

INTRODUCTION

This service manual is intended as a reference for the installer, user, and service agent of this Scotsman Ice Station. It includes the necessary information to install, start up, operate, clean and maintain this unit.

TABLE OF CONTENTS

Specifications	Page 2
Installing Loose Shipped Parts	Page 3
For the Installer	Page 4
Initial Start Up	Page 6
How it Works	Page 7
For the Operator	Page 8
Cleaning & Sanitizing	Page 9
Service Diagnosis	Page 11
Electrical Sequence	Page 11
Repair	Page 12

Parts lists and wiring diagrams are located in the center of this manual, printed on yellow paper.

This manual contains important information, read it before beginning installation or operation. Keep it for future reference.

Safety Symbol:

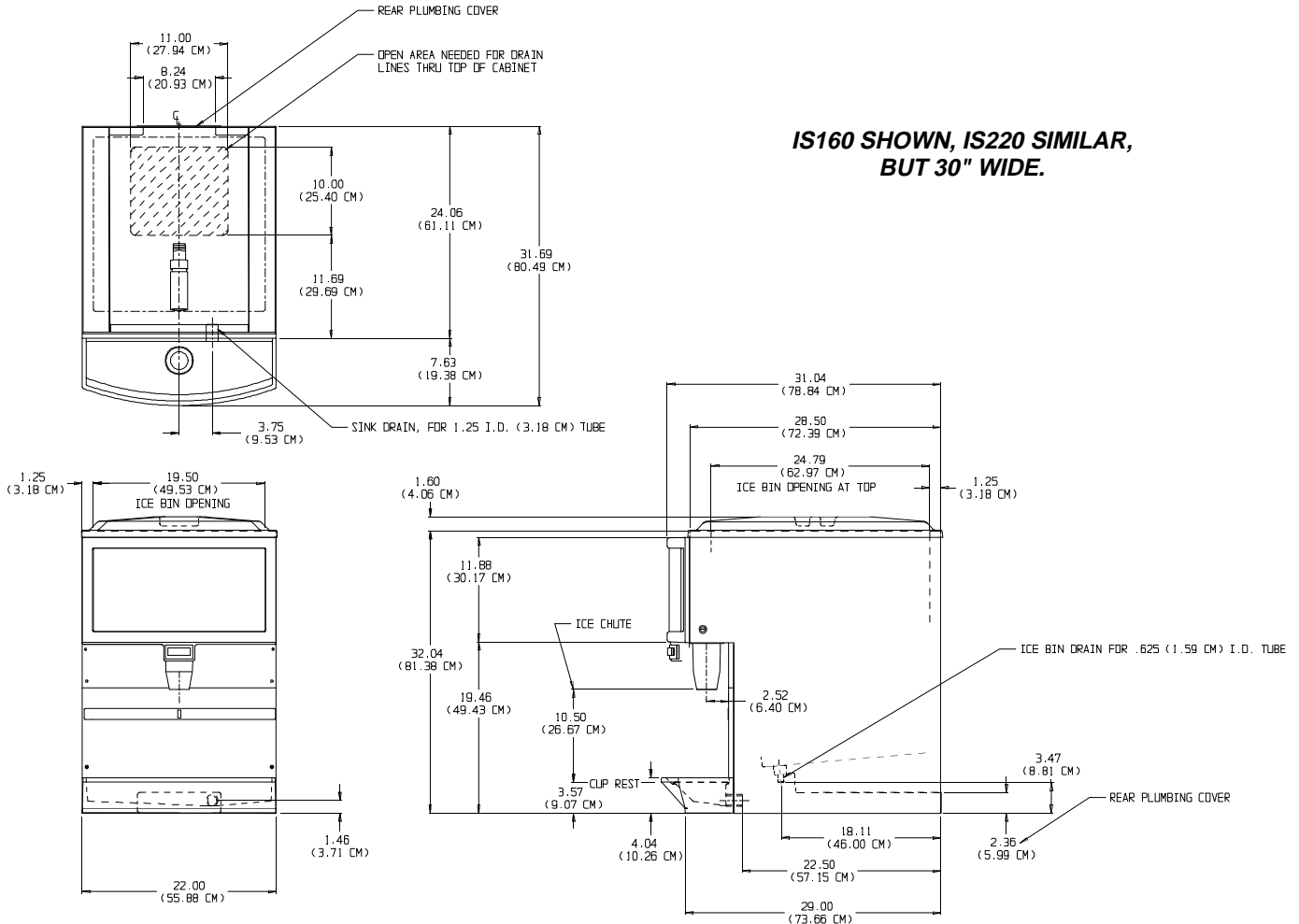


Important safety information on a hazard that might cause serious injury.

IS160 and IS220 SPECIFICATIONS

The term "Ice Station" means a machine that stores manually filled ice in an insulated, sanitary container; upon demand it dispenses that ice into a cup or glass.

NOTE: This ice stand is designed to dispense cubed ice only. **Flaked or Nugget ice will not work.**



**IS160 SHOWN, IS220 SIMILAR,
BUT 30" WIDE.**

Base Model	Width	Storage Capacity*	Basic Electrical	Amperage	Power Cord
IS160-1A	22"	160 lbs	115/60/1	2 amps	4' with plug
IS220-1A	30"	220 lbs	115/60/1	2 amps	4' with plug

Rotor motor is 1/10 H.P. *Note: Not all ice is dispensed.

Options: Push button actuation (factory installed).

Scotsman Ice Systems are designed and manufactured with the highest regard for safety and performance. They meet or exceed the standards of U.L., and N.S.F.

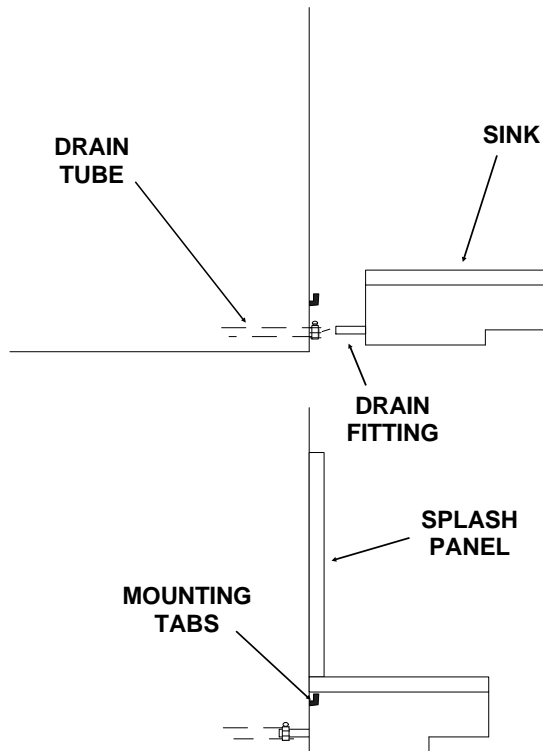
Scotsman assumes no liability or responsibility of any kind for products manufactured by Scotsman that have been altered in any way, including the use of any parts and/or other components not specifically approved by Scotsman.

Scotsman reserves the right to make design changes and/or improvements at any time. Specifications and designs are subject to change without notice.

FOR THE INSTALLER: Installation of Loose Shipped Parts

Sink:

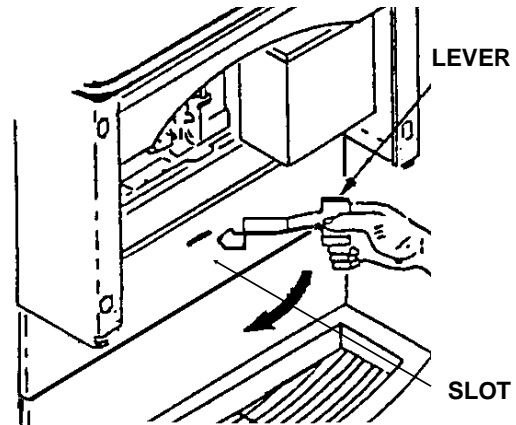
1. Remove splash panel from unit.
2. Slip a worm drive clamp over the drain tube as shown.
3. Hold the drip tray up at an angle of about 30°. Slide the drain fitting into the drain tube.



4. Tighten the worm-drive clamp.
5. Hang the drip tray onto the mounting tabs at the base of the unit. Replace the splash panel.

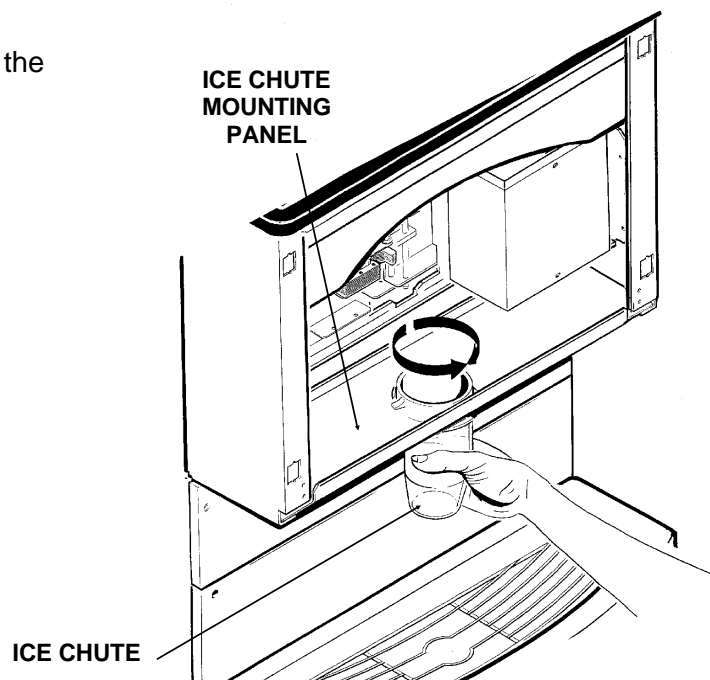
Ice Lever*, Ice chute, and Fluorescent Tube

1. Slide out the ice chute mounting panel.
2. Insert the ice lever into the slot as shown.
3. Swing the lever through the slot from right to left and let it hang freely.



4. Twist the fluorescent tube into the sockets.
5. Replace the ice chute mounting panel.
6. Insert the ice chute into the panel and twist clockwise 1/3 turn.
7. Attach the upper front cover by pushing the strikes on the cover into the catches on the unit.

* Optional depending upon unit configuration.



IS160 and IS220

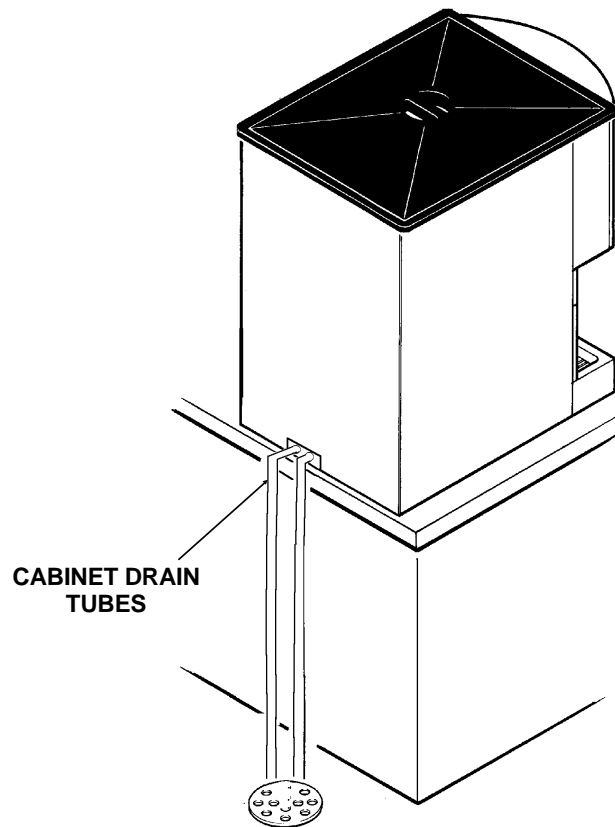
FOR THE INSTALLER

1. Locate the Ice Station on the counter. Allow vertical clearance above unit for the removal of the cover, and for pouring ice into the hopper.

2. Plan the unit drain. Two tubes ($\frac{5}{8}$ " and $1\frac{1}{4}$ " I.D.) are required for draining. Routing is either thru the back or base. Sufficient fittings are included with the unit to install in most cases.

3. In order to comply with National Sanitation Foundation (NSF) requirements, this unit must be either elevated above the counter top sufficiently to provide space for cleaning under the unit **or** sealed to the counter top.

Elevating the unit may be accomplished by using the legs. They will screw into threaded holes in the base of the unit.



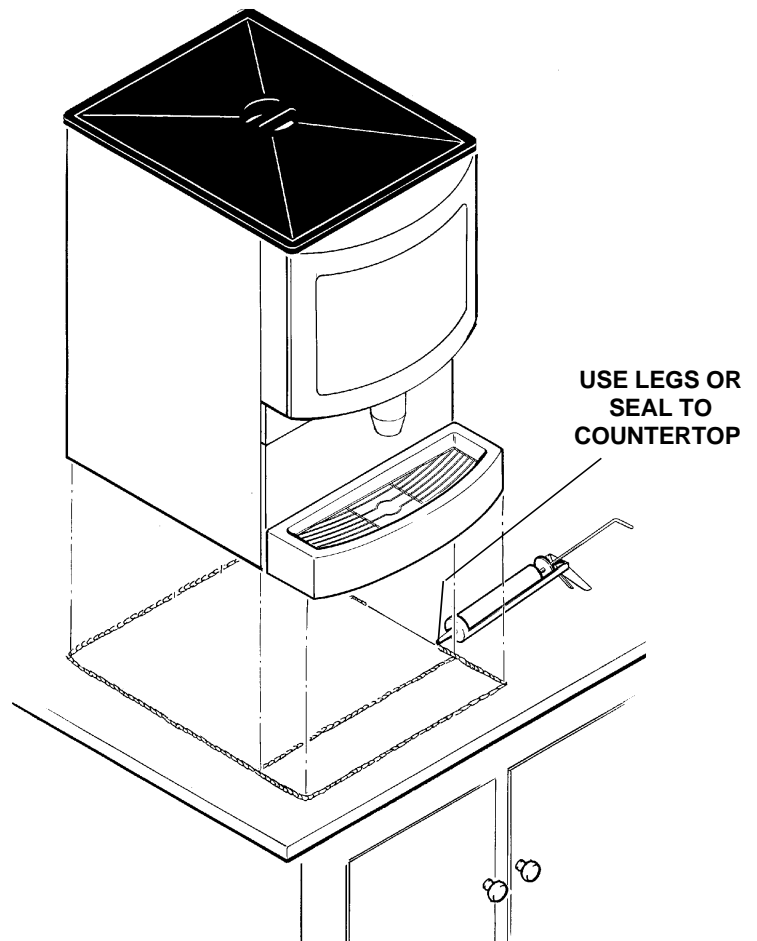
Installation: Sealing Unit

If the unit is to be sealed to the counter top, the drain tubing should be available and planned such that the connections may be finished after the unit has been sealed to the counter.

Sealing may be accomplished by the use of room temperature vulcanizing (RTV) rubber sealant such as General Electric IS 808 Industrial Sealant, Dow Corning 731 (Scotsman part number 19-0529-01) or the equivalent.

With the unit located on the counter as desired:

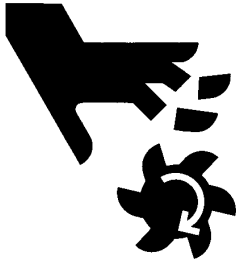
- A. Tilt or lift the unit to expose the bottom flanges of the base frame.
- B. Apply the sealant to cover the bottom flanges of the base frame.
- C. Return the unit to the desired position on the counter top.
- D. Add sealant around the base frame and counter top to provide a seal with a radius of 1/2". Follow the sealant manufacturer's instructions on the package for working with the sealant, and cleaning up.
- E. Seal around all access holes in the counter top with Permagem or Mortite caulk or an equivalent material.



IS160 and IS220

INITIAL START UP

1. Sanitize the ice storage system as instructed on page 9.
2. Fill hopper with sanitary ice.

	<p>⚠ WARNING</p> <p>Ice hopper contains parts that can move at any time, and will cause injury if hands are in the way.</p> <p>Do not remove cover until the unit has been unplugged from the electrical power.</p>
---	---

3. Plug the unit's power cord into an electrical outlet and the lighted sign should come on. Dispense several containers of ice.

Note: there is a timer in the control box that will activate the rotor in the ice bin every two hours. The amount of time that the rotor turns is factory set at 2 seconds, and is adjustable between one tenth of a second and 4 seconds. Agitation of the ice keeps it from fusing together after long periods in the bin.

FOR THE OPERATOR

This section covers operating controls, daily pre-operation check, and unit operation.

OPERATING CONTROLS - Units have **either** a lever **or** a push button.

Lever: Ice will continue to be dispensed for as long as the lever is held in, or until the hopper is empty.

Push Button: When the ice dispense button is pushed, ice will be dispensed for as long as the button is held in or until the hopper is empty.

Daily Check

1. Make sure drip tray and grill are clean.
2. Remove cover and pour sanitary ice into the hopper.

Do NOT use bagged ice directly from a freezer. The ice **must** be broken up in the bags first before adding to the hopper.

Large chunks of ice can NOT be dispensed.

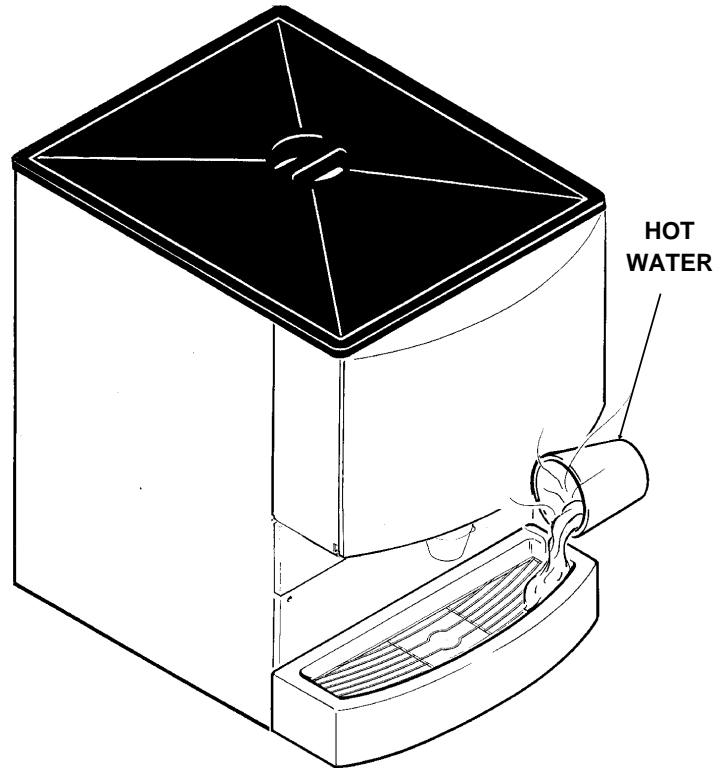
The dispenser must always contain ice to have ice available for use.

Keep the cover in place, and check the ice supply regularly during operating hours.

3. Keep sink clear of spilled ice.

4. At the end of the day:

Remove the grill from the sink, clean the sink, grill and splash panel, make sure the sink drain is open by pouring hot water into the sink. Return the grill to the sink.



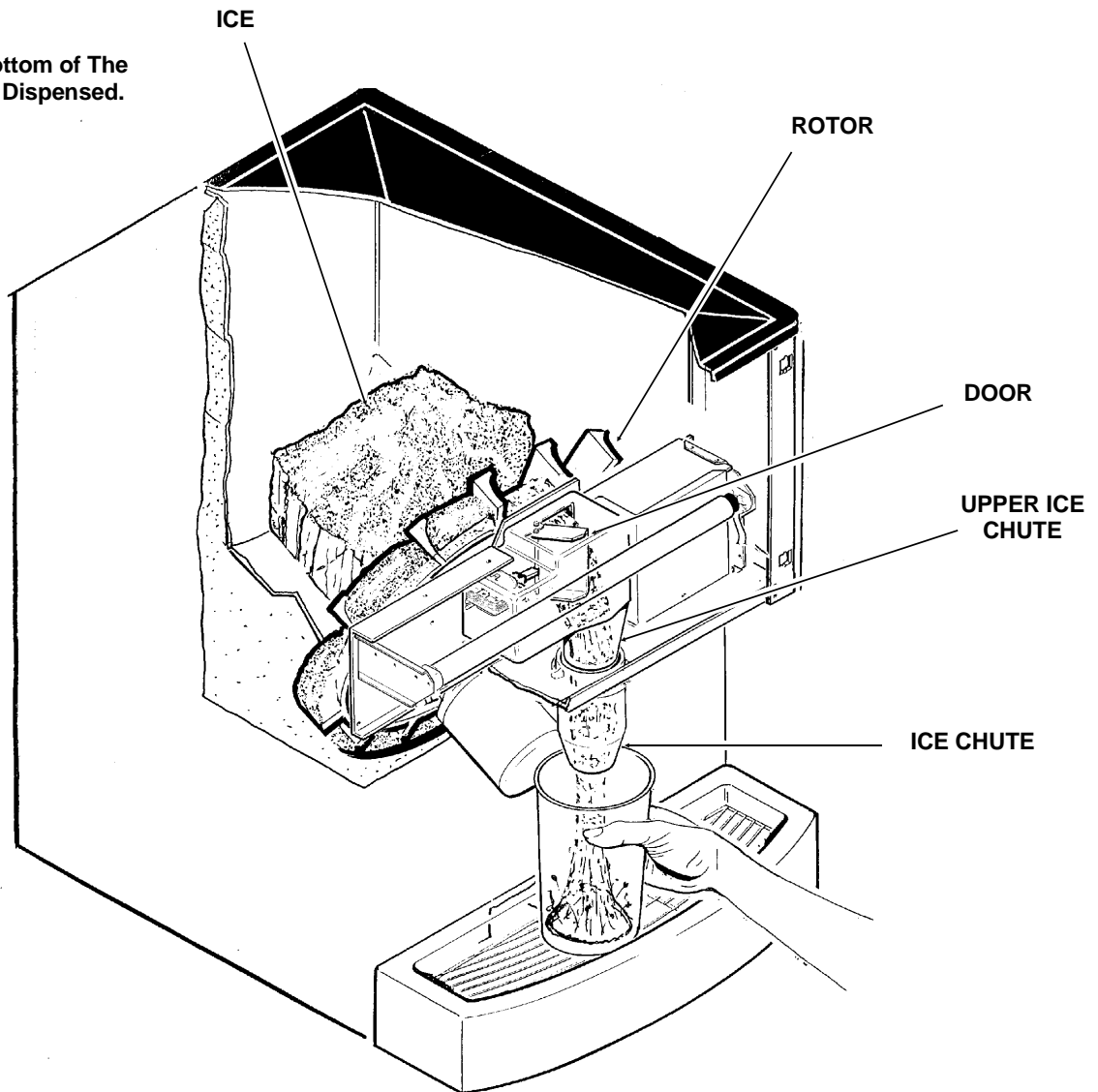
IS160 and IS220

HOW IT WORKS

The ice is stored in a hopper. At the front of the hopper there is an angled rotor: when that rotor turns, it scoops the ice, lifts it to the top of the ice chute and drops it through that chute into the user's container.

CUT AWAY VIEW

Note: Ice On The Bottom of The Hopper Will Not Be Dispensed.



CLEANING AND SANITIZING

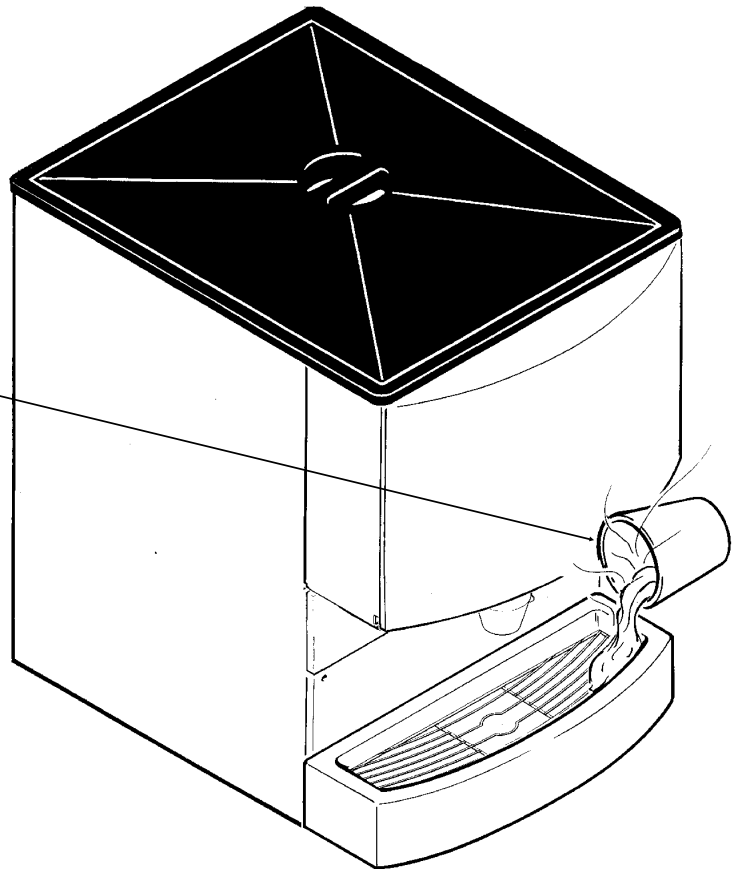
The sink, grill and splash panel area should be cleaned daily.

The ice storage system should be sanitized monthly.

Daily:

1. Lift up and remove grill from sink.
2. Use soap, hot water, and a clean cloth to wash sink and splash panel; rinse with hot water, allowing plenty of hot water to run down the drain.
3. Wash the grill, then rinse with clean water. Place back in sink.
4. Clean all exterior surfaces of the unit with warm water and a sponge. Rinse out the sponge with clean water, wring excess water out of the sponge, and wipe off external surfaces of the unit. Wipe unit with a clean soft cloth. Do NOT use abrasive type cleaners.

POUR HOT WATER
DOWN SINK TO CLEAN
OUT DRAIN.



IS160 and IS220


CLEANING AND SANITIZING

MONTHLY & INITIAL START UP:

Sanitize the Ice Storage System.

Note: this should only be done by qualified personnel.

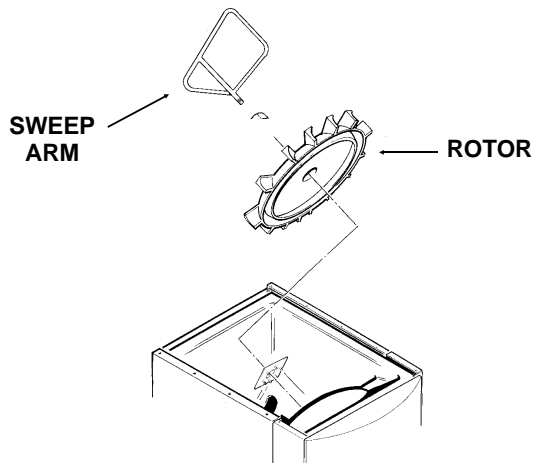
1. Unplug the Ice Stand's electrical cord from the electrical power.

	<p>⚠ WARNING</p> <p>Ice hopper contains parts that can move at any time, and will cause injury if hands are in the way.</p> <p>Do not remove cover until the unit has been unplugged from the electrical power.</p>
---	---

2. Remove cover and discard all remaining ice.

3. Mix a solution of 1 ounce of household bleach to 2 gallons of potable water, or: mix a solution of any approved sanitizer, following the directions for mixing and applying that sanitizer.

4. Remove the ice chute (if used) by lifting one end and pulling out of the slots. Unscrew the sweep arm from the rotor shaft, and pull the rotor from hopper.



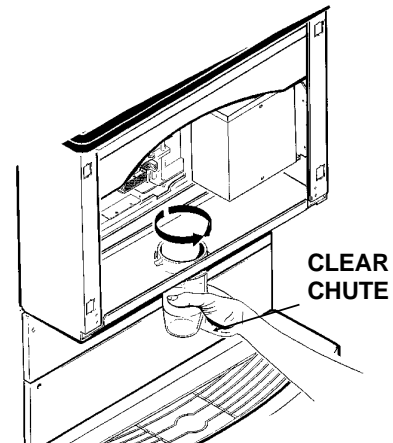
5. Using a clean cloth or sponge, wipe all interior surfaces of the ice storage hopper with the sanitizing solution, allow to air dry.

6. Wipe all surfaces of the rotor (plus ice chute, shield and bearing if used) with the sanitizing solution, and allow to air dry.

7. Lift up & out and remove the upper front panel.

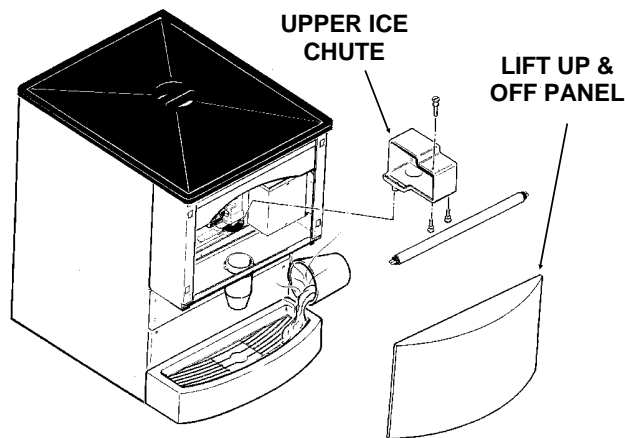
A. Twist the clear ice chute 1/3 turn, and pull down to remove.

B. Locate the two thumb screws holding the upper ice chute; remove them (1 on top and 1 below). Remove the upper ice chute from the machine.



Thoroughly wipe the surfaces of the bin door and both ice chutes with the sanitizing solution, and allow to air dry.

Place the upper ice chute back onto the dispenser, secure with the three thumb screws.



Place the clear ice chute back onto dispenser. Place the upper front panel back onto the machine.

8. Wipe the inside surface of the cover with the sanitizing solution, and allow to air dry.

9. Reassemble the rotor and hopper, re-wipe the surfaces of the rotor and allow to air dry.

10. Wipe the top edge of the ice hopper with the sanitizing solution, allow to air dry.

11. Pour in fresh, sanitary ice and replace the cover. Plug the unit in, and it is now ready to dispense ice.

SERVICE DIAGNOSIS

PROBLEM	PROBABLE CAUSE	CORRECTION
Will not dispense ice	1. No ice in hopper	1. Fill hopper with ice
	2. Vend switch does not close	2. Check vend switch, replace if open
	3. Drive motor will not run	3. Check drive motor, replace if not working
	4. Door solenoid will not open door	4. Check/replace door and solenoid
	5. Rotor will not turn	5. Check hub of rotor
	6. Relay for vend switch does not close during operation.	6. Check relays, replace if necessary.

ELECTRICAL SEQUENCE

Refer to the wiring diagram.

Ice Vending:

Ice is dispensed as long as the ice vend lever or push button is pushed, or until the hopper is empty of ice.

- When the ice vend lever or push button is pushed, the vend switch closes, and makes a circuit to the coil of relay A.
- When relay A is energized, relay A's contacts 6-9 and 7-4 close. Relay A's contacts 7-1 open.
- When relay A's contacts 6-9 close, they make a circuit to the door solenoid, which opens the ice door.
- When relay A's contacts 7-4 close, they make a circuit to the coil of relay B.
- When relay A's contacts 7-1 open, the circuit to the timer is opened.
- When relay B's coil is energized, it closes a circuit to the gearmotor, and the motor turns the rotor.

Stand By:

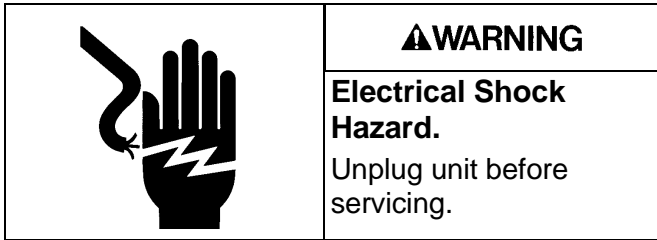
- Relay A's contacts 7-1 are closed and make a circuit to the timer.
- The timer is energized when the unit is not dispensing. The timer switch will close for a few seconds every two hours.
- When the timer switch is closed, it makes a circuit to relay B's coil.
- When relay B is energized, it powers the gearmotor, and the rotor is turned.

IS160 and IS220

REMOVAL & REPLACEMENT

To Replace Vend Switch:

1. Disconnect Electrical Power.



2. Pull out and remove upper front panel.

Lever Type

- A. Twist ice chute 1/3 turn and pull down to remove.
- B. Remove screws holding mounting plate to cabinet. Pull plate assembly out and away from cabinet. Switch is mounted to valve plate.

Push Button

- A. Locate vend switch behind push button.
 - B. Remove wires from switch.
 - C. Remove screw & nut retaining switch to mounting plate, and remove switch from dispenser.
3. Reverse steps to reassemble.

To Replace Gear Motor Assembly:

1. Disconnect electrical power.
2. Remove cover from hopper.
3. Unscrew sweep arm holding rotor to gearmotor shaft.
4. Remove rotor from gearmotor shaft.
5. Remove splash panel
6. Twist ice chute 1/3 turn and pull down to remove.
7. Remove ice chute mounting plate.
8. Remove screws holding valve mounting plate to cabinet. Pull valve assembly out and away from cabinet.
9. Mark location of gearmotor bracket on cabinet.
10. Disconnect gearmotor electrical leads in control box.
11. Remove (4) screws holding gearmotor to bracket..

12. Remove (4) screws holding bracket to cabinet.
13. Pull gearmotor bracket from cabinet.
14. Dismount gearmotor from dispenser.
15. Reverse to reassemble. Gearmotor bracket should be installed where it was, so that the rotor should clear bin surface by 1/8" to 1/4". If needed, the slots on the gearmotor bracket will allow the position of the rotor to be adjusted.

To Replace Solenoid:

1. Disconnect electrical power.
2. Pull out and remove upper front panel. Remove fluorescent tube light if used.
3. Remove 2 thumb screws holding lower brace and remove.
4. Remove 3 thumb screws holding upper ice chute cover, and remove cover.
5. Disconnect electrical leads from solenoid.
6. Straighten cotter pin, and remove pin from solenoid plunger.
7. Remove rubber mounting screws holding solenoid to cabinet, and remove solenoid from cabinet.
8. Reverse to reassemble.

To Replace Light: (Optional)

1. Disconnect electrical power.
2. Pull out and remove upper front panel.
3. Twist fluorescent tube out of sockets.
4. Reverse to reassemble.

