured in their final operating positions (water trough, water pump, water curtain, ice probe or float, water distribution tube, etc.)



Fit the water supply hose and the water drain hose to their connection points at the rear of the ice maker using hoses supplied. Connect the water supply hose to the water filter outlet, attach the water drain hose to the floor drain or tundish.



Fit the steel deflector plate to (back right side) of the ice maker. This is to prevent recirculation of hot air back into the ice maker. **(On the NW307/507 models fit the wire frame to the top of the machine to prevent the discharge vents being covered)**

Maneuver the machine into its final position. **Ensure the ice machine has required side, rear, or top clearances.** Ensure the machine is level once in its final position. Remove the protective plastic from the panels of the machine and ice storage unit.

### Electrical Connections

The electrical connections for this machine must comply with all local, state, and national regulations. The ice maker requires a dedicated power point. Check the serial plate to ensure voltage requirements and plug are suitable for the wall socket and power supply for your local area. **All electrical connections and adjustments must be undertaken by a qualified technician.**

### 12 Point Checklist

- 1) Is the ice maker level and secure to the ice storage unit?
- 2) Is the ambient air temperature between 10c and 40c?
- 3) Is there the required 150mm side clearance, 100mm rear clearance and top ventilation clearances? (NW307/507) Is there any other equipment discharging hot air near or next to the machine?
- 4) Have the water connections been made and is the water pressure between 1 and 5 bars? Has the water pressure been tested?
- 5) Is the incoming water temperature between 5C and 35C?
- 6) Does the machine have a water filter fitted?
- 7) Do the electrical requirements comply and has the electrical connection been made? **DO NOT TURN ON THE MACHINE.**
- 8) Has all the packaging been removed from inside the ice machine?
- 9) Are all the internal components been fitted and secured correctly?
- 10) Has the owner been instructed on the operation and maintenance of the machine? Has the owner been given the installation instructions which include the maintenance schedule details?
- 11) Has the machine been cleaned and sanitized before starting up?
- 12) Does the customer have Moffat's service contact details?

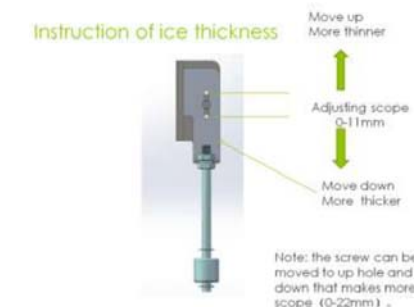
### Start Up

- 1) Open the water supply to the ice machine and check for water leaks.
- 2) Switch the power on at the wall socket.
- 3) The NW307/507/457/608 models will enter the startup mode. The PC Board will show the power ON (**green light on**) and the freezing and full bin lights will flash for 3 minutes while filling / purging water.

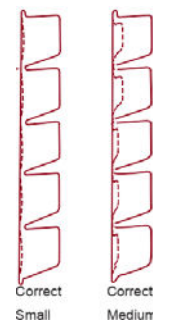
The NW1008 and NW1408 machines have a 90-minute start delay. These models have a crankcase heater in the compressor. If the temperature is above 25c, the PC Board will override the time delay. One can override the time delay by pressing the bypass switch on the rear of the ice machine.

- 4) After starting up mode the machine will enter the freezing mode. The refrigeration system will run, and the condenser fan will thermostat on and off during the cycle (**ice making green light on**) The water pump will run and circulates water over the evaporator. The water level sensors will monitor the water level and add water when required. After + - 15 to 24 minutes the ice thickness probe / float will put the ice machine into a harvest once it senses a full sheet of ice. The harvest mode will run for + - 60 seconds and will heat the evaporator until the ice drops into the ice bin.
- 5) When the ice drops into the ice bin the water curtain opens and then closes. The PC Board senses the ice drop and puts the machine back into a freeze cycle to make more ice. When the ice bin is full the water curtain is left in the open position, the PC Board senses the open circuit and shuts the machine down (**full bin orange light on**) until the ice bin level drops enough for the water curtain to close. The machine will restart after a three-minute delay.
- 6) Inspect the ice in the storage bin after the second drop of ice and if necessary, adjust the ice thickness float probe as per below diagram. **NOTE: The ice cubes must have a + - 3mm concave dimple in the back of each cube. The machine makes a slab of ice that breaks up when falling into the ice bin, not every ice cube will break up perfectly. If the ice thickness is set to thick the ice will not break up and if the ice is set to thin, the ice sheet is not fully formed and may shut the machine down. The machines require a full sheet of ice to drop off the evaporator (not individual pieces)**

### Ice Thickness Float Probe



### Ice Thickness Diagram



The ice thickness probe can be adjusted for thicker or thinner ice cubes. By carefully loosening the ice thickness float bracket screw, move the bracket up slightly (**for thinner ice**) or down slightly (**for thicker ice**) Take a photo of the bracket position before you make the adjustment. Only move the bracket 1mm at a time, check the ice thickness after the two drops of ice after the adjustment has been made.

**NOTE: The ice cubes should have a 3mm concave dimple on the back of the cube. The ice bridge connecting the ice cubes should be between 2mm and 3mm thick. Do not move the ice thickness bracket up or down more than 1mm at a time.**

**(Use a 6mm drill bit to set clearance between probe and evaporator.)**

**Contact Moffat Pty Ltd on 1300 264 217 for Assistance**

## Maintenance, Cleaning and Sanitizing Instructions

To ensure your Scotsman ice machine operates effectively, efficiently and in peak performance, the ice machine requires regular maintenance, cleaning, and sanitizing. **As per Health and Safety requirements in Australia, it is the owner's responsibility to ensure the ice machine is installed, maintained, and regularly cleaned as per the manufacturer's specifications. Ice is classed as a food product so the machine must be regularly inspected and maintained to ensure the ice is clean, safe, and fit for human consumption.**

### Cleaning Schedules

All Scotsman ice machines require a general clean and sanitize procedure every two weeks to a month (depending on the location of the machine)

All Scotsman ice machines require a major strip down, a deep clean and sanitizing twice a year by a qualified technician (depending on the location of the machine it may require more frequent cleaning)

### General Weekly or Monthly Clean

Shut down the machine, remove the air filter element and inspect and clean with a soft bristle brush. Inspect the condenser and gently clean with a soft bristle brush if necessary, replace the air filter.

Remove all the ice from the inside of the storage bin, clean the inside of the ice bin thoroughly with a cleaner and then sanitize the bin using Moffat ice machine sanitizer. Rinse the ice storage bin with water, **pour 1 liter of warm water and Moffat ice machine sanitizer down the ice bin drain to keep drain and drain hoses clean and free of bacteria. (Mixture 10 parts water and 1 part Moffat ice machine sanitizer)** Wipe down and clean the outside of the ice machine cabinet. (head and ice bin) thoroughly clean the ice bin door using disposable sanitizing wipes. Check the machine has the required 150mm side and 100mm rear clearance for maximum air ventilation. Check the water filter is not blocked and that the general area around the machine is clean and tidy. Turn the ice machine back on and discard the first 2 x batches of ice. Inspect the quality of the ice after two drops.

### Six Month Major Strip Down and Deep Clean

**A major strip down deep clean should only be performed by a qualified technician.**

First remove the air filter element from the machine. Inspect and clean with a soft bristle brush or gently wash with hot water and a soft sponge with cleaner, allow to dry completely. Inspect the condenser and gently clean with a soft bristle brush if required, replace air filter.

At the end of the harvest cycle shut down the ice machine. Remove ALL the ice from the ice storage bin. Remove the door screws and open the front door panel. Remove the water curtain, the water pump, the hoses, the water trough, the water distribution tube and dis-assemble, remove the water level sensor and the ice thickness probe.

Using Moffat's ice machine nickel safe cleaner, mix a bucket of hot water and Moffat cleaner. Thoroughly clean the inside of the ice machine food zone including the ice machine door. Clean the inside stainless-steel panels and evaporator plastic end panels. Using a long soft bristle brush gently clean the evaporator ensuring not to damage the plating (do not use anything abrasive that may damage the evaporator) Once cleaned thoroughly rinse off the evaporator and food zone with water. Using Moffat's ice machine sanitizer clean the evaporator and food zone panels thoroughly and rinse off with water.

Use the bucket of hot water and a soft bristle brush to clean the water curtain, water trough and water distribution tubes (pipe cleaning brush) and hoses. Carefully wash and clean the ice thickness probe and water level sensor probe. Do not use anything

abrasive on the probe sensors, rinse off with water and sanitize these parts carefully. Rinse off with water and dry thoroughly.

Carefully wash and thoroughly clean the water pump **DO NOT SUBMERGE THE WATER PUMP IN WATER OR CLEANER.** Allow the water pump to dry.

Reassemble the ice machine and double check all parts are re-fitted correctly.

Restart the ice machine and press the CLEAN button for 2-3 seconds on the touch pad. The machine will go into the clean mode (clean red light will flash quickly) Wait 30 seconds and then add the required amount of **Moffat nickel safe cleaner** to the water trough as per the quantities below. The water will circulate for 10 minutes cleaning the water circuit system and will then purge all water from the trough.

### WARNING

**Only use Moffat's Nickel Safe ice machine cleaner for all Scotsman ice machines. Using a non-nickel safe cleaner will DAMAGE the nickel-plating on the evaporator.**

- A) NW-307 / 308 - 185 ml
- B) NW-507 / 508 - 210 ml
- C) NW-457 / 458 / 608 - 250 ml
- D) NW-1008 / 1408 - 350 ml
- E) Sanitizer mixture – 1 x liter of water to 100 ml sanitizer (10 parts to 1)

**The machine will re-fill the water trough and rinse 10 times and will stop.** The clean red mode light will flash slowly to signal the end of the clean mode. Press the CLEAN button again and the machine will start in normal ice making mode.

Wipe down the outside of the machine cabinet and storage bin using disposable cleaning wipes. Wash the inside of the ice storage bin using the remainder of the hot water and cleaner, rinse the inside of the bin with water. Pour the remainder of the water / sanitizer mixture down the drain to keep the drain and drain hose clean and free of bacteria.

Allow the machine to make 2 x batches of ice and inspect the ice cubes, adjust thickness if necessary. Discard the first 2 drops of ice to ensure the ice is clean and free of any cleaner or sanitizer.

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**Ice machine error codes are located inside the front door panel.**

## How an Ice Machine Works

An ice machine works by transferring heat from the water inside the ice machine, to the condenser through the refrigeration system. The condenser fan exhausts this heat out and away from the ice machine. The transfer of heat is so efficient that it freezes the water into the evaporator mold making ice cubes.

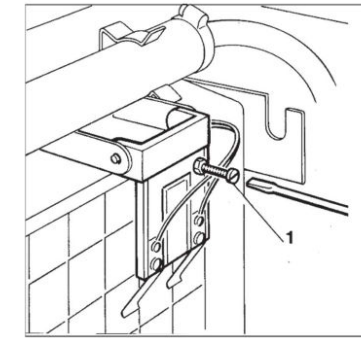
NOTE: If the airflow is restricted or blocked on either the air inlet or air outlet vents the heat transfer process will not take place. This means the ice machine will make little or no ice. It requires good cool airflow through the machine to operate effectively and efficiently.

Ensure there is NO heat generating equipment next to or close by the ice machine. The hotter the work area and water temperature is going into the machine, the less ice the machine will make.

## Warranty Details, terms and conditions

Warranty issues are all subject to Moffat Pty Ltd.'s standard terms and conditions. To view Moffat's terms and conditions, please visit the Moffat web site on [www.moffat.com.au](http://www.moffat.com.au)

### (OLD STYLE NW MACHINE - ICE THICKNESS SENSOR ADJUSTMENT) Ice Thickness Sensor



The ice thickness probe can be adjusted for thicker or thinner ice cubes by screwing the adjusting screw (1) clockwise for thicker ice or for thinner ice counterclockwise. **NOTE: Ensure the ice cubes have a 3mm concave dimple on the back of the cube. The ice bridge connecting the ice cubes should be between 2mm and 3mm thick. Never turn the adjusting screw more than ¼ of a turn at time.**