

HQD750

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PARTS LIST AND WIRING DIAGRAMS 1

(Printed in Yellow)

PARTS LIST:

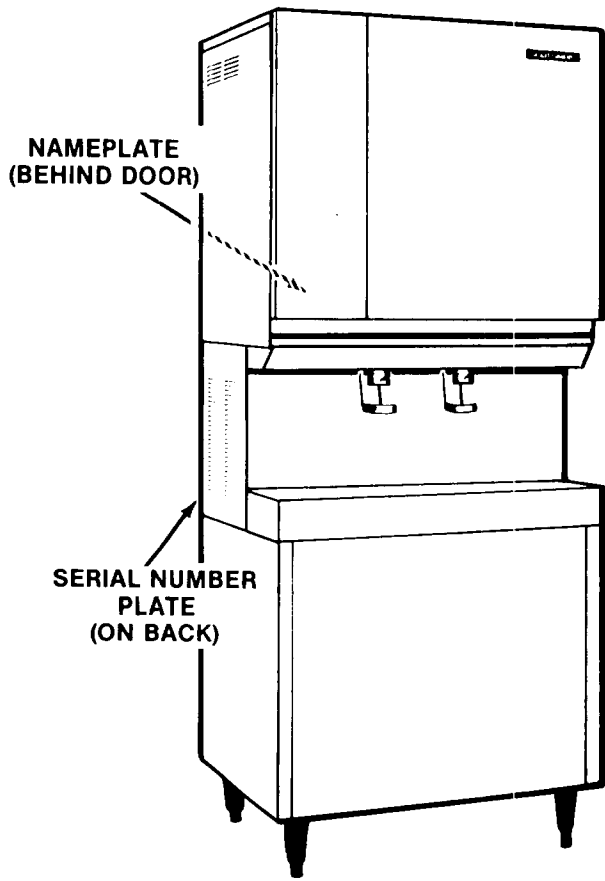
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WIRING DIAGRAMS:

HQD750AE-1A (115/60/1)	
HQD750WE-1A (115/60/1)	
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HQD750 FOR THE INSTALLER



HQD750

DMS31

DESCRIPTION

This attractive compact cabinet has textured metal with a sandalwood enamel finish, cork pattern vinyl upper front panel and sienna accent trim. Also, an optional stainless steel cabinet finish is available. Both cabinets have up-to-date styling, and easily removable panels for easy access to electrical and mechanical components.

SELF-CONTAINED STORAGE BIN

These high quality ice dispensers store their own ice supply in a cylindrical stainless steel ice storage bin.

NAME PLATE

MODEL NUMBER	
SERIAL NUMBER	
A.C. SUPPLY VOLTAGE	
MINIMUM CIRCUIT AMPACITY	WIRES
MAXIMUM FUSE SIZE *	HERTZ
HEATER WATTS	PHASE
REFRIGERANT	CHARGE
MOTORS	VOLTS
COMPRESSOR	R L A / F L A
FAN	WHP
DRIVE	L R A
OTHER	
DESIGN PRESSURE	LOW
	HIGH
* OR HACR TYPE CIRCUIT BREAKER	

UL SP NSF

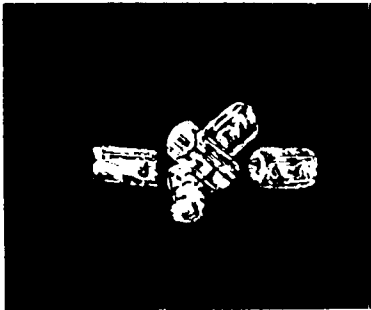
SCOTSMAN

SERIAL NUMBER PLATE

MODEL NUMBER	
SERIAL NUMBER	
VOLTS/HERTZ/PHASE	
MAXIMUM FUSE SIZE	
REFRIGERANT	CHARGE
	OZ

INTRODUCTION

This manual provides the specifications and the step-by-step procedures for the installation, start-up and operation, and the maintenance and cleaning for the SCOTSMAN HQD750 high quality ice dispenser.



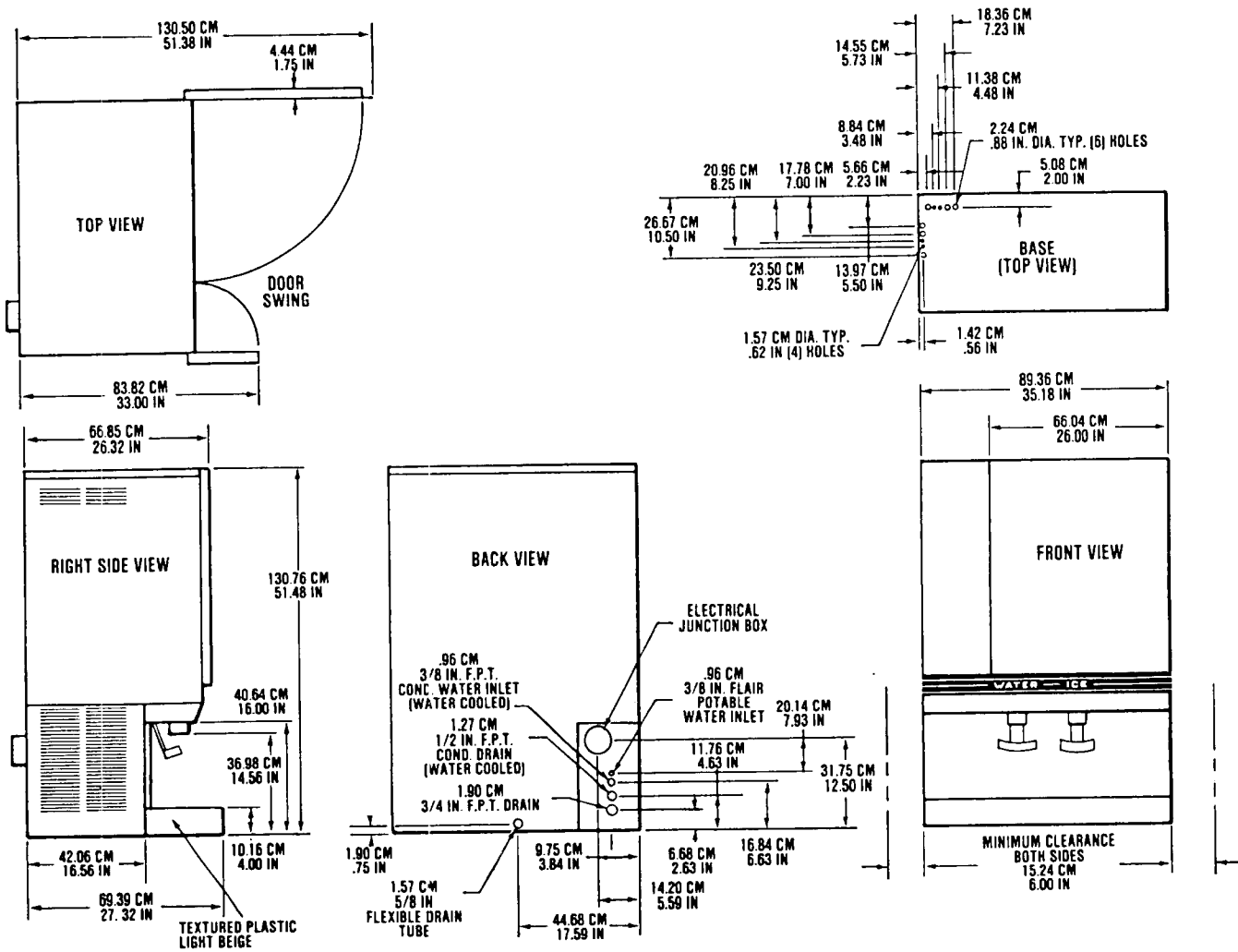
This product qualifies for the following listings:



This icemaker has been engineered to our rigid safety and performance standards. The National Sanitation Foundation (NSF) seal, signifies that it is listed with the NSF and that it complies with the materials and construction standards of the NSF. In addition, the Underwriters Laboratories, Inc., (UL) Listing Mark and the Canadian Standards Association (CSA) Monogram, both signify that its construction and design have been inspected and tested by them. NSF, UL and CSA inspectors also periodically examine production icemakers at the factory, to assure continued compliance.

To retain the safety and performance built into this icemaker, it is important that installation and maintenance be conducted in the manner outlined in this manual.

HQD750 FOR THE INSTALLER



We reserve the right to make product improvements at any time. Specifications and design are subject to change without notice.

SPECIFICATIONS

Model Number	(Height - w/o Legs) Dimensions H" x W" x D"	Bin Cap.	Cube Size	Cond. Unit	Finish **	Basic Electrical	Comp. H.P.	No. of Wires	Min. Circuit Ampacity †	★ Max. Fuse Size	Ship. Wt. lbs./kg.
HOD750AE-1C	51 1/4 x 35 3/4 x 27 1/2	90 lbs	Nugget	Air	ES	115/60/1	3/4	2	27.1	30	448/203
HOD750WE-1C	51 1/4 x 35 3/4 x 27 1/2	90 lbs	Nugget	Water	ES	115/60/1	3/4	2	27.0	30	450/204

Ice production capacity at 90° A / 70° W
 Air-Cooled 502 lbs.

**ES Sandalwood high-gloss, baked enamel finish on leathergrain embossed steel.

†Use this value to determine minimum wire size as per National Electric Code Standards.

★ Or HACR type circuit breakers.

IMPORTANT OPERATING REQUIREMENTS

	MINIMUM	MAXIMUM
Air Temperatures	50°F (10.0°C)	100°F (38°C)
Water Temperatures	40°F (4.4°C)	100°F (38°C)
Water Pressures	20 lbs. gauge	120 lbs. gauge
Electrical Voltage Variations		
Voltage rating specified on nameplate	-10%	10%

Extended periods of operation exceeding these limitations constitutes misuse under the terms of Scotsman Manufacturer's Limited Warranty, resulting in a loss of warranty coverage.

DMS31 MACHINE STAND:

Available in enamel or stainless steel. Four black metal legs screw into mounting plates on cabinet base. Provide 6" minimum height including adjustable leveling feet.

OPTIONAL LEG KIT FOR MACHINE STAND:

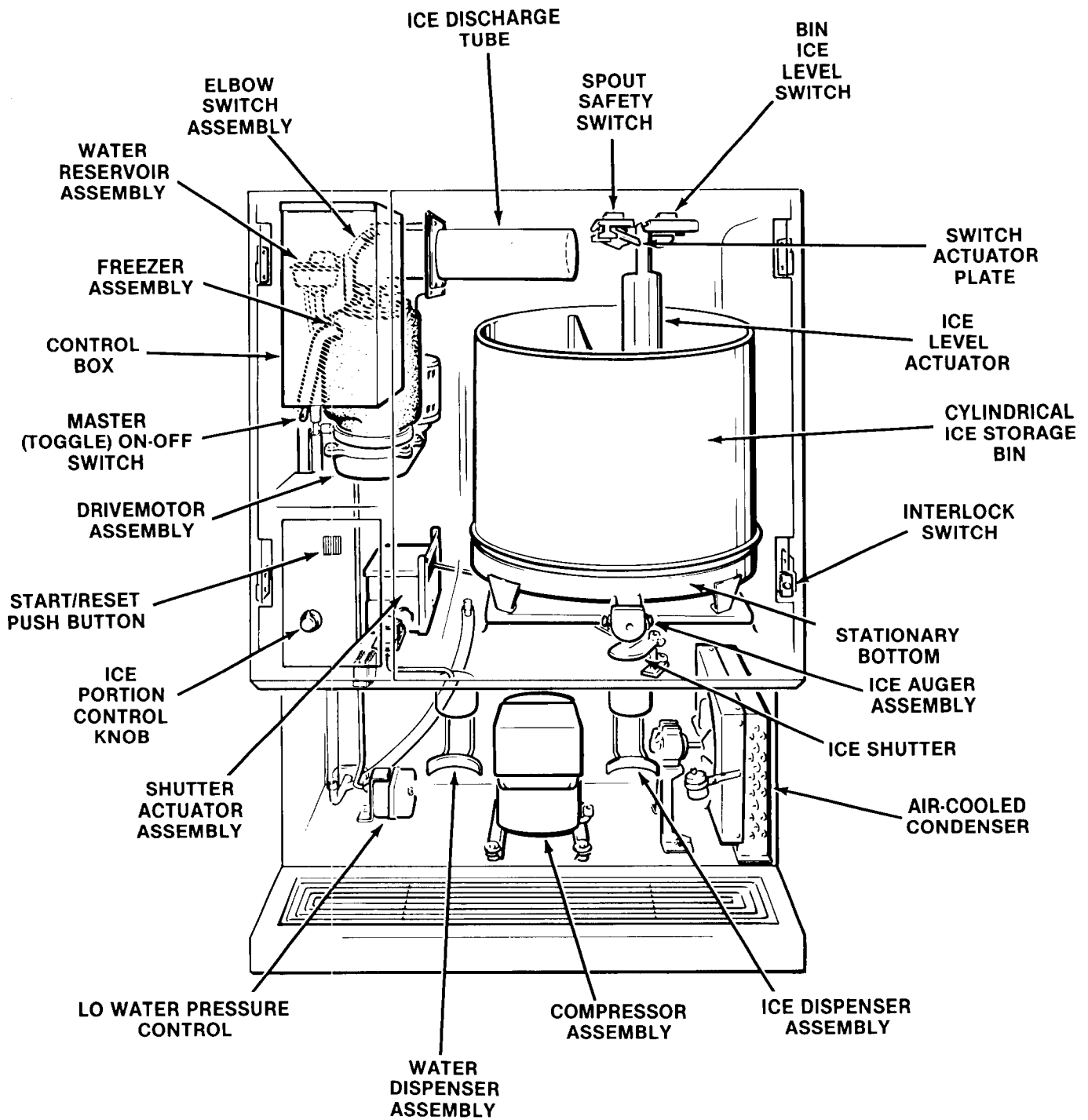
KLP2S: Nickel plated, brushed metal finish with stainless steel foot. Recommended for stainless steel cabinets.

OPTIONAL PANEL KIT:

SPKHD7: Stainless steel panel kit includes top, sides and front panels. Not factory installed.

SEE NAMEPLATE for electrical and refrigeration specifications. Locate the NAMEPLATE on the left side shelf forward of the freezer and drivemotor assembly.

HQD750 FOR THE INSTALLER



Component Location

HQD750 FOR THE INSTALLER

SELECT LOCATION

CAUTION

This icemaker is designed for indoor installations ONLY where air temperatures are above 50 degrees F. and water temperatures are above 40 degrees F. or below 100 degrees F. Extended periods of operation at temperatures exceeding these limitations will constitute misuse, under the terms of the SCOTSMAN manufacturer's limited warranty, resulting in LOSS of warranty coverage.

Prior consideration for location site shall include:

Minimum room temperature 50 degrees F.
Maximum room temperature 100 degrees F.

Water inlet temperatures:

Minimum 40 degrees F.
Maximum 100 degrees F.

Well-ventilated location for air-cooled model, advising user to frequently clean air-cooled condenser, located directly behind the right louvered panel.

SERVICE ACCESS: Reserve adequate space for all service connections, located at the rear of the cabinet. A six-inch minimum clearance at both side panels is mandatory for routing cooling air drawn into the air-cooled condenser and exhausted out the left side panel to maintain proper condensing operation of the air-cooled condenser.

MOUNT ON MACHINE STAND or a counter of sufficient strength to hold the HQD750. The use of a mechanical lift is recommended to raise the HQD750 to its installed height.

The HQD750 and the DMS31 are matched companions and bolt together.

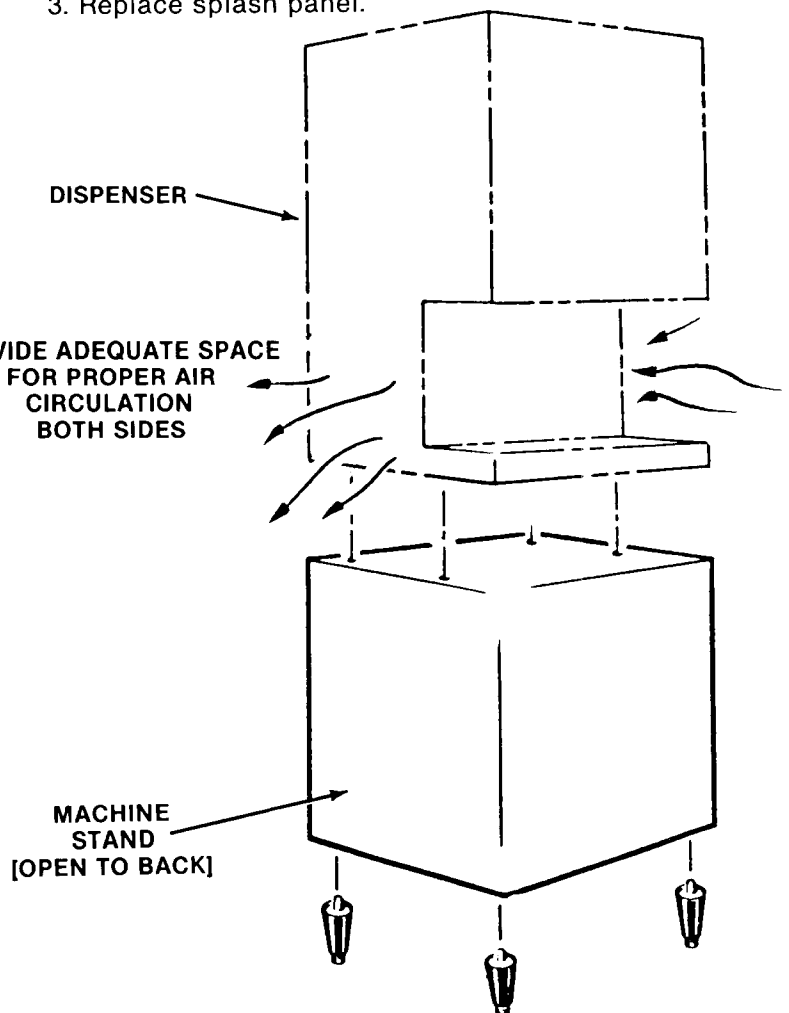
1. Remove shipping tape and packing.
2. Lay machine stand on back or side and install leg kit, if ordered.
3. Position machine stand in selected permanent location and level from front to back and side to side directions with the open section to the back.
4. Lift and attach HQD750 to the stand using the four capscrews and lockwashers provided with the DMS31.
5. Wipe cabinet clean using damp cloth.

UNPACK

1. After mounting the unit to the machine stand in the selected location, the shipping material must be removed.
2. Swing open the front doors and
 - a. Remove styrofoam blocks from either side of the storage bin.
 - b. Remove tape from the storage bin and bin control lever.
 - c. Remove tape from ice delivery auger end plate.
 - d. Unlock spout safety from its retaining clip.

INSTALL SINK ASSEMBLY

1. Bolt mounting brackets found in the sink carton to the lower front edge of the HQD750.
2. With stainless steel splash panel removed, slip sink onto mounting brackets and install sink drain onto the tubing inside of the base.
3. Replace splash panel.



HQD750 FOR THE ELECTRICIAN

ELECTRICAL CONNECTIONS

//////////////////// WARNING //////////////////////

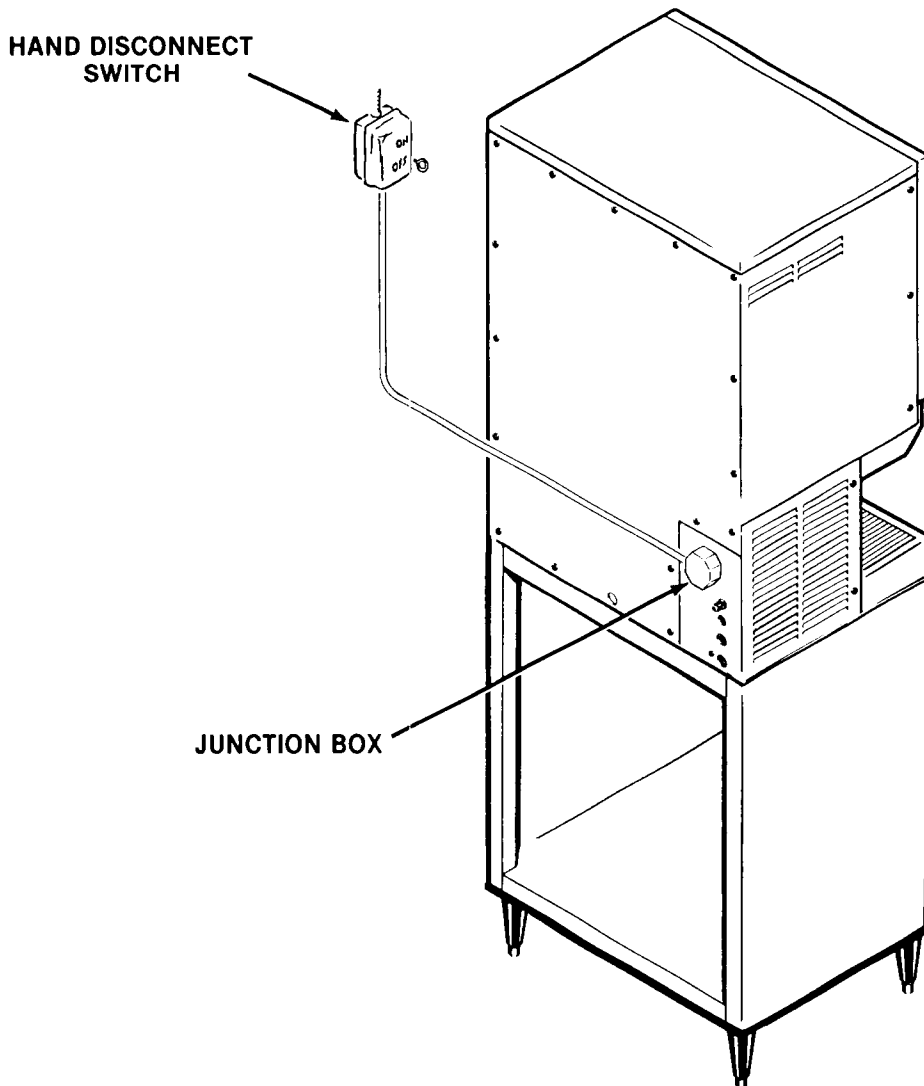
This icemaker requires a **SOLID EARTH GROUND** that meets the national, state and local electrical code requirements. To prevent possible **SEVERE ELECTRICAL SHOCK INJURY** to individuals, or extensive damage to equipment, install an approved **SOLID EARTH GROUND** wire to this icemaker. **SEE** wiring diagram.

////////////////////////////////////

SEE NAMEPLATE for current requirements to determine wire size to be used for electrical hookup.

Be certain the dispenser is connected to its own electrical circuit and individually fused. The maximum allowable voltage variation should not exceed ten percent of the nameplate rating, even under starting conditions. Low voltages can cause erratic operation and may be responsible for serious damage to the overload switch and motor windings.

All external wiring should conform to the national, state and local electrical code requirements. Usually an electrical permit and services of a licensed electrician will be required.



HQD750 FOR THE PLUMBER

WATER SUPPLY AND DRAIN CONNECTIONS

1. **AIR-COOLED MODELS:** The recommended water supply line is a 3/8 inch O.D. copper tubing. Connect to cold water supply line with standard plumbing fittings with a shutoff valve installed in an accessible place between the water supply and the dispenser.

A wire mesh (installer supplied) strainer is recommended, and when used, must be installed with the cleanout plug down. Locate the strainer in the water supply line, next to the dispenser with the arrow on the strainer, in the direction of the water flow. The strainer protects against large particles of rust, scale, etc., which may be loosened in the water supply pipe at the time of installation.

CAUTION

This icemaker is equipped with a low water pressure safety device which in the event of low water pressure will automatically stop the icemaker to prevent damage. The icemaker will automatically restart with increased water pressure.

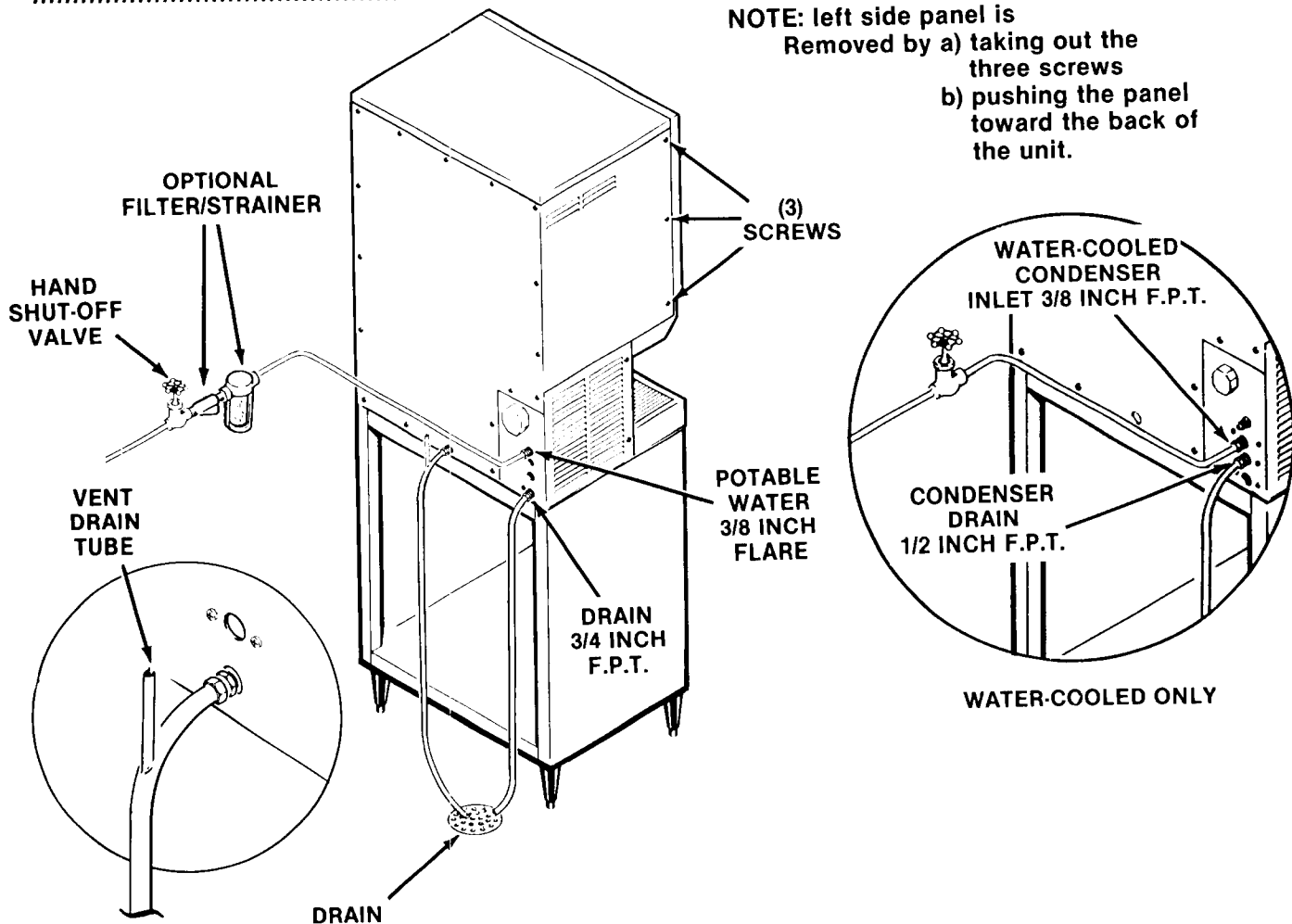
2. **WATER-COOLED MODELS:** On water-cooled models a separate connection to the condenser is required. A 3/8 inch O.D. copper tubing is recommended for a separate water inlet line and a 1/2" O.D. separate drain line.

NOTE: The CAUTION in the text for the Air-Cooled models equally applies for the Water-Cooled models. In both type installations, water supply must be installed to conform with local plumbing codes. In some cases, a plumbing permit and services of a licensed plumber will be required.

3. **DRAIN CONNECTIONS:** All drains are gravity type and must be 1/4-inch fall per foot on horizontal runs. Drains are to be installed to conform with local code. The drain receptacle should be an open, trapped, or vented construction.

Recommended bin drain is 3/4-inch O.D. drain tubes. It should be vented and run separately. Run a separate drain line to 1/2-inch O.D. drain tube from the Water-Cooled Condenser on Water-Cooled models.

NOTE: left side panel is removed by a) taking out the three screws
b) pushing the panel toward the back of the unit.

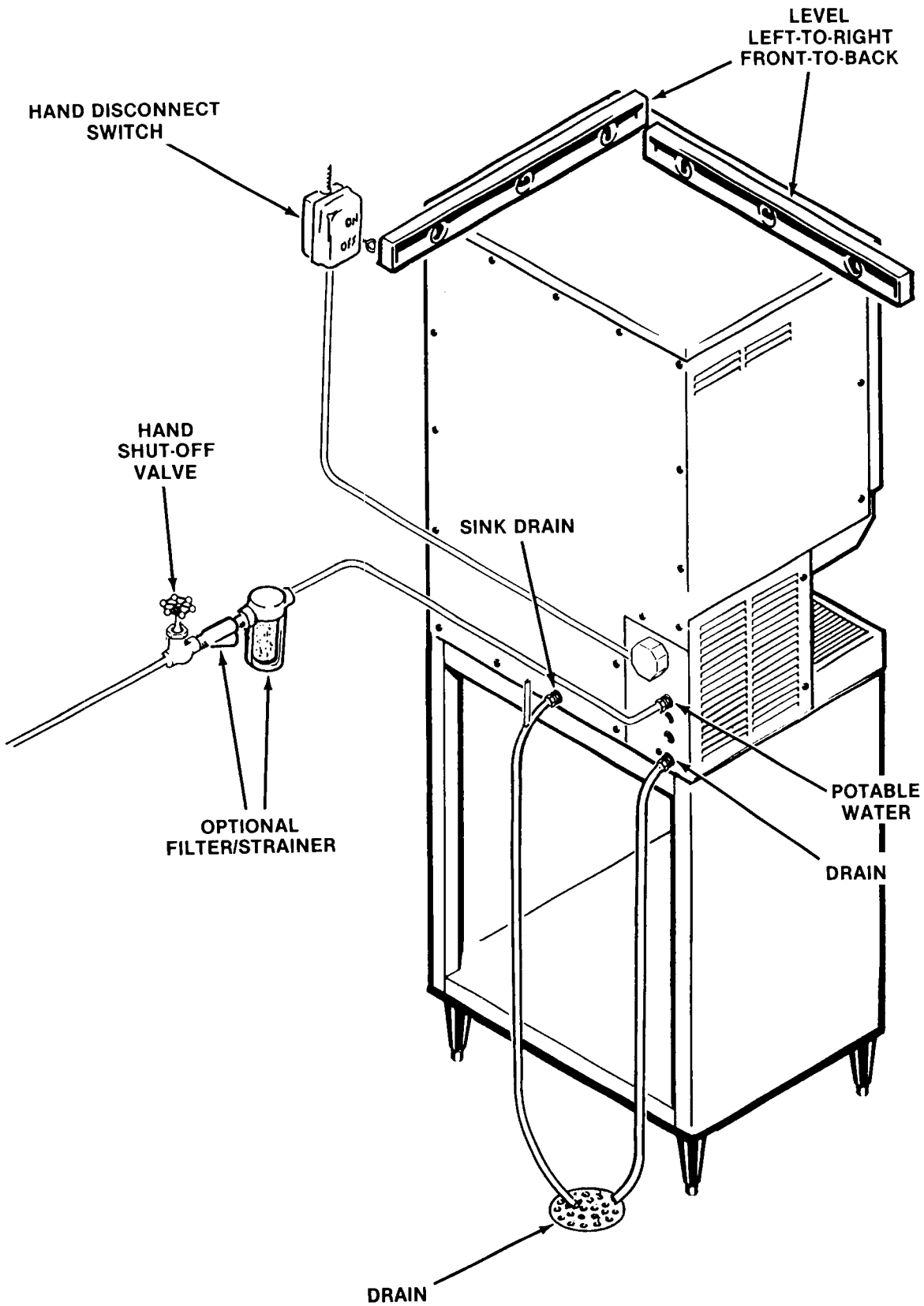


HQD750 FOR THE INSTALLER

FINAL CHECK LIST

1. Is the cabinet in a room where ambient temperatures are within the minimum and maximum temperatures specified?
2. Is there at least six inches clearance at both sides of the cabinet for proper air circulation?
3. Has water supply pressure been checked to insure a minimum of 20 PSIG and a maximum of 120 PSIG operating pressure?
4. Is the cabinet level?
5. Have all electrical and piping connections been made?
6. Is the water supply line shut-off valve installed and electrical wiring properly connected?
7. Has the shipping block been removed from under the compressor. Have the compressor hold-down nuts been checked to be sure the compressor is snug on the mounting pads?
8. Has shipping material been removed from the ice storage bin and the bin control levers?
9. Check all refrigerant lines and conduit lines, to guard against vibration or rubbing and possible failure.
10. Have the bin and cabinet been wiped clean?
11. Has the Manufacturer's Registration Card been properly filled out? Check for correct model and serial numbers from Serial nameplate, then mail the completed card to the SCOTSMAN factory.
12. Has the owner/user been given the Service Manual and instructed how to operate and maintain the icemaker?
13. Has the owner been given the name and telephone number of the authorized SCOTSMAN Service Agency serving him?

HQD750 FOR THE INSTALLER



HQD750 START-UP

START UP

1. Pull the left front panel out and rotate to OPEN.
2. Loosen two wing head screws and rotate the door assembly to OPEN.
3. Remove screws and left side panel.
4. OPEN the inlet water supply line shut-off valve.
5. Observe the water filling operation.
 - a. Water flows into water reservoir.
 - b. Float moves up as water rises.
 - c. Water flows through the water feed line to the bottom of the freezer assembly.
 - d. Float STOPS water flow when level reaches 3/8-inches below the molded horizontal line on the body of the water reservoir.
6. Connect electrical power to ON position.
7. The Master ON-OFF switch is located under the control box. Move the Master ON-OFF switch to ON position.
8. Press the illuminated START-RESET pushbutton to START the automatic ice making process. Listen for the sound the compressor start-up.

NOTE

Unit stops making ice when door is opened. Also, it will NOT dispense!

9. After four or five minutes of operation, observe that random lengths of cylindrical broken chunks of high quality ice begins dropping out of the open end of the ice spout, above the cylindrical ice storage bin.
10. Let the system operate for about 30 minutes or, until ice fills about one-fourth of the bin. Check for any excess noises beyond normal compressor noise:
 - a. Fan noises, Air-Cooled: Blades touch other surfaces; blades bent, or out-of-balance.
 - b. Vibrating type: From touching lines.
 - c. Chattering: Lack of water in freezer.
 - d. Compressor loose at one or more hold-down bolts.

NOTE

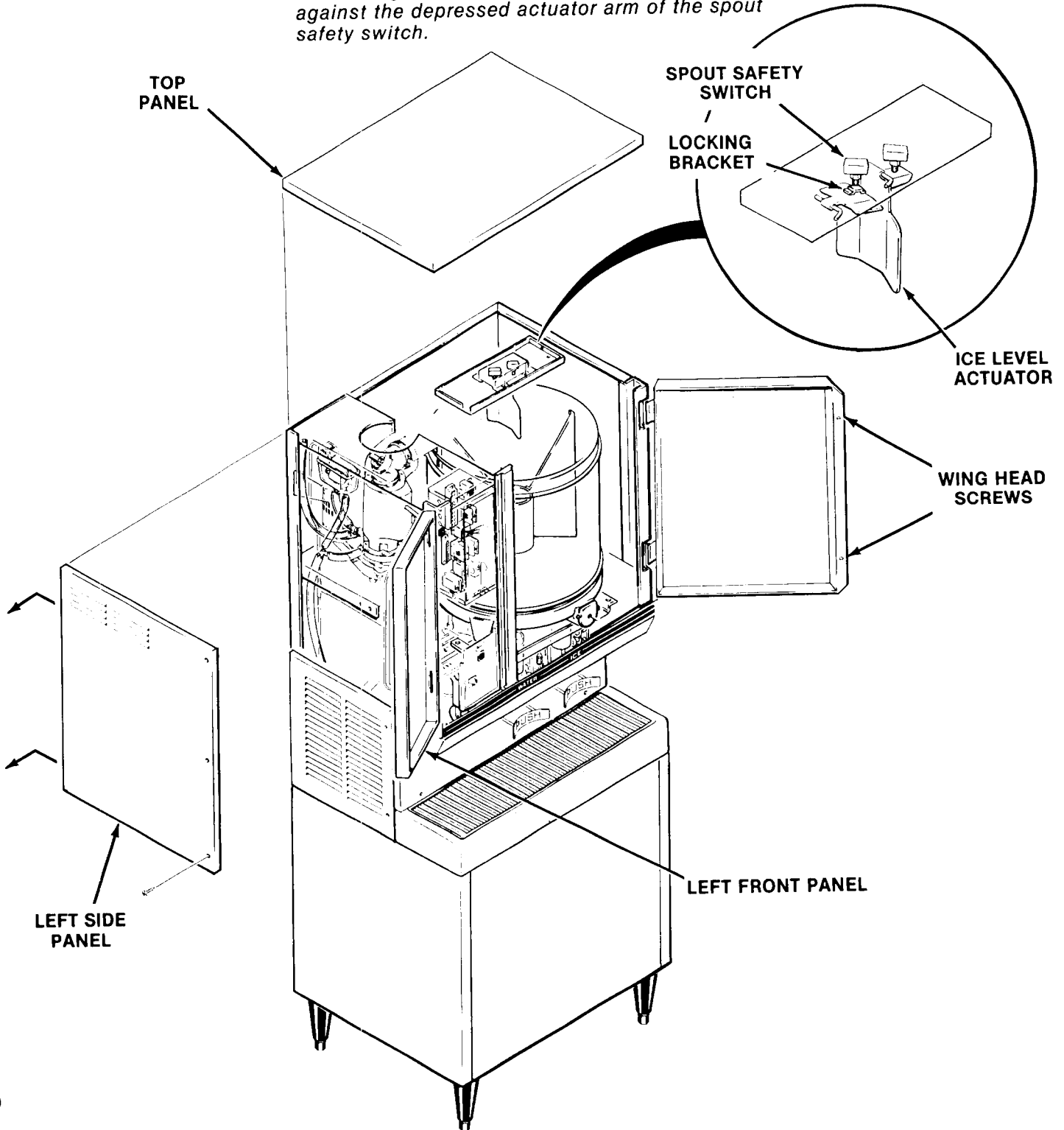
The bin ice level switch is an ON-OFF switch, that shuts OFF the compressor to stop icemaking, while the freezer assembly drivemotor continues to operate, in order to clear all ice from the auger. Then, when the refrigerant pressure equalizes the refrigerant low-pressure control will shut OFF the drivemotor. When the ice level control pushes the switch IN, the compressor is shut OFF and when the action of the ice level control releases the actuator arm, the switch CLOSES the circuit and RESTARTS the compressor and the icemaking process.

11. Rotate the ice portion control knob, on the front of the switch mount, fully CLOCKWISE, to the section labeled MAXIMUM.
12. With an ice drink glass, push IN on the glass filler level assembly, under the ice spout, and check that DESIRED amount of ice is dispensed.
13. After a few seconds, RELEASE pressure on the glass filler lever assembly and check that ice dispensing STOPS.
14. Rotate the ice portion control knob, on the control panel, to about MID-RANGE on the dial; then, with a standard ice drink glass, push IN on the glass filler lever assembly, under the ice spout, and observe that a measured amount of ice is dispensed and dispensing STOPS.
15. Check the ice portion dispensed in the glass to determine whether the amount of ice is:
CORRECT ICE PORTION
TOO SMALL ICE PORTION
TOO LARGE ICE PORTION
16. Rotate the ice portion control knob, CLOCKWISE, about one-eighth of a turn, to INCREASE the ice portion; or, COUNTER-CLOCKWISE, about one-eighth of a turn, to DECREASE the ice portion.
17. Dispense several ice portions, in the glass to be used for standard example, and repeat steps to achieve the desired correct portion.
18. Check the bin ice level switch.

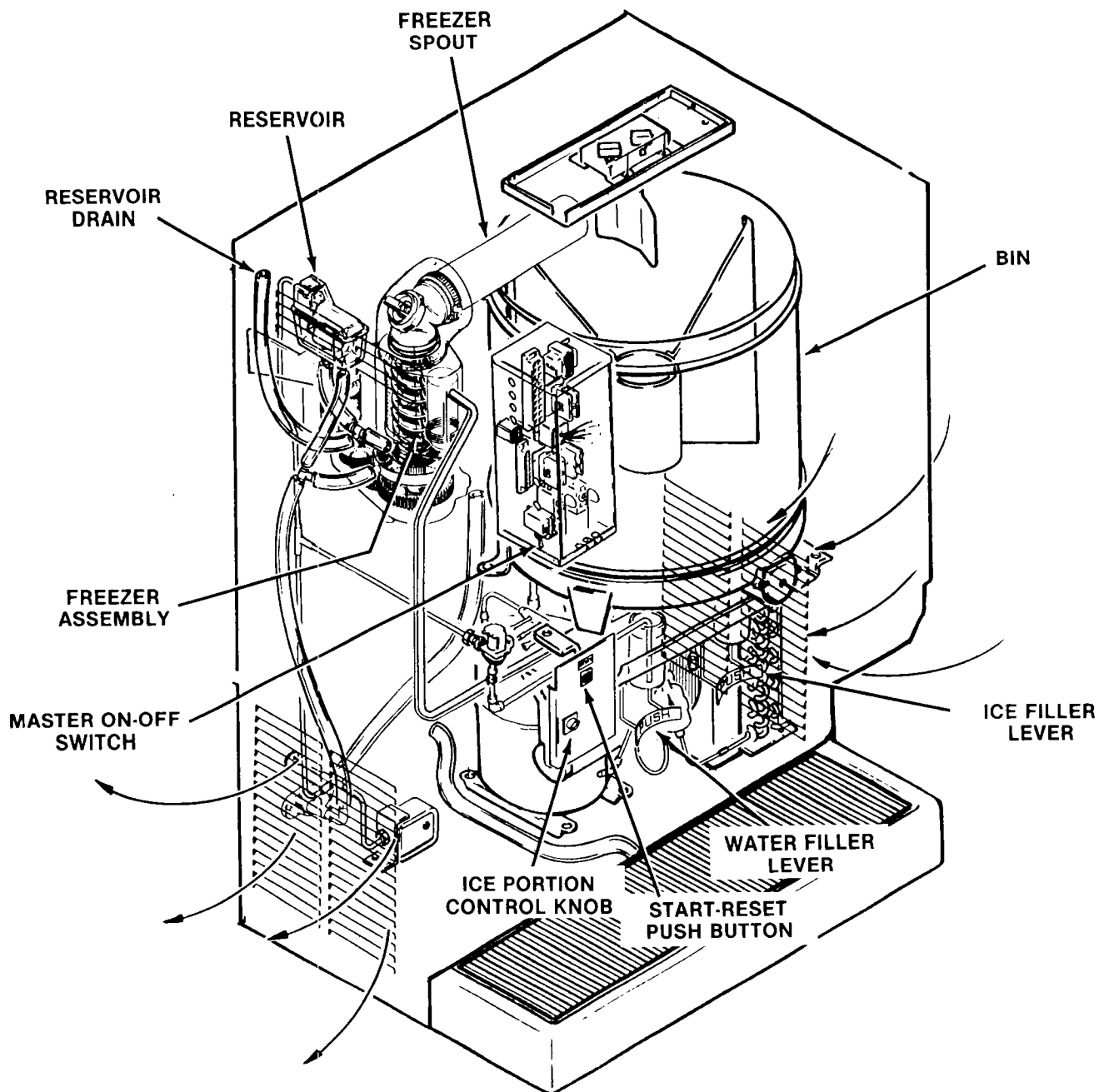
HQD750 START-UP

NOTE

The spout safety switch is manually reset and functions to immediately STOP the entire icemaker, if the bin ice level switch were to fail and begin to cause ice to jam up in the spout. Once SHUT OFF, the spout safety switch is reset, when the actuator plate is released from the locking bracket, which holds the plate tight against the depressed actuator arm of the spout safety switch.



HQD750 OPERATION



AIR-CIRCULATION
(AIR-COOLED MODELS)

HQD750 OPERATION

ICE LEVEL CONTROLS

The bin ice level switch is an ON-OFF switch, that shuts OFF the compressor to stop icemaking, while the freezer assembly drivemotor continues to operate, in order to clear all ice from the auger. Then, when the refrigerant pressure equalizes, the refrigerant lo-pressure control will shut OFF the drivemotor. When the ice flow pushes the actuator arm of the switch IN, the compressor is shut OFF and when the action of the melting or dispensed ice releases the actuator arm, the switch CLOSSES the circuit and RESTARTS the compressor and the icemaking process.

The bin ice level safety switch is mounted next to bin ice level switch and is actuated by the movement against the switch actuator. The safety switch acts as a backup safety switch, should the bin ice level switch fail and cause ice to jam up in the ice spout. The safety switch will shut off the icemaker only when actuated. It is an immediate and complete shut down of the entire icemaker. The bin ice level safety switch must be manually reset.

DISPENSING SYSTEM

STANDBY—In the STANDBY mode, the refrigeration system may or may not be making ice. The ice vend switch is in it's normal position, with contact between common and NC.

ICE DISPENSE — With a container, push in the glass filler lever and dispense ice. The circuit is completed through the ice vend switch and cam-1 switch, which actuates the coil of the shutter relay, giving power to the shutter motor, which begins to rotate. Rotating half a turn, OPENS the ice shutter, cam-1 switch opens to the N/C position and the ice shutter STOPS, as cam-2 switch closes to N/O and cam-3 closes to the N/C positions. Cam-2 switch applies power to the time delay relay, and in turn, to the coil of the dispensing contactor, which CLOSSES the contactor, providing power to the auger drive motor and the bin drive motor, which causes ice to be dispensed. Then one of two sequences next occur:

PORTION CONTROLLED —

1. The time delay relay removes power from the coil of the dispensing contactor, which OPENS the circuit to the auger drive motor and the bin drive motor and STOPS the ice dispensing; or, removing container and releasing the glass filler lever assembly, OPENS the ice vend switch N/O to cam-2 switch and transfers power through cam-3 switch to the coil of the shutter relay, which

CLOSES: and, the shutter motor continues to operate until the ice shutter is rotated to the CLOSED position and STOPS, which OPENS cam-3 and returns the circuit to the STANDBY condition.

CONTINUOUS DISPENSING —

2. When the container is removed, releasing the glass filler lever assembly, power is interrupted through cam-2 switch, to the time delay relay, the coil of the dispensing contactor drops out, which STOPS the ice dispensing; and, power is transferred to cam-3, and in turn, to the coil of the shutter relay, which CLOSSES, and the shutter motor continues to operate until the ice shutter is rotated to the CLOSED position and STOPS, which OPENS cam-3 and returns the circuit to the STANDBY condition.
3. Thoroughly explain to the owner/user the significant specifications of the icemaker, the start up and operation, going through the procedures for the operating instructions. Answer all questions about the icemaker, by the owner; and, inform the owner of the name and telephone number of the authorized SCOTSMAN Service Agency serving him.

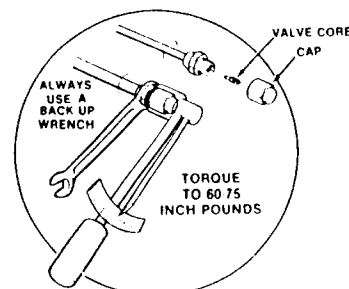
REFRIGERATION PRESSURES

The head pressure is normal about 135-140 PSIG, however, it will vary depending upon ambient air temperature.

Suction pressure should be 10 to 12 PSIG with proper refrigerant charge and the frost line should extend out from the accumulator to within no closer than eight to twelve inches of the compressor. Suction pressure will vary about two PSIG plus or minus, depending upon ambient temperatures and incoming water supply temperatures to the freezer assembly.

Model	HQD750 Refrig. Chg.
Air-Cooled	24 oz. R-12 (Approx.)
Water-Cooled	21 oz. R-12 (Approx.)

TO SERVICE REFRIGERATION SYSTEM
TORQUE REFRIGERATION ACCESS VALVE
CAPS TO 60-75 INCH POUNDS.



ALWAYS USE A BACK UP
WRENCH TO AVOID DAMAGE
TO THE REFRIGERANT TUBING

HQD750 OPERATION

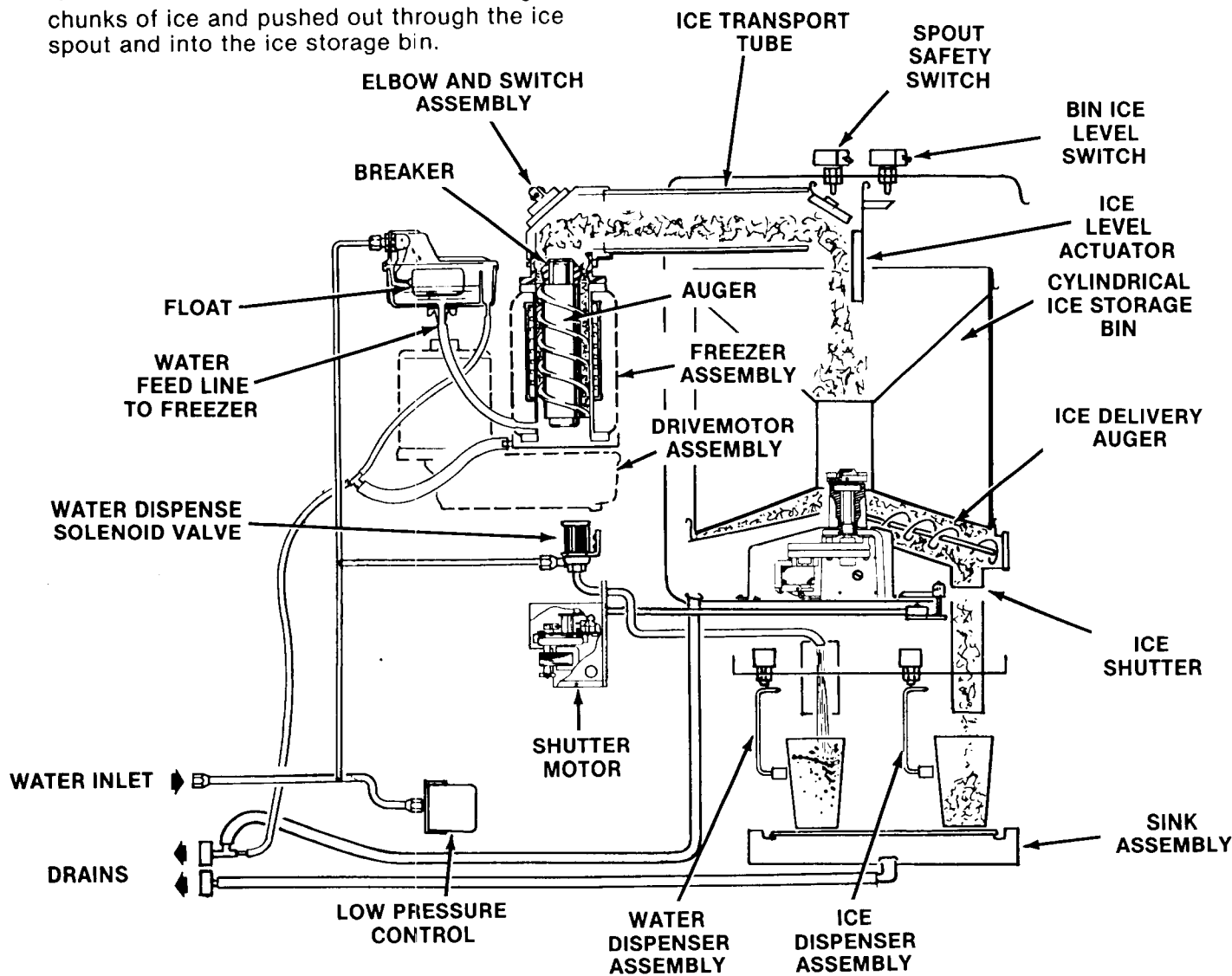
ICEMAKER

The water supply flows from the building source through the inline water strainer, enters the cabinet and on to the water reservoir. The water reservoir functions to maintain a constant water level inside the freezer assembly. Water from the water reservoir enters at the bottom of the freezer assembly and is changed into ice by low temperatures inside the freezer.

A stainless steel auger within the freezer is powered by the drivemotor assembly, a direct-drive gearmotor, and the rotating auger carries the ice upward to the end of the auger, where excess water is pressed out of the ice, as it is extruded and broken into random length chunks of ice and pushed out through the ice spout and into the ice storage bin.

Connecting electrical power starts the automatic and continuous icemaking process. When the cylindrical ice storage bin has been filled with ice, up to the level of the bin ice level switch actuator, the actuator depresses bin ice level switch and shuts off the icemaking process.

As the ice is removed from the cylindrical ice storage bin, the actuator releases the bin ice level switch restarting the automatic icemaking process.



Water Schematic

HQD750 OPERATION

ELECTRICAL/REFRIGERATION

The Model HQD750 Dispensers are designed to operate on standard electrical supply 115 volts, 60 Hertz, single phase.

Therefore, always CHECK NAMEPLATE for electrical information BEFORE proceeding with electrical wiring connections to the icemaker.

Cold ambient temperatures and interruptions in water supply are conditions that can cause excessively hard ice and overloads within the freezer assembly, which is directly transmitted to the drivemotor; and in turn, will cause speed reduction or ultimate freezeup.

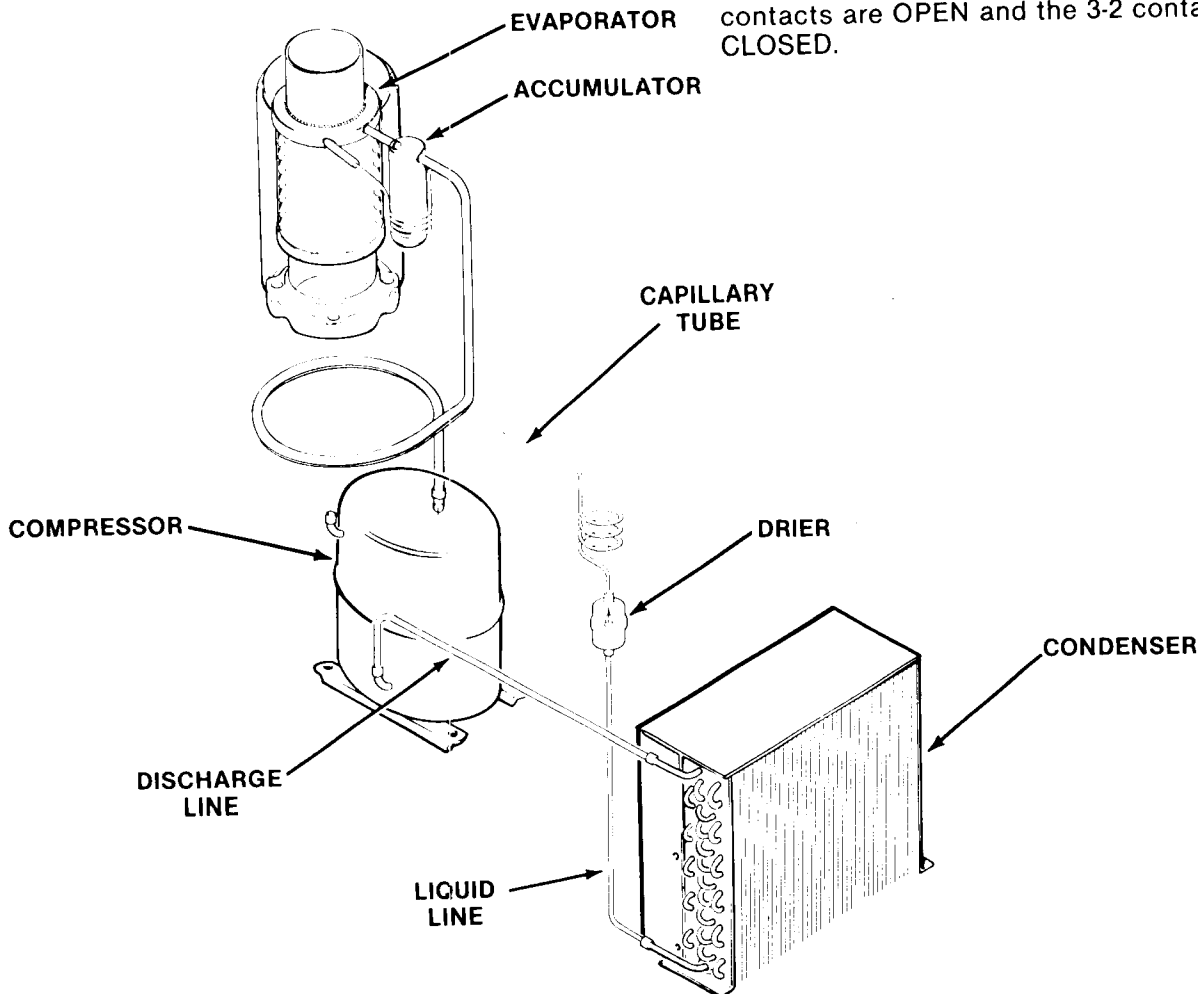
When the drivemotor is slowed to a predetermined RPM, a sensing switch mounted on top of the motor is designed to open the electrical circuit to the compressor. The compressor stops operating, no more ice is produced, and the drivemotor continues to operate, rotating the auger to clear the overload and gradually building up of full speed.

At a pre-determined higher RPM drivemotor speed, the speed sensing switch closes the electrical circuit to the compressor, causing the normal icemaking process to resume.

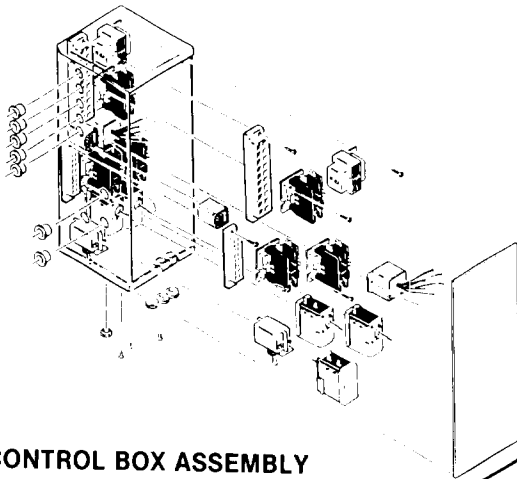
Refer to the appropriate Wiring Diagram and trace circuitry and control functions, as described in the following paragraph:

As shown on all SCOTSMAN wiring diagrams, the controls are in the ICEMAKING MODE. Thus, the 1-2 contacts are CLOSED. At START-UP, the 1-2 contacts are OPEN and the 3-2 contacts are CLOSED. As the icemaker begins to operate, the low side pressure starts to decrease from the stabilized or at-rest pressure. As soon as the pressure is reduced to 20 PSIG, the 3-2 contacts OPEN and the 1-2 contacts CLOSE.

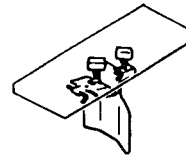
This removes the operating controls, such as the bin control, from the gearmotor circuit. If one of the operating controls OPENS, it will SHUT OFF the compressor circuit. The gearmotor will operate until the low side pressure increases to 32 PSIG. Then, the 1-2 contacts OPEN and SHUT OFF the gearmotor, usually within one or two minutes, depending upon ambient conditions. This brief period of time allows the auger to transport all the ice out of the freezing chamber. Consequently, when called on to STARTUP again, there is no ice load to start up against. Again, on STARTUP, the 1-2 contacts are OPEN and the 3-2 contacts are CLOSED.



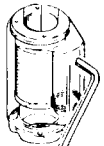
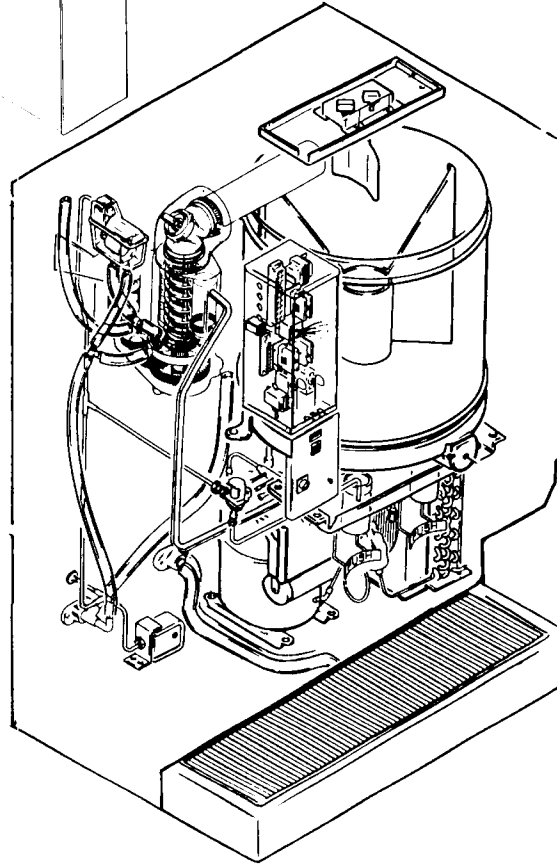
HQD750 COMPONENT DESCRIPTION



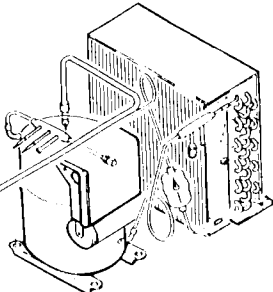
CONTROL BOX ASSEMBLY



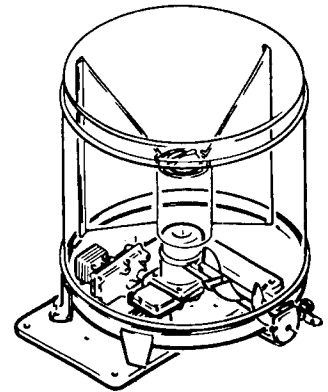
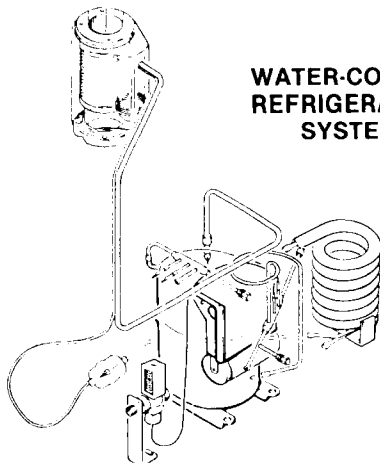
**BIN ICE LEVEL
AND
SPOUT SAFETY
SWITCHES**



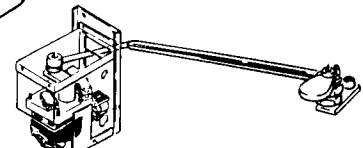
**AIR-COOLED
REFRIGERATION
SYSTEM**



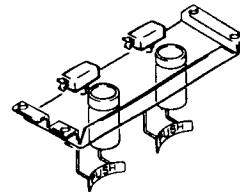
**WATER-COOLED
REFRIGERATION
SYSTEM**



BIN ASSEMBLY



**SHUTTER ACTUATOR
ASSEMBLY**



DISPENSER ASSEMBLY

HQD750 COMPONENT DESCRIPTION

BIN ICE LEVEL SWITCH

The bin ice level switch is an ON-OFF switch, that shuts OFF the compressor to stop icemaking, while the freezer assembly drivemotor continues to operate, in order to clear all ice from the auger. When the refrigerant pressure equalizes, a refrigerant lo pressure control will shut OFF the drivemotor. When the ice level actuator pushes the switch IN, the compressor is shut OFF and when the action of the ice level actuator releases the switch, it CLOSSES the circuit and RESTARTS the compressor and the icemaking process.

SPOUT SAFETY SWITCH

The spout safety switch is manually reset and functions to immediately STOP the entire icemaker, if the bin ice level switch were to fail and begin to cause ice to jam up in the spout. Once SHUT OFF, the spout safety switch is reset, when the actuator plate is released from the locking bracket, which holds the plate tight against the depressed actuator arm of the spout safety switch.

WATER PRESSURE SAFETY SWITCH (See page 18) installed in the potable water inlet line is set to electrically open below 20 PSIG and stop the entire icemaker. The AUTOMATIC RESET will restart the icemaking process when water pressure rises to 20 PSIG.

AUGER DELAY SWITCH, (See page 20) a single-pole double throw (SPDT) switch, allows the gearmotor to rotate the Auger and clear the freezing chamber after the bin ice level switch circuit to compressor is OFF. When the icemaker restarts, the gearmotor starts in a no load condition, preventing excessive loading of gearmotor and bearings.

REFRIGERANT LO PRESSURE CONTROL (See page 20) is factory set to automatically SHUT DOWN the icemaker if the low-side pressure drops below 4 PSIG or low ambient or water temperatures exist. This is an AUTOMATIC RESET control.

Water-cooled icemakers have two refrigerant pressure switches, hi refrigerant pressure and low refrigerant pressure.

RESET PUSHBUTTON (See page 20)

When pushed completes the electrical circuit through the icemaker electrical components. The RESET PUSHBUTTON must be pressed to restart the icemaking process whenever any of the safety controls have functioned to stop the icemaker or an interruption in the electrical supply has occurred.

ELBOW SAFETY SWITCH (See page 18)

The elbow safety switch is an ON-OFF switch that shuts off the compressor when an ice jam presses against the rubber diaphragm depressing the switch and opening the circuit. Melting action relieves pressure closing the circuit, lighting the start-reset pushbutton. The start-reset switch must then be pressed to start the automatic icemaking process.

ICE BREAKER ASSEMBLY (See page 18)

The ice breaker assembly, bolted to the top of the freezer, contains the bearing and seal for the top of the auger. Flaked ice created by the freezer is carried by the auger to the ice breaker assembly and the flaked ice is pushed by the auger through the tapered holes in the ice breaker. Flaked ice is compressed by auger pressure as it is pushed through the ice breaker assembly and the shafts of compressed ice are broken into random lengths of Ice Nuggets by the taper on the top of the ice breaker.

WATER REGULATOR VALVE

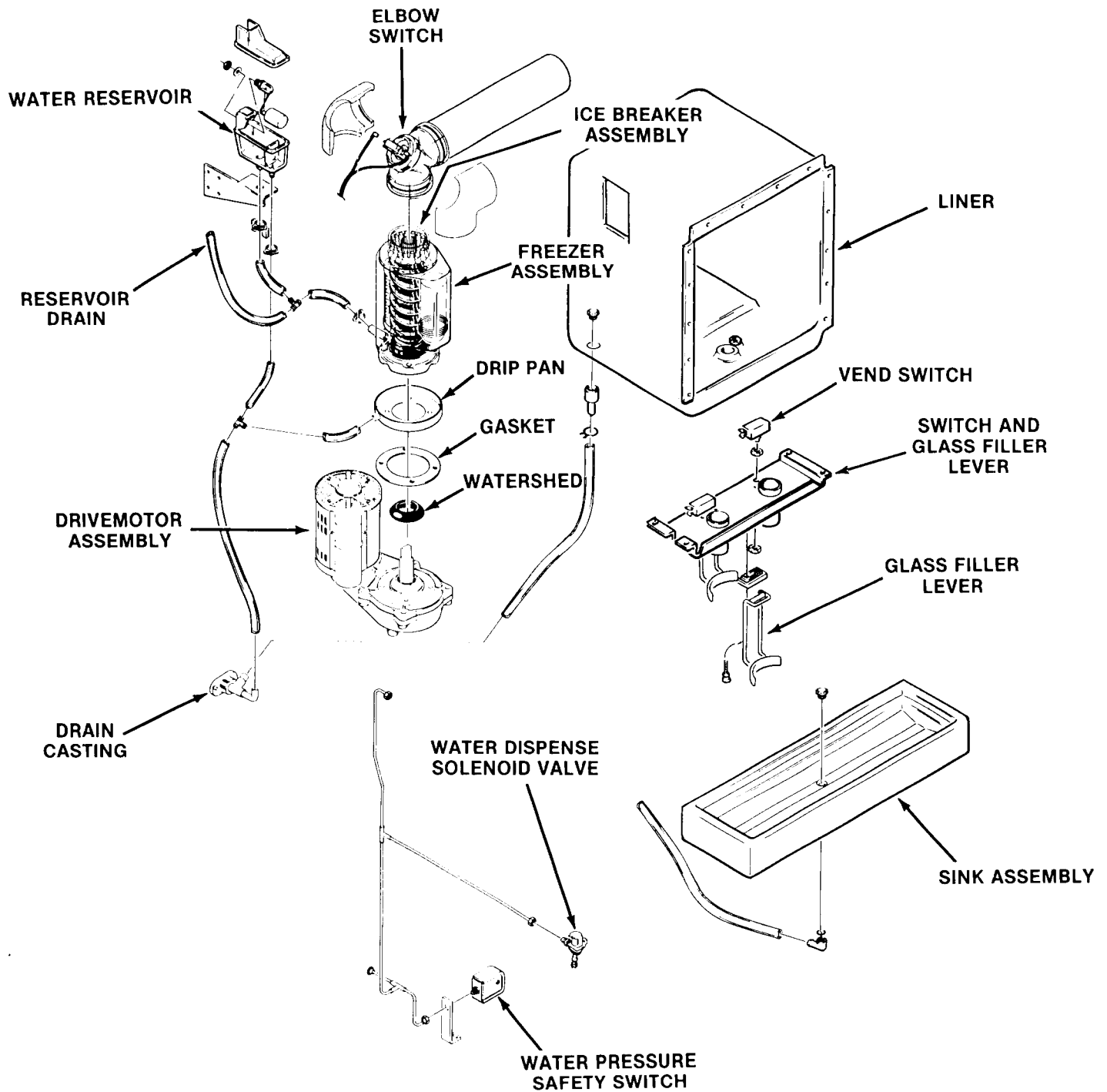
WATER-COOLED MODELS (See page 16)

The water regulator valve functions to maintain a constant head pressure, by regulating the amount of incoming water flow through the condenser, on water-cooled models. The valve operates through the refrigerant system high side pressure. Rotating the adjusting screw, located on top of the valve, can INCREASE or DECREASE the operating head pressure.

DRIVEMOTOR ASSEMBLY (See page 18)

A stainless steel auger within the freezer is powered by the drivemotor assembly, a direct-drive gearmotor, and the rotating auger carries the ice upward to the end of the auger, where excess water is pressed out of the ice, as it is extruded and broken into random length chunks of ice and pushed out through the ice spout and into the cylindrical ice storage bin.

HQD750 COMPONENT DESCRIPTION



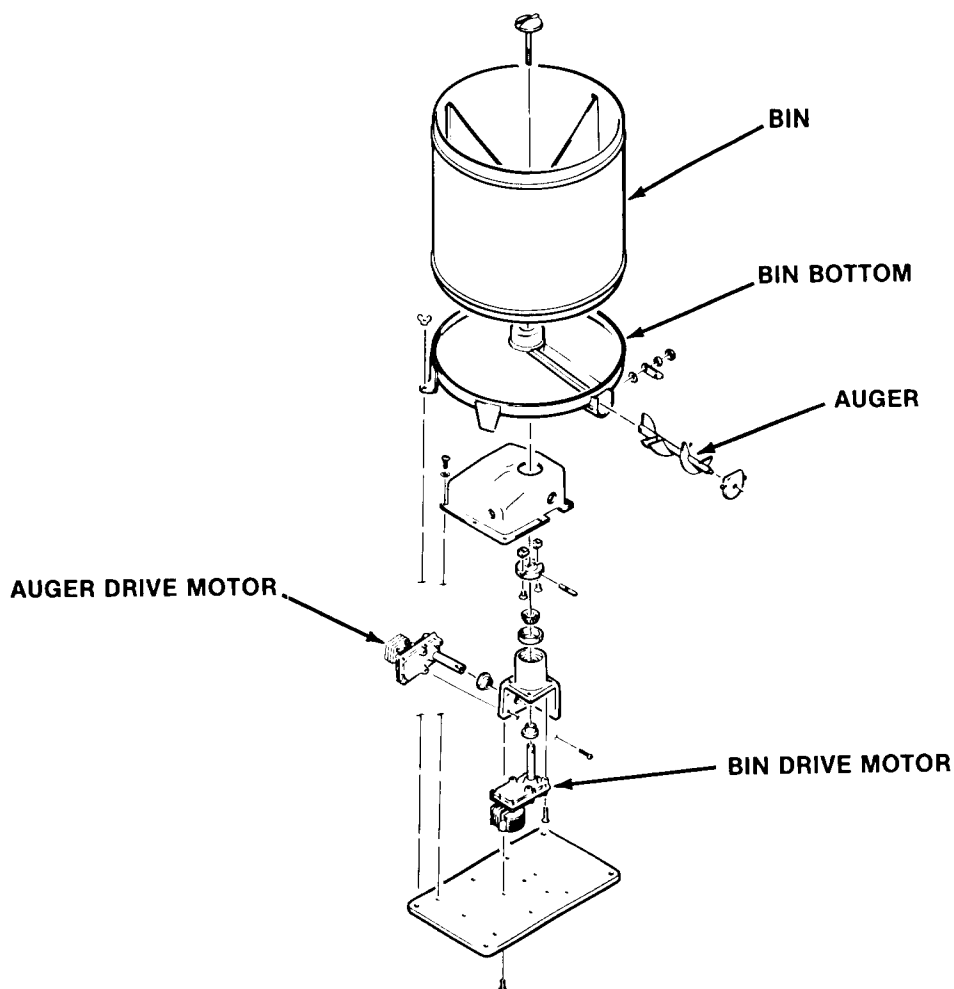
WATER RESERVOIR

The water reservoir, with a float valve assembly, maintains a constant water supply within the freezer assembly. The water level in the reservoir is the same water level as in the freezer and the correct water level in the freezer is level with the top of the auger flights. The water level in the freezer can be adjusted by raising or lowering the water reservoir with the bracket.

RESERVOIR DRAIN

The reservoir drain is for use to drain the water reservoir when cleaning or maintenance of the icemaking system.

HQD750 COMPONENT DESCRIPTION



INNER BIN

The cylindrical stainless steel inner bin contains the ice supply in storage until the ice vend switch is activated, bin drive motor operates and rotates the inner bin over the bin bottom.

BIN BOTTOM

The cone shaped stationary bin bottom holds the ice supply, and when the inner bin is rotated the ice supply rotates and ice is shaved off from the bottom and drops into the ice delivery auger.

AUGER DRIVE MOTOR

The auger drive motor located under the stationary bin bottom rotates the auger which pushes ice supply to the shutter. The ice falls through the ice dispense spout.

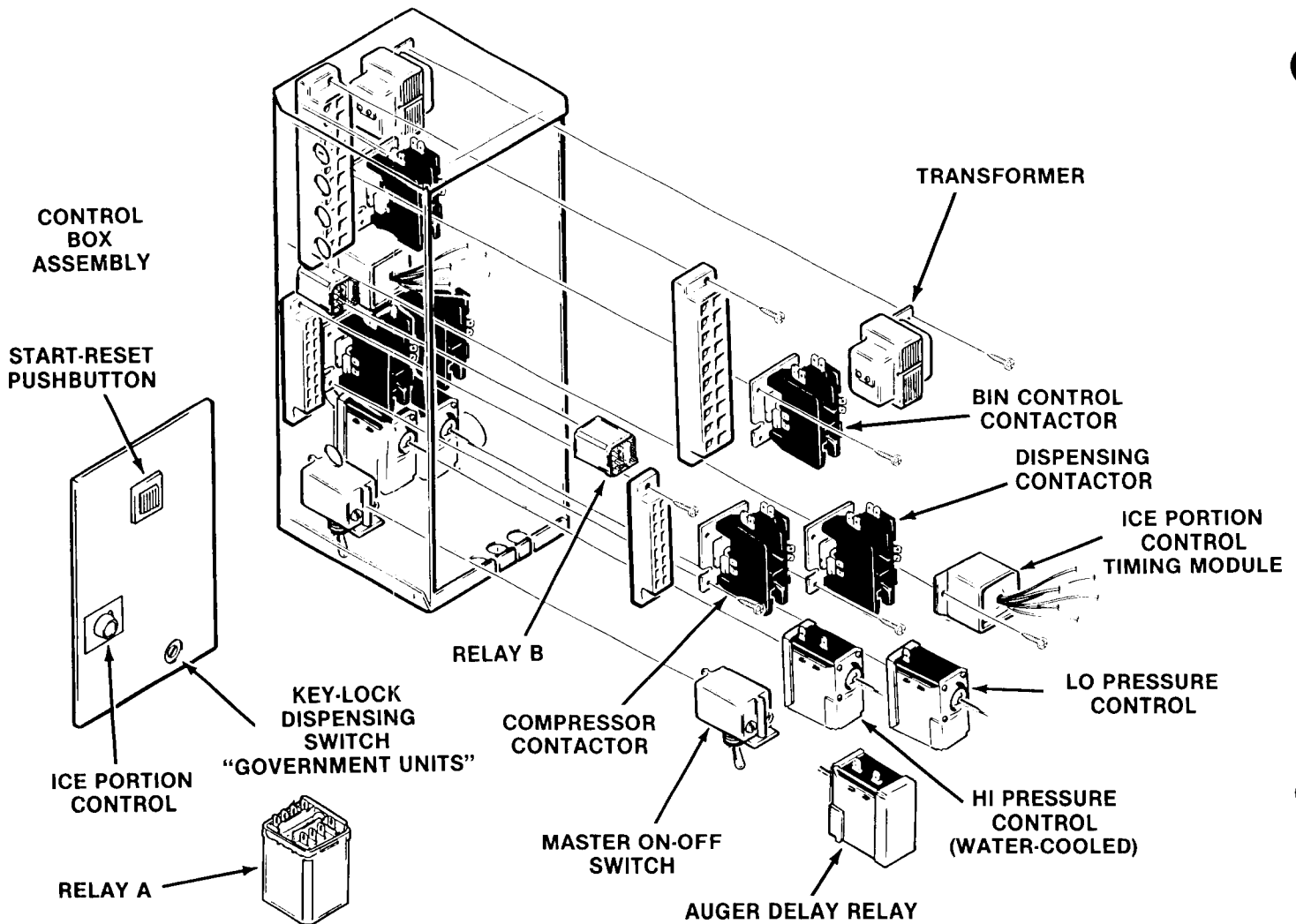
BIN DRIVE MOTOR

The bin drive motor and reduction gear assembly, located below the bin, is controlled with the ice vend switch and portion control timing module. The bin drive motor rotates the inner bin and ice supply to vend a metered amount of ice.

SHUTTER ACTUATOR ASSEMBLY (See page 16)

Activated by pushing ice glass filler lever. Motor operates opening shutter, cam action and switches control this movement. When ice vend is complete, shutter closes.

HQD750 COMPONENT DESCRIPTION



COMPRESSOR CONTACTOR

A single-pole contactor is used to supply current to the compressor; and, is wired so any control in the pilot circuit, such as the bin control and high pressure control, etc., will cause the contactor coil to be de-energized, when the control contact OPENS, thereby breaking the circuit to the compressor through the contactor points.

ELBOW SAFETY SWITCH RELAY "A"

The elbow safety switch relay "A" maintains a circuit through the elbow safety switch until the elbow safety switch opens and switches the current through the lamp of the start reset pushbutton, which must be pushed and reset to restart the automatic icemaking process.

RELAY "B"

Relay "B" protects the compressor contactor from chattering during operation of the icemaking system.

ICE PORTION CONTROL TIMING MODULE

The ice portion control timing module operates in conjunction with the ice portion control Potentiometer and times the run of the bin drive motor to meter the amount of ice dispensed. This system is adjustable from approximately 1/2 ounce to continuous.

BIN CONTROL CONTACTOR

Controlled by the bin level control; controls the compressor contactor coil.

DISPENSING CONTACTOR

Controlled by the portion control module, controls the bin and auger drive motors.

KEY-LOCK DISPENSING SWITCH

On U.S. Government units only, controls ice dispensing circuit.

HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

////////////////////////////////////
A Scotsman Ice System represents a sizable investment of time and money in any company's business. In order to receive the best return for that investment, it MUST receive periodic maintenance.

It is the USERS RESPONSIBILITY to see that the unit is properly maintained. It is always preferable; and less costly in the long run, to avoid possible down time by keeping it clean, adjusting it as needed and by replacing worn parts before they can cause failure. The following is a list of recommended maintenance that will help keep your machine running with a minimum of problems.

Maintenance and Cleaning should be scheduled at a MINIMUM of twice per year.
////////////////////////////////////

DISPENSER

THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED EVERY THREE MONTHS ON THIS DISPENSER. CALL YOUR AUTHORIZED SCOTSMAN SERVICE AGENCY.

////////// WARNING //////////

During maintenance or cleaning procedures, it is sometimes necessary to observe, adjust or clean machinery or components while electrical power is ON. Extra care is required to prevent personal injury from electrical shock or moving parts.
////////////////////////////////////

1. Dispense all the ice from the bin.
2. Clean and sanitize the spout, bin level switch actuator, by using a solution of SCOTSMAN Ice Machine cleaner. Refer to CLEANING — Icemaker.
3. Sanitizing of the ice storage bin and related components should be scheduled once per week. See page 26.

NOTE

1. Cleaning requirements vary according to local water conditions and individual user operation.
2. During reassembly of parts, be sure to rotate the ice storage bin until it engages in the output coupling of the drivemotor.

ICEMAKER

THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED AT LEAST TWO TIMES PER YEAR ON THIS ICEMAKER. CALL YOUR AUTHORIZED SCOTSMAN SERVICE AGENCY. COMBINE THIS SERVICE WITH CLEANING OF THE DISPENSER, WHEN POSSIBLE.

1. Check and clean any water line strainer.
2. Remove cover from water reservoir and depress the float to ensure that a full stream of water enters the reservoir.
3. Check that the dispenser is level, in the side-to-side and front-to-back directions.

4. Check that the water level in the water reservoir is below the overflow, and level with the molded line on the side of the reservoir.

NOTE: It is normal for some water to emerge from the ice spout with the ice during normal ice production.

5. Clean the water reservoir and interior of the freezer assembly, using a solution SCOTSMAN Ice Machine Cleaner. Refer to CLEANING — Icemaker.

NOTE: Cleaning requirements vary according to local water conditions and individual user operation. Visual inspection of the auger before and after cleaning will indicate frequency and procedure to be followed in local areas.

6. When doubtful about refrigerant charge, install refrigerant gauges on Schrader valves and check gauge for compressor head pressure:
AIR-COOLED MODELS: Varies between 130 and 145 PSIG.
WATER-COOLED MODELS: Set at 135 PSIG. Adjust screw on top of water regulator valve to raise or lower head pressure.

7. Check gauge for suction line pressure:

Varies between 10 to 12 PSIG, depending upon inlet water temperature and ambient air temperature.

AFTER SERVICING REFRIGERATION SYSTEM: TORQUE REFRIGERATION ACCESS VALVE CAPS TO 60-75 INCH POUNDS.

8. Check the elbow safety switch by removing the insulation halves, twisting the locking ring 90° and pulling out the switch assembly. The switch action can then be tested.

NOTE

The elbow safety switch is an ON-OFF switch that shuts off the compressor when an ice jam presses against the rubber diaphragm depressing the switch and opening the circuit. Melting action relieves pressure closing the circuit, lighting the start-reset pushbutton. The start-reset switch must then be pressed to start the automatic icemaking process.

HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

9. Check drivemotor operation, check for noise and amp draw, compare to unit nameplate. Normal motor operating temperatures are very hot to touch.
10. Oil drivemotor once per year.

//////////////////// **WARNING** //////////////////////

Disconnect electrical power supply before removal procedures.



NOTE

BEFORE next step, move the manual ON-OFF toggle switch, on the bottom of the control box, to the OFF position to stop the fan motor and the icemaker.

11. Clean the air-cooled condenser, using vacuum cleaner, whisk broom or brush. DO NOT USE A WIRE BRUSH. Instruct customer to clean the condenser frequently; and to BE SURE the icemaker and fan motor are OFF.
12. Check that the fan blades move freely, are not touching any surfaces, and are not bent or out of balance. Wipe off any accumulation of dust or grease.
13. Check for refrigerant leaks and for proper frostline, which should frost out of the accumulator to within no closer than eight to twelve inches of the compressor.
14. Check for water leaks and tighten drain line connections. Pour water down bin drain to be sure that drain line is open and clear.
15. Check the quality of ice. Ice particles should be wet when formed, but will cure rapidly to high quality hard bits of ice in the bin.
16. Check the bin ice level switch.

NOTE

The bin ice level switch is an ON-OFF switch, that shuts OFF the compressor, when the ice level control pushes the switch IN. When the action of the bottom hinge releases the actuator arm, the switch CLOSES the circuit and RESTARTS the icemaking process.

17. Check the spout safety switch.

NOTE

The spout safety switch is manually reset and functions to immediately STOP the icemaking process if the bin ice level switch were to fail and begin to cause ice to jam up in the spout. Once SHUT OFF, the spout safety switch is reset, when the actuator plate is released from the locking bracket, which holds the plate tight against the depressed actuator arm of the spout safety switch.

(Continued)

HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

NOTE

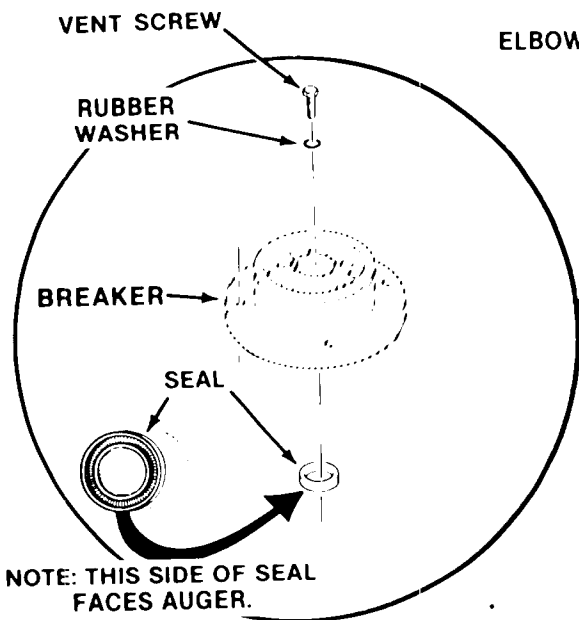
If the unit being serviced is equipped with a **STEEL NEEDLE** bearing, the breaker assembly should be **REPLACED**. Contact your local Scotsman Distributor for further information. Breakers with a **NON-METALLIC** bearing should be cleaned and the seal replaced **ONCE PER YEAR**. If the type of breaker bearing is not known, the breaker should be inspected. All A and B models were equipped with steel needle bearings. Most C Models have the non-metallic bearings.

23. Replace the lip seal and inspect the top bearing seated in the ice breaker, wipe clean of mineral build up. Remove auger. Check seal and check auger for stains.

CAUTION

DO NOT force the auger and breaker together without having the vent hole open because pushing the breaker on with no air relief will cause the internal air pressure to force the grease seal away from the breaker.

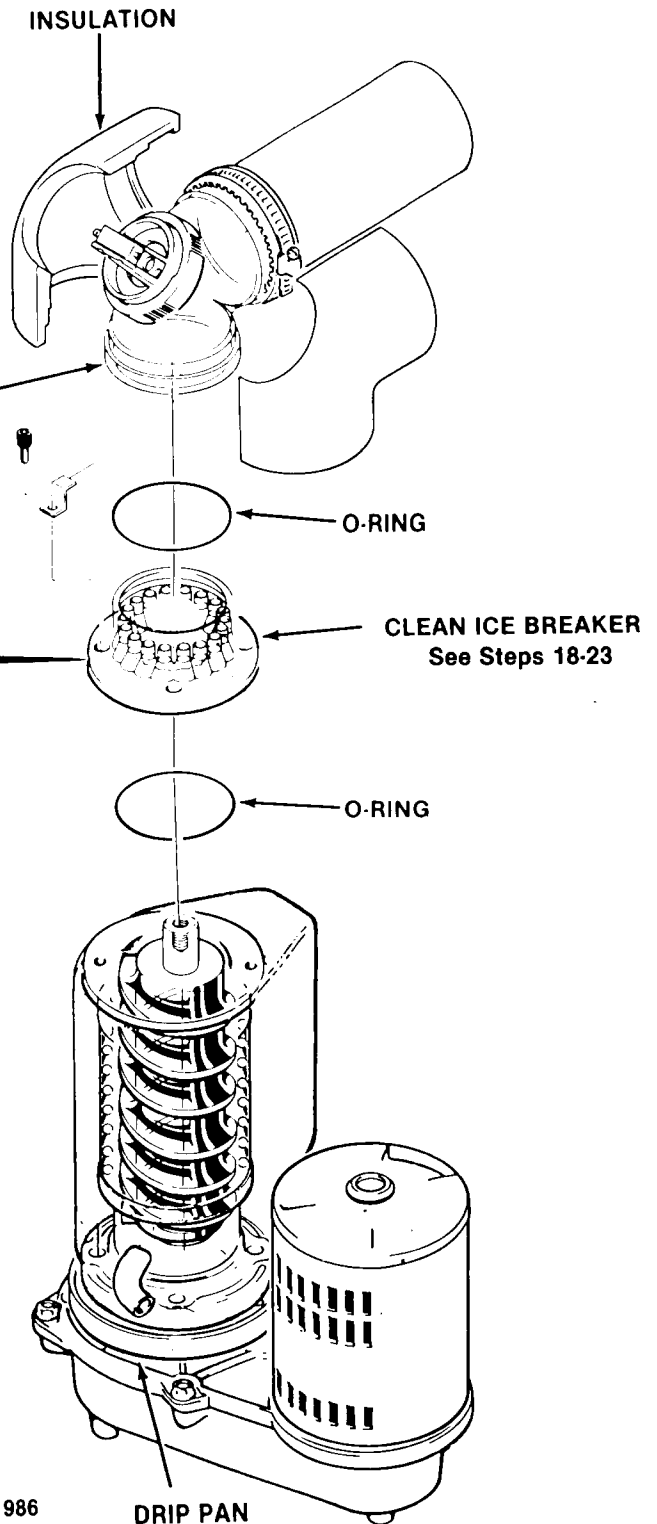
18. Remove elbow insulation and remove three Allen head screws and spout retaining brackets from the freezer assembly end of the elbow and switch assembly.
19. Remove three Allen head screws and spout retaining brackets from the freezer assembly end of the elbow and switch assembly.



NOTE

In order to accomplish removal of the elbow and switch assembly in the next step, it may be necessary to further remove panels and disassemble the ice transport tube.

20. Lift the elbow and switch assembly and set aside to gain access to the top of the freezer assembly.
21. Remove four capscrews, lockwashers and the ice breaker assembly from the top of the freezer assembly for inspection.
22. Retain the O-ring for replacement during reassembly. Inspect the O-ring for cuts, tears or excessive wear, causes for replacement.



HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

CLEANING ICEMAKER

1. Dispense all ice from ice storage bin.
2. Pull the left front panel out and rotate to OPEN.
3. Move the manual ON-OFF toggle switch, on the bottom of the control box, to the OFF position.
4. Remove screws and the left side panel.
5. Block the float up in the water reservoir.
6. Drain the water reservoir and freezer using drain tube attached to the freezer inlet tube. Return drain tube to normal operating position and replace end cap.

WARNING

SCOTSMAN Ice Machine Cleaner contains Phosphoric and Hydroxyacetic acids. These compounds are corrosive and may cause burns. If swallowed, DO NOT induce vomiting. Give large amounts of water or milk. Call Physician immediately. In case of external contact, flush with water. KEEP OUT OF THE REACH OF CHILDREN.

WARNING

7. Prepare cleaning solution: Mix eight ounces of SCOTSMAN Ice Machine cleaner with 3 quarts of hot water.
8. Slowly pour the cleaning solution into the water reservoir until full.
9. Move the manual ON-OFF toggle switch, on the bottom of the control box, to the ON position.
10. Slowly pour the remaining solution into the water reservoir; maintaining a level just below the reservoir overflow.
11. Continue icemaking procedure until all the solution is used up and the water reservoir is almost empty. DO NOT allow the icemaker to operate with empty reservoir.
12. Move the manual ON-OFF toggle switch, on the bottom of the control box, to the OFF position.
13. Wash and rinse the water reservoir following procedure from Step 7.
14. Remove the block from the float in the water reservoir.
15. Move the manual ON-OFF toggle switch, on the bottom of the control box, to the ON position.

16. Continue icemaking for at least 15 minutes, to flush out any cleaning solution. Check ice for acid taste - continue making until ice tastes sweet.

CAUTION

DO NOT use ice produced from the cleaning solution. Be sure no ice remains in the cylindrical storage bin.

CAUTION

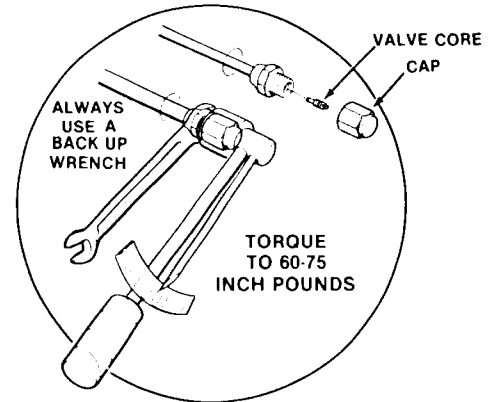
17. Dispense all ice produced from the cleaning solution from the ice storage bin.
18. Move the manual ON-OFF toggle switch, on the bottom of the control box, to the OFF position.
19. Loosen two wing head screws and rotate the right door assembly to OPEN.
20. Remove the cap nut from the center of the cylindrical ice storage bin and lift up and remove the cylindrical ice storage bin.
21. Remove all ice from bottom of the cylindrical storage bin and the auger-dispensing mechanism.
22. Add hot water to the cylindrical storage bin and the auger-dispensing mechanism; and, thoroughly wash and rinse all surfaces within the bin.
23. Clean and sanitize the cylindrical storage bin and the auger-dispensing mechanism each week. Refer to SANITIZING.

(Continued)

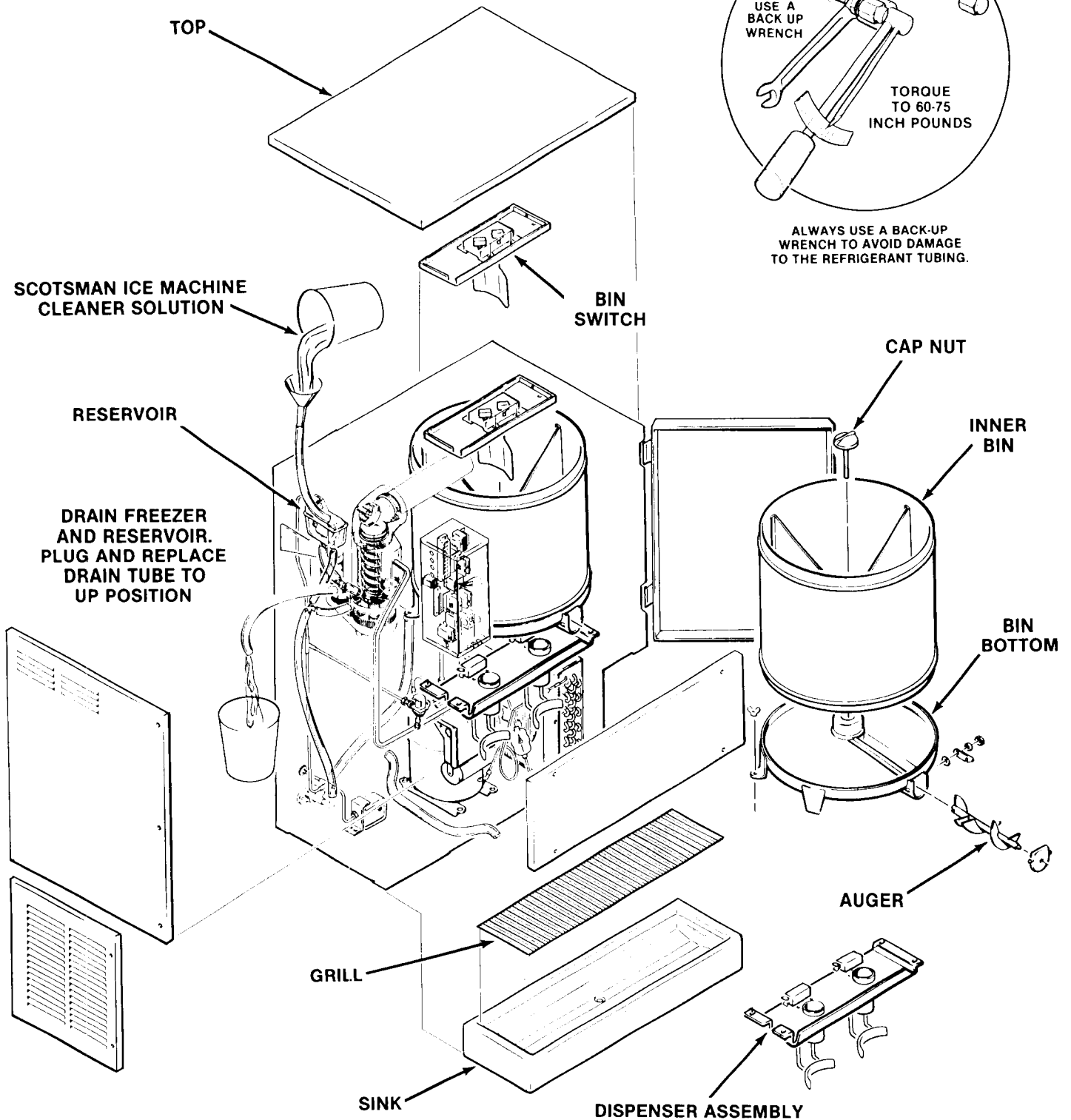
HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

NOTE: Door must be closed to make ice and clean icemaker.

TO SERVICE REFRIGERATION SYSTEM:
TORQUE REFRIGERATION ACCESS VALVE
CAPS TO 60-75 INCH POUNDS.



ALWAYS USE A BACK-UP
WRENCH TO AVOID DAMAGE
TO THE REFRIGERANT TUBING.



HQD750 MAINTENANCE AND CLEANING INSTRUCTIONS

SANITIZING

Sanitizing is an important phase of the icemaking and dispensing operation. The following sanitizing procedure should be performed after every repair or replacement of parts in the HQD750 in/or through which water flows or drains and ice is made, spouted, stored or dispensed. Additional requirements for performing the sanitizing procedure should be followed in accordance with the requirements of the local Health Authorities.

//////////////////// **WARNING** //////////////////////

Read **WARNING** thoroughly **BEFORE** preparing sanitizing solution, in next step.

1. STERILAX 3-Q SANITIZING TABLETS.

DANGER: KEEP OUT OF REACH OF CHILDREN. Tablets may be harmful or fatal if swallowed. May cause skin irritation or eye damage. Avoid prolonged skin contact. Do not get in eyes. In case of contact, flush with plenty of water. If irritation persists get medical attention. Avoid contamination of food.

FIRST AID: If tablets are swallowed, drink promptly a large quantity of milk, egg whites or gelatin solution. Avoid alcohol.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulator shock, respiratory depression and convulsion may be needed.

Rinse empty carton container thoroughly with water and discard. Always follow your health department regulation.

2. MIKRO-QUAT

DANGER: Causes high damage and skin irritation. Do not get into eyes, or on skin, or on clothing. Protect eyes when handling concentrated product. Harmful if swallowed. Avoid contamination of food.

FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. For eyes, call a physician. Remove and wash contaminated clothing before reuse. If swallowed, drink promptly a large quantity of milk, egg whites or gelatin solution, or if these are not available, drink a large quantity of water. Call physician immediately.

NOTE: Contact your local Health Authorities and obtain their approval of the sanitizer you intend to use when sanitizing the HQD750.

Prior to performing the sanitizing procedure, it is assumed the cleaning procedure has been performed.

1. Prepare one gallon of sanitizing solution composed of 450 PPM active quaternary ammonium germicide solution, using a quaternary ammonium sanitizing solution.

NOTE: Carefully follow directions and observe all precautions on the container of the compound.

Three *Sterilax 3-Q sanitizing tablets per gallon of water; or, 2/3 ounce of *Mikro-Quat per gallon of water will yield a solution of about 450 PPM active quaternary.

2. Immerse the parts in the sanitizing solution and wash the parts, flushing the solution thoroughly in, over and through all parts and surfaces of the HQD750 parts being sanitized.
3. Allow the parts to drain and air dry.
4. Replace the sanitized parts in the reverse order of removal.

*Sterilax 3-Q sanitizing tablets are distributed by Pittsburgh Chemical Laboratory, Inc., Pittsburgh, PA 15222, and may be obtained through most restaurant supply houses.

*Mikro-Quat is manufactured by Economics Laboratory, Inc., Osborn Building, St. Paul, MN 55102, and may be obtained from them through their Magnus Division, The Klensade Division, or from restaurant supply houses.

HQD750 MAINTENANCE & CLEANING INSTRUCTIONS

CHLORINATION OF STAINLESS STEEL BIN LINERS

The stainless steel part of a bin will require periodic cleaning. Chemicals in the water supply, such as chlorine, can cause brown staining to appear on the surface of stainless steel. The brown stains should be removed immediately to avoid deterioration of the metal. Chlorine gas, coming off the ice in the bin will combine with water vapor and condense on the liner walls and pit the stainless steel.

The brown stains will appear at the top of the bin. Lower portions of the bin stay clean, due to the "washing" action of water from melting ice draining down it.

To prevent the staining from causing pitting of the stainless steel, the bin liner should be cleaned every three to six months. More frequent cleaning may be required depending on water conditions.

1. General Cleaning — when the staining is light, it can usually be removed by washing with ordinary cleaning powder, such as Bon-Ami or Copper-Glo and water. (Do not use cleaners that contain bleaching agents, as most of these are compounds of chlorine.) After cleaning, rinse thoroughly with clear water.

It may be necessary to use a stainless steel wool to remove bad stains. DO NOT USE plain steel wool, as the steel particles will get imbedded in the liner and cause more serious staining.

2. Cleaning of Heavy Deposits — If the bin has not been cleaned for a long time, and heavy deposits and pitting have occurred, a chemical cleaner may be necessary. Follow instructions printed on the container of the cleaner.
3. Water treatment — chlorine can be removed from the ice machine's water source. This is accomplished by installing an activated carbon filter on the ice machine's inlet water line. Please consult your local water treatment specialist, other water treatment may be advised due to other possible water problems.

HQD750 SERVICE DIAGNOSIS

The Service Diagnosis Section is for use in aiding the serviceman in diagnosing a particular problem for pin-pointing the area in which the problem lies, thus an ever available reference for proper corrective action.

The following charts lists corrective actions for the causes of known symptoms of certain problems that can occur in the Dispensing System and the Icemaking - Refrigeration System.

DISPENSING SYSTEM

SYMPTOM	POSSIBLE CAUSE	CORRECTION
No water is dispensed.	Electrical power OFF.	Connect electrical power.
	Building water valve off.	Open valve.
	Defective water vend switch.	Replace switch.
	Defective water solenoid valve.	Replace defective valve.
No ice is dispensed.	Ice bin empty.	Check refrigeration system.
	Defective ice vend switch.	Replace switch.
	Broken or disconnected linkage.	Replace linkage.
	Bin drive motor defective.	Check, replace if defective.
	Jam in ice chute.	Remove obstruction.
Portion control does not operate properly. Continues to operate when glass filler lever assembly is held IN.	Timing module defective.	Replace defective timing module.
	Potentiometer switch defective.	Replace defective potentiometer.
	Loose connections or open wire leads to potentiometer.	Check terminal wiring, tighten connection, repair wiring.
Icemaker will not run, red light on.	Bin has over filled due to:	
	Failed bin switch.	Replace switch.
	Compressor contactor stuck on.	Replace contactor.
	Bin switch differential too short - unit cuts in too soon.	Replace switch.
	Holding relay has been de-energized due to:	
	Power interruption.	Check power supply.
	Voltage drop at a holding circuit switch.	Check all switch contacts in holding circuit.

(Continued)

HQD750 SERVICE DIAGNOSIS

SYMPTOM	POSSIBLE CAUSE	CORRECTION
When glass filler lever assembly is pushed, ice shutter does not open.	Lever assembly does not depress plunger of microswitch.	Loosen two hex nuts on microswitch and adjust to LOWER the plunger.
	Defective actuator microswitch.	Replace microswitch.
	Loose thumb screws.	Tighten thumb screws.
	Ice shutter rubs on plastic bin liner.	Remove shutter and install washer on shaft to raise shutter.
	Actuator rod is bent.	Replace actuator rod. Do not attempt to bend rod to adjust.
	Actuator motor or relay defective.	Check motor & relay and replace if defective
	Actuator motor cam on No. 1 switch needs adjustment or is defective.	Adjust or replace defective part.
When glass filler lever assembly is pushed, ice shutter opens, but nothing is dispensed.	Shutter motor relay is defective.	Replace defective relay.
	Cam switch of shutter control box out of adjustment or is defective.	Adjust or replace cam switch.
	Vend relay in control box is defective.	Replace defective relay.
	Vend switch out of adjustment or is defective.	Adjust switch or replace defective part.
	Timing module in control box is open.	Check, replace if defective.
	Bin drive motor is defective.	Check, replace if defective.
	Auger drive motor is defective.	Check, replace if defective.
	Ice jammed in discharge spout.	Remove auger and clear ice from spout and auger.
Pin securing bin drive hub to shaft of drive unit motor, sheared.	Replace sheared pin.	
Ice auger will not rotate.	Drive end of auger is sheared.	Remove and replace auger.
	Auger drive motor does not turn.	Remove and replace auger drive motor.
Vend relay energized, but no ice is dispensed.	Contacts on relay bent, or wire leads to relay loose.	Replace Relay. Tighten wire lead connections.
	Bin drive unit motor defective.	Repair or replace defective motor.
	Ice auger motor defective.	Repair or replace defective motor.
Ice shutter opens and closes continuously, motor will not stop.	Cam switches out of adjustment.	Adjust three cam switches as necessary.
	Brake on shutter motor worn.	Replace shutter motor.

HQD750 SERVICE DIAGNOSIS

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Water Leaks.	Defective water seal. Gravity feed line leaking. Water level in reservoir too high. Storage bin drain and connecting fittings.	Replace seal. Check hose clamp. Adjust water level to molded line on the float assembly. Check and repair.
Excessive noise or chattering.	Mineral or scale deposit on auger and inner freezing chamber walls. Intermittent water supply. Water level in reservoir too low. Gear reducer loose on frame. Motor compressor not solid on rubber mounts. Gearmotor thrust bearing worn. Top bearing worn. Water interruption.	For severe deposit, remove and manually polish auger, sand inner chamber walls of freezer barrel. For lighter concentration, use Scotsman Ice Machine Cleaner periodically. Check and clean water strainer. Check gravity feed line for air lock. Check to be sure float orifice is not restricted Check incoming water supply. Remove air lock. See CORRECTION for Water Leaks above. Tighten gear reducer. Repair or replace rubber mounts. Check/replace bearing. Check/replace breaker. Check for frozen water inlet to freezer.
Drivemotor makes high pitched noise.	Rotor bearing dry or worn. Dry grease seal under rotor bearing.	Replace motor or bearing. Grease seal.

HQD750 SERVICE DIAGNOSIS

ICEMAKING — REFRIGERATION SYSTEM

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Low ice production.	Loss of refrigerant. Under or over-charge of refrigerant.	Check system and recharge. See NAMEPLATE for correct charge.
	Drive motor weak.	Replace drivemotor.
	Dirty or plugged condenser.	Clean condenser.
	Low water level in reservoir.	Check float.
	Partial restriction in capillary tube or drier.	Moisture in system. Overcharge of oil in system. Remove charge, by blowing back thru cap tube. Replace drier and recharge. See NAMEPLATE.
	Optional water strainer partially plugged.	Remove and clean strainer screen.
	Corroded to stained auger, due to water condition. Lime build up in freezer.	Remove and clean auger, or use SCOTSMAN Ice Machine Cleaner. See Maintenance & Cleaning.
Icemaker operates, but makes no ice.	Loss or undercharge of refrigerant.	Check for gas leaks, evacuate & recharge.
	Water not entering freezing Chamber. Plugged strainer or water inlet line.	Check and clean. Check, remove possible air lock in gravity feed line.
	Moisture in system.	Check, evacuate, replace drier, SEE NAMEPLATE & recharge system.
	Water seal leaks.	Replace water seal.
	Water turned OFF while icemaker was operating.	Freezer inlet water line froze shut. Shutdown and defrost icemaker.
Icemaker will not operate.	Manual safety switch tripped.	Reset switch.
	Blown fuse.	Replace fuse and check for cause of blown fuse.
	Low pressure control activated.	Check for cause.
	Head pressure control activated.	Check cause of decreased or loss of water to water-cooled condenser.
	Bin ice level switch stuck, pushed IN.	Repair or replace switch.
	Electrical power disconnected.	Connect electrical power ON.

HQD750 ADJUSTMENT PROCEDURES

ADJUSTMENT OF THE LEG LEVELERS

When the Icemaker/Dispenser is ordered with the optional DMS31 Machine Stand, the cabinet must be leveled in the front-to-back and side-to-side directions. This adjustment should be performed during initial installation of the cabinet and anytime the cabinet is moved from the original location of another site.

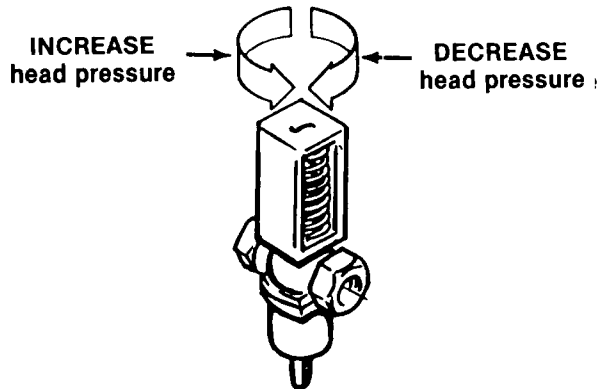
1. Using a 1-1/8" open-end wrench, and a carpenter's bubble level, rotate the threaded leveler in each leg to RAISE or LOWER the cabinet until the cabinet is level in the front to back direction.
2. Repeat step A, for leveling in the side-to-side direction.
3. Recheck both the front-to-back and the side-to-side leveling and repeat adjustments, as necessary.

ADJUSTMENT OF THE WATER REGULATOR ASSEMBLY

The correct head pressure on water-cooled models is 135 PSIG. Adjustments can be performed on the water regulator assembly to increase or decrease the head pressure.

To adjust the water regulator assembly:

1. To INCREASE the head pressures: Rotate the adjusting screw, on the water regulator assembly COUNTER-CLOCKWISE.
2. To DECREASE the head pressure: Rotate the adjusting screw, on the water regulator assembly CLOCKWISE.



ADJUSTMENT OF THE WATER RESERVOIR FLOAT

The correct water level in the water reservoir should be at the level of the raised molded line, on the side of the body of the water reservoir. When the water line level is above or below the raised molded line, adjustment can be performed to raise or lower the water level by bending the metal arm of the float inside the water reservoir.

To adjust the water reservoir float:

1. To RAISE the water level:
Hold one end of the metal arm of the float and slightly bend the float up.
2. To LOWER the water level:
Hold one end of the metal arm of the float and slightly bend the float DOWN.
3. To perform MAJOR adjustment:
When repair or replacement has been performed and the water level line between the water reservoir and the freezer assembly has been substantially altered:
 - a. Loosen the three screws and lockwashers which attach the reservoir bracket and water reservoir to the frame.
 - b. Move the reservoir bracket UP or DOWN to properly position the water line level should be flush with the top of the auger flights.
 - c. When proper water level within the freezer is adjusted, re-tighten screws attaching the water reservoir bracket to the frame mount.

HQD750 ADJUSTMENT PROCEDURES

ADJUSTMENT OF THE SHUTTER MOTOR SWITCHES

NOTE

Adjustment of the shutter motor switches should not be performed by anyone other than a qualified serviceman.

Illustration A shows the positions of the cam and actuator arms of the switches within the shutter actuator assembly, when the ice shutter is in the CLOSED position, the dispenser in the STANDBY condition.

Illustration B shows the positions of the cam and actuator arms of the switches within the shutter actuator assembly, when the ice shutter is in the OPEN position, the dispenser in the ice VEND condition.

Adjustment to the cam switches can correct the following potential problems:

A. SHUTTER CONTINUES TO OPERATE (When glass filler lever is PUSHED IN):

1. CAUSE: Cam Switch-1 actuator arm DOES NOT touch cam for complete cycle.
2. ADJUSTMENT: Loosen screws on stacked switches and move cam switch-1 toward cam, or bend actuator arm, so cam depresses arm same as cam switch-2, tighten screws.

B. SHUTTER CONTINUES TO OPERATE (After glass filler lever has been released):

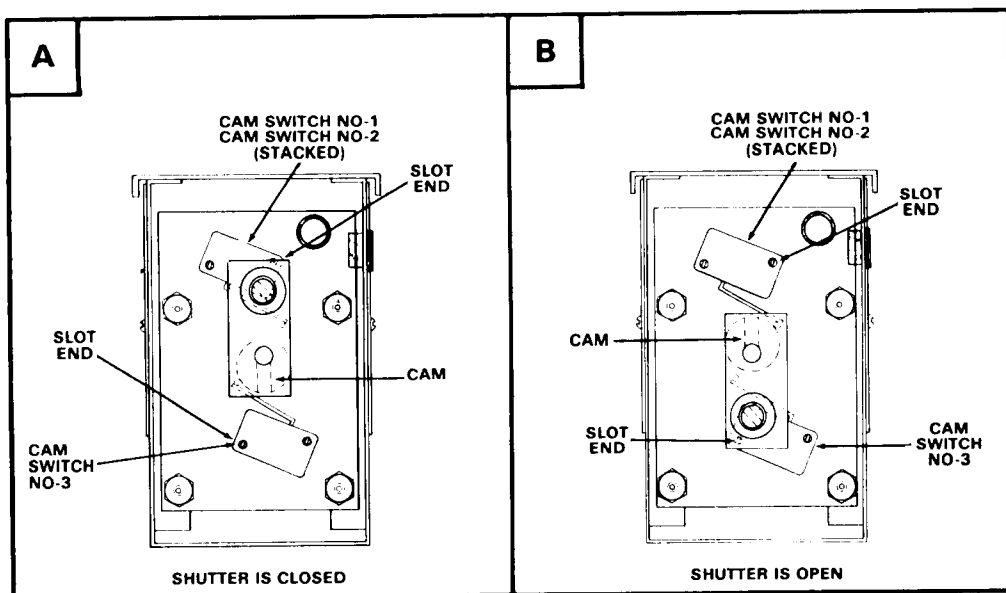
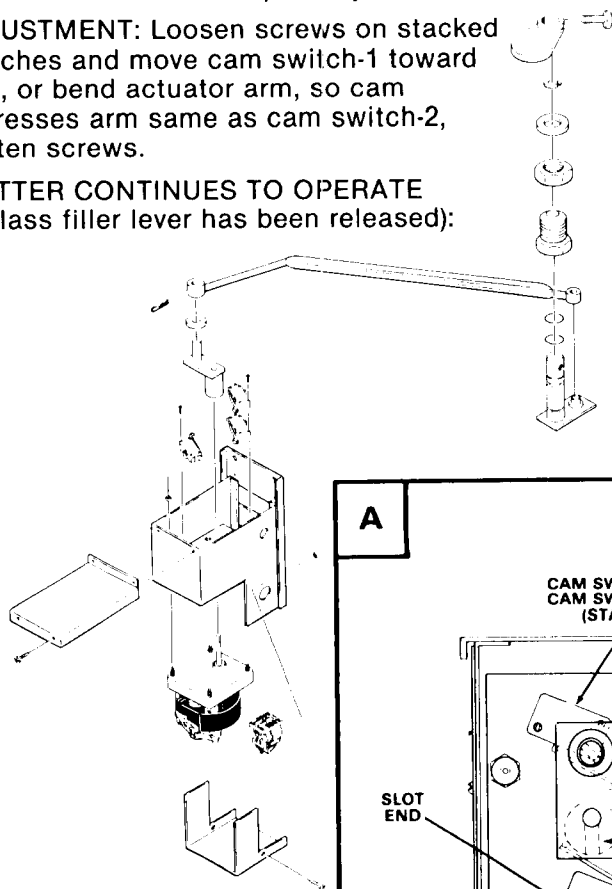
1. CAUSE: Cam switch-3 actuator arm DOES NOT touch cam for complete cycle.
2. ADJUSTMENT: Loosen screws on cam switch-3 and move cam switch-3 toward cam, or bend actuator arm, so cam depresses arm, tighten screws.

C. SHUTTER DOES NOT OPERATE (When glass filler lever is PUSHED IN):

1. CAUSE: Cam switch-1 actuator arm is DEPRESSED by cam, in STANDBY condition.
2. ADJUSTMENT: Loosen screws on stacked switches and move cam switch-1 away from cam, or bend actuator arm, so arm is NOT depressed, DOES NOT touch CAM, tighten screws.

NOTE

Cam Switch #1 is the bottom switch of the stacked switches.



HQD750 REMOVAL AND REPLACEMENT PROCEDURES

HQD750's have been manufactured in "A" and "C" Models (as in model HQD750AE-1A vs. HQD750AE-1C.) The following instructions are designated for either "A" or "C" models. Be certain to check your model number and refer to the appropriate steps.

Read the instructions thoroughly before performing any Adjustment or Removal and Replacement Procedures.

////////// WARNING //////////

Be sure the electrical power supply and the water supply are OFF, BEFORE starting any of the following REMOVAL AND REPLACEMENT procedures as a precaution to prevent possible personal injury or damage to equipment.

////////////////////////////////////

REMOVAL AND REPLACEMENT OF THE AUGER, WATER SEAL, O-RING, ICE BREAKER ASSEMBLY AND FREEZER ASSEMBLY (A and C MODELS)

To remove the auger, water seal, o-ring and ice breaker assembly:

1. Shut off water supply to the icemaker/dispenser at the building source.
2. Disconnect or shut-off electrical power to the icemaker at the building source.
3. Push UP to unsnap catches and remove the top panel.
4. Pull the left front panel out and rotate to OPEN.
5. Loosen two wing head screws and rotate the door assembly to OPEN.
6. Remove screws and the left side panel.
7. Loosen screws on the slotted spout mounting plate, so the plate can be moved up and down in the slots. See illustration.
8. Remove three socket head screws and spout retaining brackets from the end of the spout assembly at the top of the freezer assembly.

NOTE

In order to accomplish removal of the spout in the next step, it may be necessary to remove all screws from the slotted spout mounting plate and the spout entry plate and slide these plates away from the hole in the left wall of the inner cabinet.

9. Separate insulation halves and remove from the elbow safety switch.
10. Remove three socket head screws and spout retaining brackets from the end of the spout assembly at the top of the freezer assembly.

11. Lift the elbow safety switch and spout UP, off of the freezer assembly.
12. Retain the o-ring for replacement during reassembly. Inspect for cuts, tears or excessive wear, causes for replacement.
13. Remove four capscrews, lockwashers and the ice breaker assembly from the top of the freezer assembly.

To remove ice breaker only, omit steps 14 thru 26.

14. Remove hose clamp and disconnect the water feeder tube from the reservoir, at the freezer to drain the reservoir and freezer of water.
15. Retain the o-ring for replacement during reassembly. Inspect for cuts, tears or excessive wear, causes for replacement.
16. Remove the auger. If necessary a bolt can be threaded into the top end of the auger from the freezer and a hand tool used to pull on the bolt to remove the auger.

To remove Water Seal only, omit steps 18, 19 and 20.

TO REMOVE FREEZER ASSEMBLY:

17. Pull back permagum around freezer base mounting bolts and remove four screws and flatwashers. Separate the freezer assembly, gasket and adapters, from the drivemotor assembly.
18. Bleed off or blow the refrigerant charge through the Schrader valve.
19. Unsolder and disconnect the refrigerant suction line at the compressor, and the associated capillary line at the drier.
20. Remove the freezer assembly from the chassis.

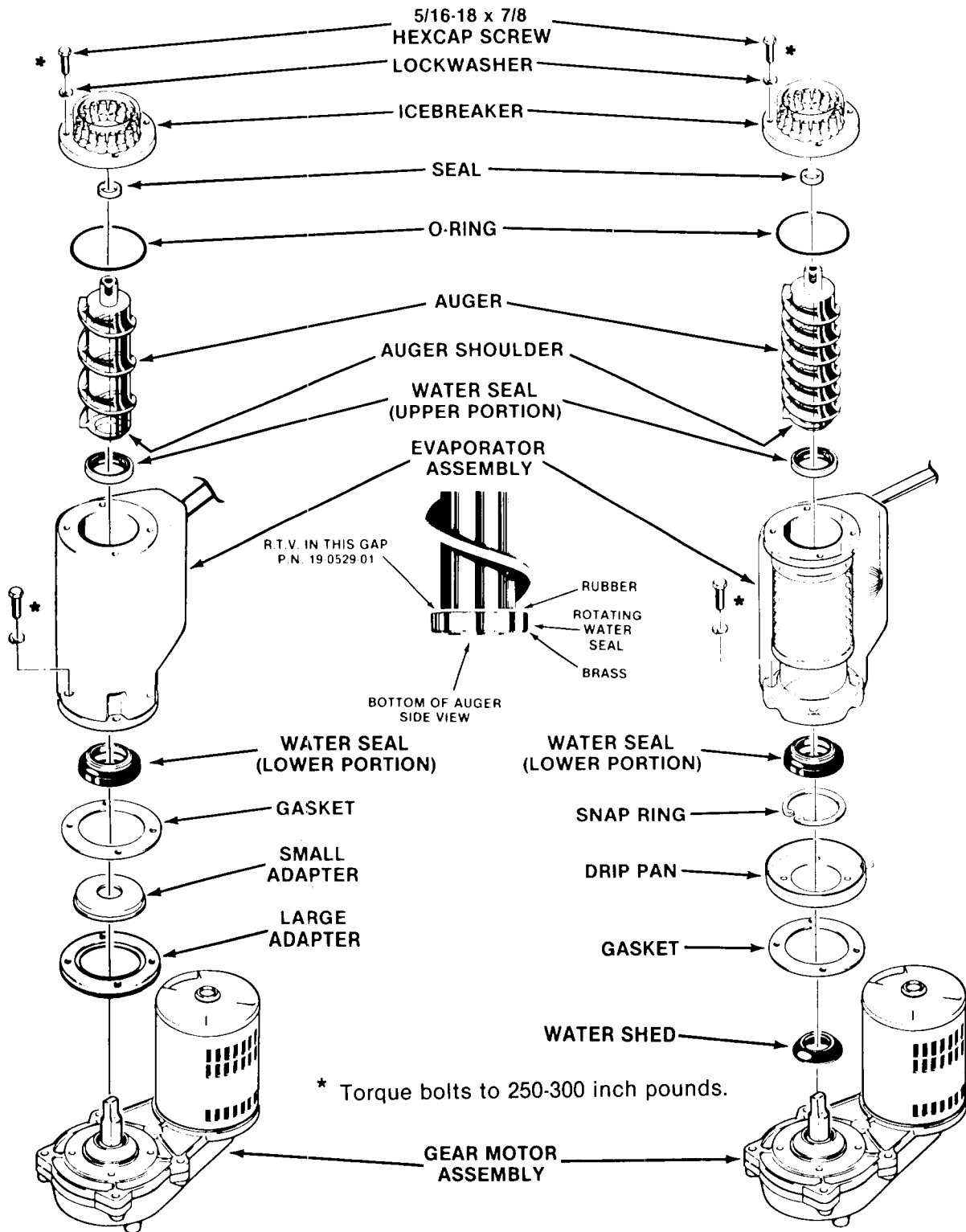
A MODEL

21. Using a suitable length and size wooden dowel or stick inserted through the top of the open freezer assembly, tap the stationary piece water seal out the bottom of the freezer assembly.

C MODEL

21. Remove snap ring from inside bottom of evaporator assembly. Using a suitable length and size of wooden dowel or punch inserted through the top of the open freezer assembly, tap the stationary portion of the water seal out the bottom of the freezer assembly.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES



A and B MODELS

C MODEL

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

22. Replace the water seal any time it has been removed.

//////////////////// **CAUTION** //////////////////////

The lower two-part water seal is a precise seal and fitting. Any damage or wear will cause a failure. It is recommended that the lower two-part water seal be replaced any time there is a question of condition.

////////////////////////////////////

A MODEL

23. Replace the parts starting with the stationary part of the water seal. Carefully inspect it prior to assembly. Insert this half of the water seal into the bottom of the freezer. Then insert the brass freezer adapter into the bottom of the freezer tube and push it in as far as it will go.

C MODEL - OR REPLACEMENT FREEZER

23. Replace the new stationary portion of the two-part water seal in the bottom of the freezer assembly and press in far enough to install the snap ring. **IMPORTANT:** pull water seal back down against snap ring all the way around the freezer.

A MODEL

24. Mount the freezer and gasket to the gear motor case. Be certain that the gearmotor is in good working condition and that the large plastic adapter is in place on the gearbox.

C MODEL - OR REPLACEMENT FREEZER

24. Mount the freezer, drip pan and gasket to the gearmotor case. Check to be sure the gearmotor is in good condition and the water shed is in place around the output shaft.

25. Apply Scotsman part number 19-0529-01 RTV silicone rubber to the auger shoulder before pushing on the water seal. Place just enough silicone on to the auger, so that when the water seal is placed on the auger, the gap between the auger shoulder and water seal is completely filled with silicone.

The silicone must be allowed to "set-up" or dry on the surface before any water can be added to the freezer.

//////////////////// **CAUTION** //////////////////////

If any silicone gets onto the mating surfaces of the water seal, the seal is ruined, and cannot be used.

////////////////////////////////////

26. Install auger.

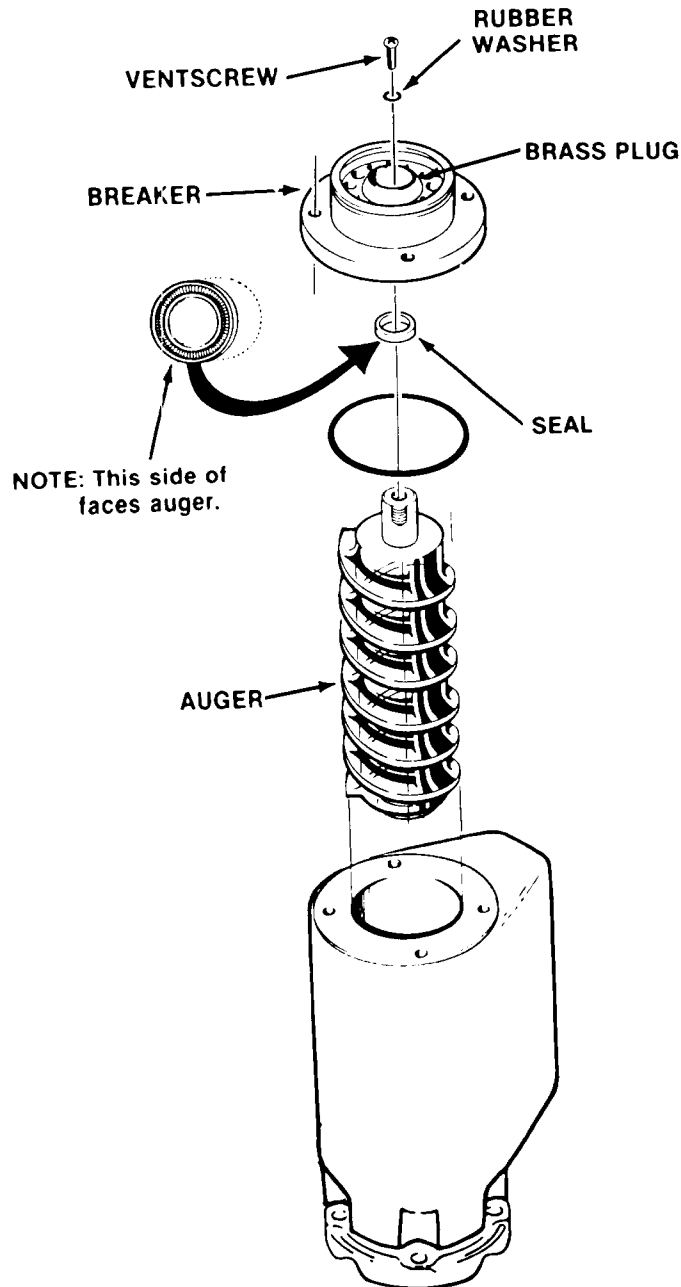
27. Install breakers, see page 37.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

//////////////////// CAUTION //////////////////////

DO NOT force the auger and breaker together without having the vent hole open because pushing the breaker on with no air relief will cause the internal air pressure to force the grease seal away from the breaker.

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HQD750 REMOVAL AND REPLACEMENT PROCEDURES

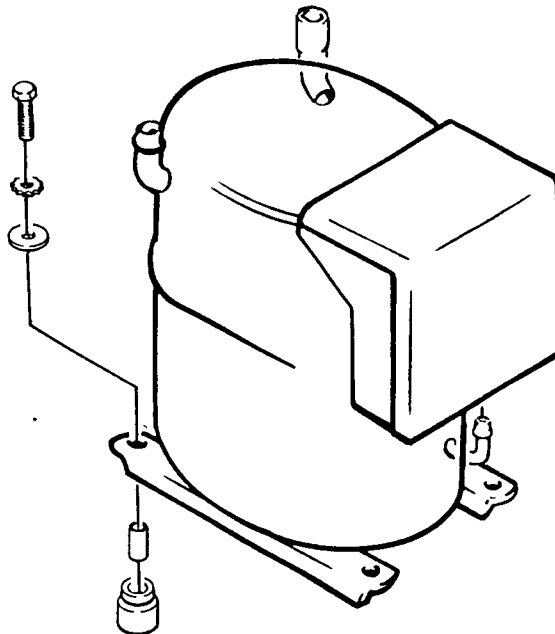
//////////////////// **WARNING** //////////////////////

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

////////////////////////////////////

REMOVAL AND REPLACEMENT OF THE COMPRESSOR ASSEMBLY

1. Remove five screws and the decor spout cover, carefully lowering the cover around the two dispensing assemblies.
2. Remove four thumbscrews and the entire dispensing assembly from the cabinet and disconnect electrical leads from the two switches.
3. Remove four screws and the backsplash assembly.
4. Lift the sink assembly to disengage from the left and right sink supports; then, remove hose clamp and disconnect drain hose, to remove the sink assembly and grill from the cabinet.
5. Remove the cover from the terminal box on the compressor; then, disconnect electrical leads from the compressor.
6. Bleed off or blow the refrigerant charge through the Schrader valve.
7. Unsolder the suction line from the compressor.
8. Unsolder the discharge line from the compressor.
9. Unsolder the process header tube from the compressor and retain for installation on the replacement compressor.
10. Remove four bolts, washers, mounting sleeves and grommets and the compressor from the chassis base.
11. Remove the compressor from the chassis.
12. To replace the compressor assembly, reverse the removal procedures.
13. When recharging the system with refrigerant, always check the nameplate for the specified refrigerant charge.



////////////////////////////////////

Always install a replacement drier, anytime the sealed refrigeration system is opened. Do not replace the drier until all other repair or replacement has been completed.

NOTE

////////////////////////////////////

Thoroughly evacuate the system to remove moisture and non-condensables.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

//////////////////// WARNING //////////////////////

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

////////////////////////////////////

REMOVAL AND REPLACEMENT OF THE CONDENSER — AIR-COOLED MODELS

1. Remove five screws and the decor spout cover, carefully lowering the cover around the two dispensing assemblies.
2. Remove four thumbscrews and the entire dispensing assembly from the cabinet and disconnect electrical leads from the two switches.
3. Remove four screws and the backsplash assembly.
4. Lift the sink assembly to disengage from the left and right sink supports. Then remove hose clamp and disconnect drain hose, to remove the sink assembly and grill from the cabinet.
5. Remove screws and remove lower side panel from right side of the dispenser.
6. Bleed off or blow the refrigerant charge through the Schrader valve.
7. Remove one screw and disconnect the drier brace and drier from the condenser shroud.
8. Unsolder and disconnect the condenser inlet tube at the condenser.
9. Unsolder and disconnect the condenser outlet tube at the condenser.
10. Remove three screws, lockwashers and washers securing the condenser to the chassis base.
11. Remove the condenser from the chassis base.
12. Remove screws and remove shroud from the condenser.
13. To replace the condenser, reverse the removal procedure.
14. When recharging the system with refrigerant always check nameplate for the specified refrigerant charge.

REMOVAL AND REPLACEMENT OF THE CONDENSER — WATER-COOLED MODELS

To remove the water-cooled condenser:

1. Shut off water valve connected to the water-cooled condenser inlet.
2. Remove five screws and the decor spout cover, carefully lowering the cover around the two dispensing assemblies.
3. Remove four thumbscrews and the entire dispensing assembly from the cabinet and disconnect electrical leads from the two switches.
4. Remove four screws and the backsplash assembly.
5. Lift the sink assembly to disengage from the left and right sink supports. Remove hose clamp.
6. Bleed or blow the refrigerant charge through the Schrader valve.
7. Unsolder the refrigerant inlet and outlet lines from the condenser.
8. Unsolder and disconnect the water inlet and outlet lines from the condenser.
9. Remove two bolts, lockwashers and washers which secure the condenser to the chassis mounting base.
10. Remove the condenser from the cabinet.
11. To replace the condenser, reverse the removal procedure.
12. When recharging the system with refrigerant always check nameplate for the specified refrigerant charge.

////////////////////////////////////

Always install a replacement drier, anytime the sealed refrigeration system is opened. Do not replace the drier until all other repair or replacement has been completed.

NOTE

////////////////////////////////////

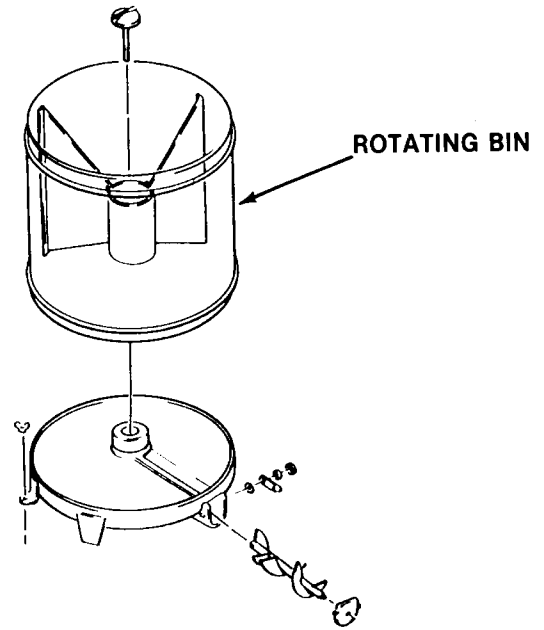
Thoroughly evacuate the system to remove moisture and non-condensables.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

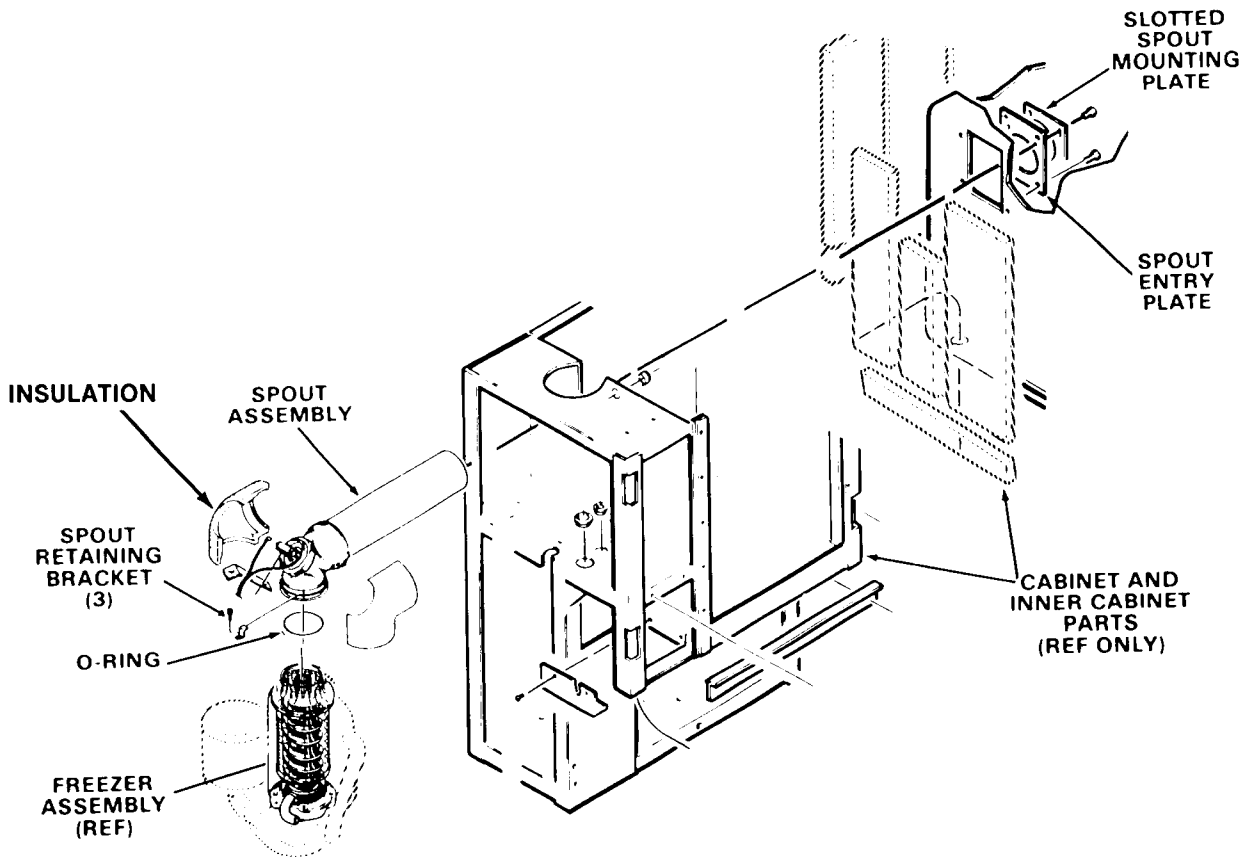
REMOVAL AND REPLACEMENT OF THE ROTATING BIN

To remove the rotating bin:

1. Remove left side panel by unscrewing 3 Phillips screws at the forward left edge of the panel and then pushing the panel back and up.
2. Remove main bin control lever by rotating pivot bar clockwise until against the top of the bin and pulling it out towards the front.
3. Remove insulation halves. Remove switch assembly from ice discharge elbow. Loosen 3 Allen screws retaining elbow to brass breaker, lift elbow up and rotate 90° (Loosen screws inside bin at spout entry plate to allow spout to move.) Pull ice discharge tube out.
4. Unscrew bin cap nut from bin and lift bin out of machine.



To replace, reverse removal procedures.



HQD750 REMOVAL AND REPLACEMENT PROCEDURES

//////////////////// WARNING //////////////////////

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

////////////////////////////////////

REMOVAL AND REPLACEMENT OF THE LIQUID LINE DRIER

1. Remove four screws and slide the backsplash assembly out from behind the dispensing assembly.
2. Lift the sink assembly to disengage from the left and right sink supports; then, remove the hose clamp and disconnect drain hose.
3. Remove screw and drier brace attaching the drier to the condenser shroud on air-cooled models; and, the chassis base on water-cooled models.
4. Bleed off or blow the refrigerant charge through the Schrader valve.
5. Unsolder refrigerant lines at the inlet and outlet of drier, remove the drier and separate the drier from the drier brace.
2. Install the drier brace on the drier.
3. Solder the drier into the lines, two places.
4. Purge the system.
5. Thoroughly evacuate the system to remove moisture and non-condensables.
6. Charge the system with refrigerant by weight SEE NAMEPLATE for specifications.
7. Leak test the system.
8. Replace and attach the sink assembly and backsplash assembly.

To replace the drier:

1. Remove the factory seals from the replacement drier and install the drier in the refrigerant lines with the arrow positioned in the direction of the refrigerant flow.

//////////////////// CAUTION //////////////////////

If the factory seal is broken on the replacement drier, exposing it to the atmosphere more than a few minutes, the drier will absorb moisture from atmosphere and lose substantial ability for moisture removal.

Be sure the replacement drier is installed with the arrow positioned in the direction of the refrigerant flow.

////////////////////////////////////

REMOVAL AND REPLACEMENT OF THE SAFETY CONTROLS, HIGH PRESSURE, LOW PRESSURE, AND AUGER DELAY

1. Bleed off or blow the refrigerant charge through the Schrader valve.
2. Unsolder the control capillary tube from its corresponding process header.
3. Replace the control and solder the capillary tube to its corresponding process header.
4. Follow the Removal and Replacement Procedure of the liquid line drier.

////////////////////////////////////

Always install a replacement drier, anytime the sealed refrigeration system is opened. Do not replace the drier until all other repair or replacement has been completed.

NOTE

////////////////////////////////////

Thoroughly evacuate the system to remove moisture and non-condensables.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

REMOVAL AND REPLACEMENT OF THE ELBOW AND SWITCH ASSEMBLY

To remove the elbow and switch assembly:

1. Disconnect the electrical supply to the icemaker at the circuit breaker or fuse box.

//////////////////// **WARNING** //////////////////////

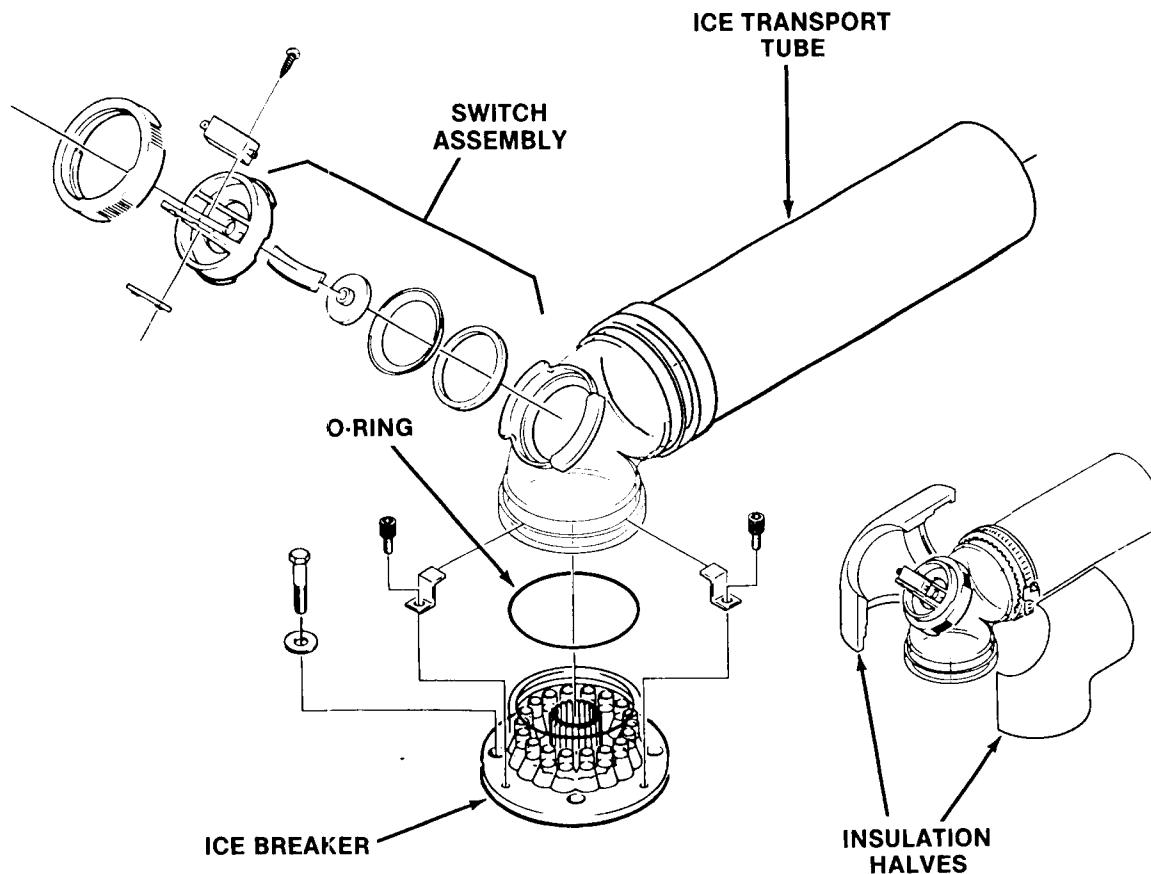
Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

////////////////////

2. Remove screws and remove top panel.
3. Remove insulation halves from the elbow switch assembly.
4. Rotate the retainer ring 90-degrees to unlock the retainer ring and the switch actuator housing from the elbow assembly and separate the parts from the elbow.

5. Remove bolt and washer and remove switch support from the ice breaker.
6. Remove three Allen head screws and spout retaining brackets from the freezer assembly and elbow and switch assembly.
7. Loosen screws inside bin at spout mounting plate, to allow ice transport tube to move up.
8. Lift the elbow assembly UP to clear the top of the freezer assembly.
9. Inspect the rubber diaphragm for cuts, tearing or excessive wear.

To replace the elbow and switch assembly, reverse the removal procedure.



HQD750 REMOVAL AND REPLACEMENT PROCEDURES

////////// WARNING //////////

Be sure the electrical power supply to the icemaker is OFF before proceeding with removal procedures.

//////////

REMOVAL AND REPLACEMENT OF THE GEAR DRIVEMOTOR

To remove the auger drivemotor:

1. Disconnect electrical power leads from the motor.
2. Unscrew four capscrews securing motor to gearcase.
3. Lift off motor winding the gear reducer.
4. Use a pry bar to remove rotor and rotor bearing from the gearcase.
5. Examine grease seal in gearcase. Replace if worn. Add grease to seal and bearing housing before re-assembly.

To replace, reverse the removal procedures.

NOTE

Motors must be exchanged complete. DO NOT mix rotors, housings or windings.

REMOVAL AND REPLACEMENT OF THE GEAR MOTOR ASSEMBLY

To remove the gear motor assembly:

1. Refer to Removal and Replacement of the Elbow & Switch Assembly and perform steps to gain access to the freezer assembly.
2. Thread suitable length bolt, having No. 5/16-18 UNC-2B threads, into thread hold in the top of the auger. Grasp bolt head with hand tool and pull auger out.
3. Unbolt freezer from gear motor assembly, lift up and off gear motor.
4. Remove the drivemotor cover and disconnect the three electrical wire leads.
5. Remove bolts holding gear motor plate to the machine base.
6. Lift the gear motor from the machine base.

To replace the gear motor assembly, reverse the removal procedure.

* Torque bolts to 250-300 inch pounds.

REPAIR OF THE GEAR MOTOR ASSEMBLY

1. Remove (6) cap screws to prepare to open the gearcase.
2. Pry the two cases apart. Inspect the internal parts, look for:
 - Condition and quality of lubricant. (The proper oil level is flush with the top of the output (biggest) gear.)
 - Gear and gear shaft condition
 - Woodruff key between output gear and shaft
 - Grease seals, back to back
 - Vent hole open
 - Thrust bearing intact.

Be sure to count and retain the spacer washers as they come out of the gearbox.

Replace the parts as required, using the part numbers found in the parts list section of this manual. Replace the gears into a CLEAN bottom gearcase, replacing the spacer washers in the same quantity as they were upon disassembly. If no count was kept, refer to the parts illustration.

Output gear, when installed, must be assembled with the flush, machined side DOWN and the protruding bossed center UP.

NOTE: Some bearing grease should be placed in all bearings before assembly to insure proper lubrication upon start-up.

To reassemble:

1. Set top gearcase on gears and spacers and oil. Be sure O-ring is in place.
2. Replace gearcase cover. Drive in alignment pins before tightening cap screws and torque at 250-300 inch pounds.
3. Bench test the gearmotor assembly.

Test for noise, amp draw (must not be in excess of icemaker nameplate for gearmotor) and oil leaks.

Return gearbox to the unit. Be certain all mounting surfaces are clean and reassembly gearbox to chassis and freezer assembly.

If the freezer water seal begins to leak, removal of the auger is required in order to replace the top bearing and water seal. AT THE SAME TIME, it would be recommended to remove the gearmotor assembly, open it up and inspect it.

HQD750 REMOVAL AND REPLACEMENT PROCEDURES

