



CORNELIUS INC

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# Owner / Operator Use and Care Guide “I” SERIES 224 ICE CUBE MACHINE

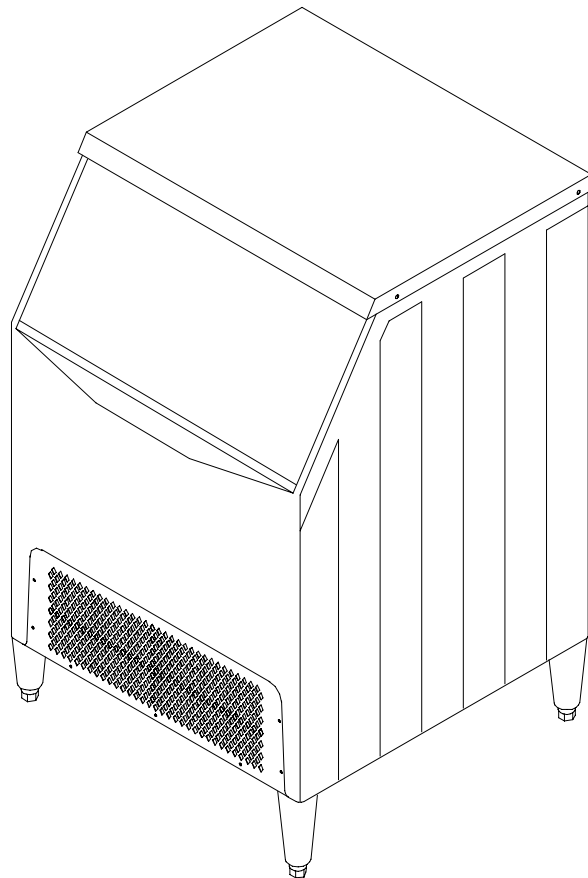
THE HOTTEST MACHINES ON ICE™

## **IMPORTANT:**

### **TO THE INSTALLER.**

It is the responsibility of the Installer to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112.1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed, and maintained according to Federal, State, and Local Codes.



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### **THIS DOCUMENT CONTAINS IMPORTANT INFORMATION**

This Manual must be read and understood before installing or operating this equipment



# TABLE OF CONTENTS

|                                                                                                    | Page     |
|----------------------------------------------------------------------------------------------------|----------|
| <b>SAFETY INFORMATION</b> .....                                                                    | <b>1</b> |
| RECOGNIZE SAFETY INFORMATION .....                                                                 | 1        |
| UNDERSTAND SIGNAL WORDS .....                                                                      | 1        |
| FOLLOW SAFETY INSTRUCTIONS .....                                                                   | 1        |
| CO2 (CARBON DIOXIDE) WARNING .....                                                                 | 1        |
| SHIPPING, STORING, OR RELOCATING UNIT .....                                                        | 1        |
| <b>GENERAL DESCRIPTION</b> .....                                                                   | <b>2</b> |
| MODEL AND SERIAL LOCATION .....                                                                    | 2        |
| “I” SERIES CUBER .....                                                                             | 2        |
| <b>WARRANTY</b> .....                                                                              | <b>3</b> |
| WARRANTY COVERAGE .....                                                                            | 3        |
| <b>OWNER’S RECOMMENDED MAINTENANCE</b> .....                                                       | <b>4</b> |
| SEMI-ANNUAL MAINTENANCE .....                                                                      | 4        |
| GENERAL ICE MACHINE INSPECTION .....                                                               | 4        |
| CLEANING THE EXTERIOR .....                                                                        | 4        |
| CLEANING THE CONDENSER .....                                                                       | 4        |
| CLEANING THE INTERIOR .....                                                                        | 5        |
| PREP CLEAN .....                                                                                   | 5        |
| SANITIZING PROCEDURES .....                                                                        | 6        |
| <b>TROUBLESHOOTING</b> .....                                                                       | <b>7</b> |
| BEFORE CALLING FOR SERVICE .....                                                                   | 7        |
| ICE MACHINE DOES NOT OPERATE .....                                                                 | 7        |
| ICE MACHINE STOPS AND CAN NOT BE RESTARTED BY TURNING POWER<br>SWITCH OFF THEN BACK ON AGAIN ..... | 7        |
| ICE MACHINE DOES NOT RELEASE ICE OR IS SLOW TO HARVEST .....                                       | 7        |
| POOR QUALITY ICE. (ICE SOFT OR NOT CLEAR ) .....                                                   | 7        |
| SAFETY LIMIT FEATURE .....                                                                         | 8        |



# SAFETY INFORMATION

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## Recognize Safety Information

This is the safety-alert symbol. When you see this symbol on our machine or in this manual, be alert to the potentially of personal injury.

Follow recommended precautions and safe operating practices.



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## Understand Signal Words

A signal word - **DANGER**, **WARNING**, OR **CAUTION** is used with the safety-alert symbol. **DANGER** identifies the most serious hazards.

Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.



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## Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Learn how to operate the machine and how to use the controls properly. Do not let anyone operate the machine without instructions. Keep your machine in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect the machine life.

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## CO<sub>2</sub> (Carbon Dioxide) Warning

**CO<sub>2</sub> Displaces Oxygen.** Strict Attention *must* be observed in the prevention of CO<sub>2</sub> (carbon dioxide) gas leaks in the entire CO<sub>2</sub> and soft drink system. If a CO<sub>2</sub> gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO<sub>2</sub> gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

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## Shipping, Storing, Or Relocating Unit

**CAUTION:** Before shipping, storing, or relocating this Unit, the syrup systems must be sanitized and all sanitizing solution *must* be purged from the syrup systems. All water *must* also be purged from the plain and carbonated water systems. A freezing ambient temperature will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

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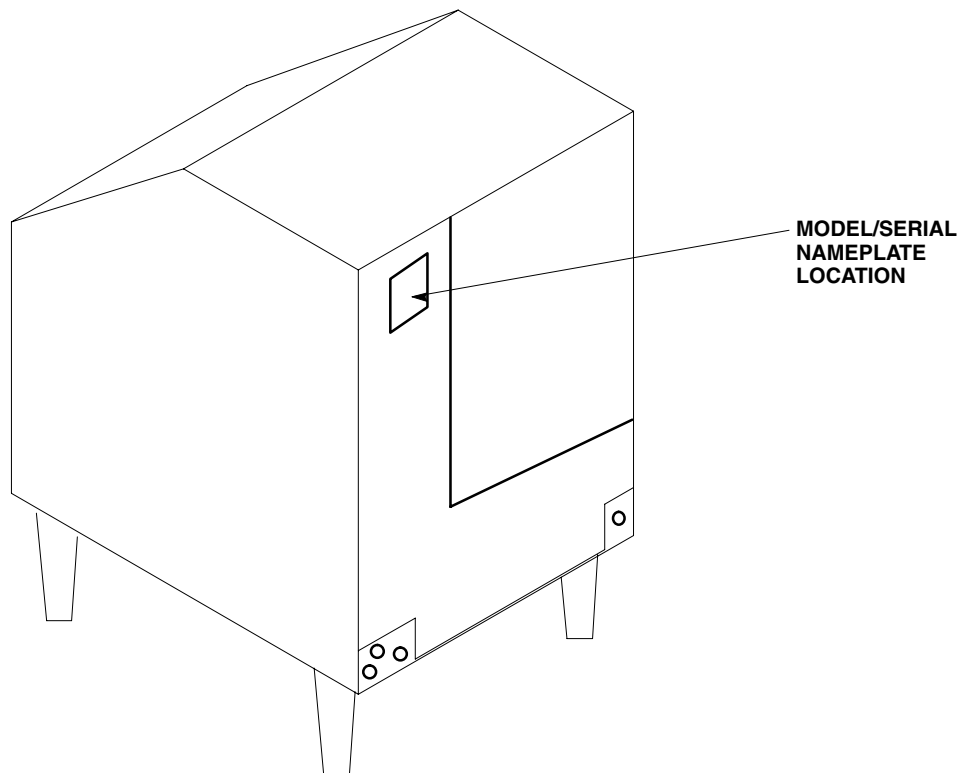
# GENERAL DESCRIPTION

This section gives the Unit description, theory of operation, and design data for

**IMPORTANT: *To the user of this manual*** – This manual is a guide for installing, operating, and maintaining this equipment. Refer to the Table of Contents for page location for detailed information pertaining to questions that arise during installation, operation, service, or maintenance of this equipment.

## MODEL AND SERIAL LOCATION

### “I” Series Cuber



Record the model number and serial number of your ice equipment. These numbers are required when requesting information from your local dealer/distributor/service company.

Model Number —

Date installed

Serial Number —

Purchased From —

# WARRANTY

Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius product, in your country, please write, fax or telephone the Cornelius office nearest you ([www.cornelius.com](http://www.cornelius.com)). Please provide the equipment model number, serial number and the date of purchase.

## WARRANTY COVERAGE

The following warranty outline is provided for your convenience. For full details, read the warranty bond at the back of this manual.

### Exclusions from the Warranty Coverage

The following items are not included in the ice machine 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.
3. Damage caused by improper installation of the ice machine, electrical supply, water supply or drainage; 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 inaccessibility to the ice machine 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 the Installation Manual and this Owner/Operator Use and Care Guide.

# OWNER'S RECOMMENDED MAINTENANCE

## SEMI-ANNUAL MAINTENANCE

1. GENERAL ICE MACHINE INSPECTION
2. CLEANING THE EXTERIOR
3. CLEANING THE CONDENSER-AIR – COOLED
4. INTERIOR CLEANING-CLEANING PROCEDURES, SANITIZING PROCUDURES

### General Ice Machine Inspection

1. Check all water fittings and tubes for leaks. Also, make sure the refrigeration tubing is not rubbing or vibrating against other tubing panels, etc.
2. Do not stack anything ( boxes, etc.) on or around the ice machine.
3. Do not cover the ice machine while it is operating. There must be adequate air flow through and around the ice machine to ensure long component life and adequate ice production.

### Cleaning the Exterior

1. Clean the area around the ice machine as often as necessary to maintain cleanliness and efficient operation.
2. Sponge dust and dirt off the outside of the ice machine with mild soap and water. Wipe dry with a soft clean cloth.



**WARNING:** Stainless steel panels should be cleaned with mild soap or a commercial stainless steel cleaner. Do not use cleaners containing bleaching agents; they usually contain chlorine which stains stainless steel. Heavy stains should be removed with stainless steel wool. Never use plain steel wool or abrasive pads because they will scratch the panel and cause rusting.

### Cleaning the Condenser



**CAUTION:** Disconnect electric power to the ice machine at the electric service switch box before cleaning condenser !

#### Air-Cooled Condenser

A dirty condenser restricts airflow which results in excessively high operating temperatures. High operating temperatures reduces ice production and shorten component life. Clean the condenser at least every six months.



**CAUTION:** Condenser fins are sharp. Use care when cleaning them.

1. Clean the outside of the condenser with a soft brush or vacuum with a brush attachment. Brush or wash condenser from top to bottom not from side to side. Be careful not to bend the fins. Shine a flashlight through the condenser to check for dirt between the fins.
2. If further cleaning is required, blow compressed air through the condenser from the inside. Take care not to bend the fan blades. Shine flashlight through the condenser to check that all the dirt is removed.

**IMPORTANT: Any bent condenser fins must be straightened with a fin comb. Contact your local service agent to do this service.**

#### Water-Cooled Condenser (and regulating valve)

The water-cooled condenser and water regulating valve may require cleaning due to scale build-up.

Low ice production, high water consumption, and high operating temperatures and pressures all may be symptoms of restrictions in the condenser water circuit.

**IMPORTANT: The cleaning procedures require special pumps and cleaning solutions and, therefore, should be performed by qualified maintenance or service personnel.**

### **Cleaning the Interior**

Approved ice machine cleaner by brand name:

- Calgon Nickel Safe ( green color only )

**NOTES: Failure to use approved product will void the warranty.**



**CAUTION: Ice machine cleaners are acidic-based chemicals. Before beginning any cleaning of the cuber, the ice in the storage bin or dispenser must be removed.**

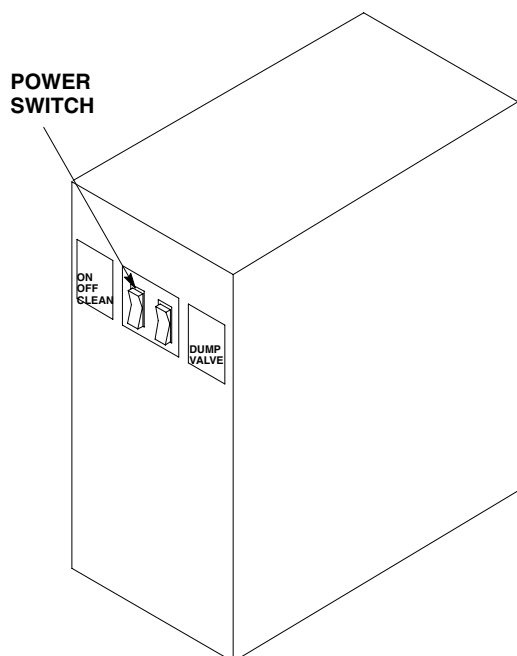


**WARNING: When using any chemical, rubber gloves and eye protection should be worn.**

### **Prep Clean**

Use full-Strength ice machine cleaner on a coarse surface material ( such as terry cloth ) and wipe down the inside wall of the evaporator area, the water pan, the water curtain and evaporator plastic extrusions. If the water distributor tube has heavy scale build-up, remove and soak it in full-strength ice machine cleaner (or exchange the tube and clean the scaled tube at later date).

## Cleaning the Water System & Evaporator



1. Set the switch to CLEAN and allow the ice on the evaporator to release and melt away.
2. Remove all ice from the storage bin.
3. Add 3 oz. for a single evaporator of "Calgon Nickel-Safe" ice machine cleaner directly into the water pan. Set switch to CLEAN, circulate for a maximum of 15 minutes.
4. Depress and hold the dump switch to allow the cleaner to drain away.
5. Fill the water pan with fresh water, circulate for approximately 3 minutes. Depress the DUMP switch and allow the water to drain away. Repeat this procedure 3 times.
6. After third rinse cycle, place product power switch in on position. Allow product to produce one slab of ice——DISCARD THE ICE.
7. When clean cycle is complete, return cuber to normal operating mode.

**Note: Please Take Note of the following:**

- Ice machine should only be cleaned when needed, not by a timed schedule of every 60 days, etc.
- Should your ice machine require cleaning more than twice a year, consult your distributor or dealer about proper water treatment.

## **SANITIZING PROCEDURES**

**NOTE: To be performed only after cleaning the ice machine:**

1. \*Add 1/4-ounce (7.08 g) sodium hypochlorite solution ( common liquid laundry bleach ) to the water pan and allow the pump to circulate the solution for 5 minutes. You may also use a commercial sanitizer such as Calgon Ice Machine Sanitizer following the directions on the product label.
2. Turn the product power switch off. Depress and hold the dump switch to drain the water pan.
3. To sanitize the bin and other surface areas, use 1 ounce of liquid bleach per gallon of water and wipe all areas with the solution. Or use a commercial sanitizer.
4. Place the product power switch in the on position. Discard the first batch of ice produced.
5. Cleaning and sanitizing are now complete. Product may be returned to normal service.

**\*Make certain the water curtains are correctly positioned before operating the water pump.**

# TROUBLESHOOTING

**IMPORTANT:** Only qualified personnel should service internal components or electrical wiring.



**WARNING:** If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO<sub>2</sub> system, stop dispensing, shut off the CO<sub>2</sub> supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

## BEFORE CALLING FOR SERVICE

If a problem arises during the operation of your ice machine, follow the checklist below before calling for service.

| Trouble                                                                                   | Probable Cause |                                                                                        | Remedy                                                                                                     |
|-------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| ICE MACHINE DOES NOT OPERATE                                                              | A.             | No electrical power to ice machine.                                                    | A. Replace fuse, reset circuit breaker, turn on main switch.                                               |
|                                                                                           | B.             | Tripped high pressure cutout.                                                          | B. Reset high pressure cut-out.                                                                            |
|                                                                                           | C.             | ON/OFF/CLEAN switch set improperly.                                                    | C. Set switch at ON.                                                                                       |
|                                                                                           | D.             | Ice harvest switch stuck open.                                                         | D. Switch must swing freely.                                                                               |
| ICE MACHINE STOPS AND CAN NOT BE RESTARTED BY TURNING POWER SWITCH OFF THEN BACK ON AGAIN | A.             | Safety limit feature stopping ice machine.                                             | A. Refer to safety limit feature.                                                                          |
|                                                                                           | B.             | Bin thermostat closed                                                                  | B. Refer to safety limit feature.                                                                          |
| ICE MACHINE DOES NOT RELEASE ICE OR IS SLOW TO HARVEST                                    | A.             | Ice machine evaporator dirty.                                                          | A. Clean the evaporator, the water system and sanitize ice machine.                                        |
|                                                                                           | B.             | Ice machine not level.                                                                 | B. Level ice machine.                                                                                      |
|                                                                                           | C.             | Air-cooled models: low ambient.                                                        | C. Minimum ambient is 50°F                                                                                 |
|                                                                                           | D.             | Water regulating valve leaking during harvest mode.<br>(Water-cooled ice machine only) | D. Refer to water-cooled condenser.                                                                        |
| POOR QUALITY ICE. (ICE SOFT OR NOT CLEAR )                                                | A.             | Quality of incoming water.                                                             | A. Contact qualified service company to test quality of water and make appropriate filter recommendations. |
|                                                                                           | B.             | Water filtration element needs to be changed.                                          | B. Replace filter.                                                                                         |
|                                                                                           | C.             | Ice machine dirty.                                                                     | C. Clean and sanitize ice machine, see pages 5 & 6.                                                        |
|                                                                                           | D.             | Water dump valve not working.                                                          | D. Disassemble and clean the water dump valve.                                                             |
|                                                                                           | E.             | Water softener working improperly (if installed).                                      | E. Repair water softener.                                                                                  |

## SAFETY LIMIT FEATURE

In addition to standard safety controls such as the high pressure cut-out, your ice machine features built-in safety limits that stop the ice machine if conditions exist that may result in a major component failure.

**NOTE: Before calling for service, restart the ice machine using the following procedures:**

1. Turn power switch off and then back to ICE MAKING ( ON ) position. If the safety limit feature has stopped the ice machine, it will restart after a short delay. Proceed to Step 2, but if the ice machine does not restart, refer to "Ice Machine Does Not Operate" in the problem checklist.
2. Let the ice machine operate to determine if the condition recurs...
  - A. If the ice machine stops again, the condition recurred; call for service.
  - B. If the ice machine continues to run, the condition corrected itself; let the machine run.



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