IBM300/IBM600 CLEAR ICE BLOCK MAKER INSTALLATION, OPERATION, & MAINTENANCE MANUAL

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DISCLAIMER

Ice Max is committed to continuous material and product improvements. This manual is subject to modification without notice without incurring responsibility for previously sold equipment and components.

Thank you for purchasing from Ice Max.

State of California Proposition 65 Warnings

WARNING: This product contains one or more chemicals known to the State of California to cause cancer.

WARNING: This product contains one or more chemicals known to the State of California to cause birth defects or other reproductive harm.

INSPECTION AND UNPACKING:

Ice Max products are individually inspected and carefully packaged to ensure each unit arrives without damage.

- Upon receipt, **immediately inspect** the Block Maker for any evidence of shipping damage **while the delivery truck driver is there**. If the Block Maker is damaged, **document damage on the bill of lading** and give the driver a copy. Notify the delivering carrier immediately and request a damage inspection and claim. Ice Max is not responsible for damage to Block Maker during transit. A Block Maker damaged in transit is the delivering carrier's responsibility.

- Remove plastic stretch wrap and Block Maker corner protectors. The wooden skid is removed by removing the bolts under the skid.

- The Block Maker should be moved in an upright position. If the Block Maker is tilted past 45 degrees, it is recommended that it not be used for a time equal to the time it was tilted. This will allow the compressor lubricant to drain back to normal position.

INSTALLATION:

Install the Block Maker for customer convenience and easy access. The location must provide good ventilation for the refrigeration system. **DO NOT BLOCK AIRFLOW TO THE CONDENSING UNIT.**

- Block Makers should be placed on a flat, level surface allowing any water to drain away from it. The surface should also be strong enough to support the Block Maker when full of water. Be sure to check load capacities of your work area floor. If the Block Maker is not level, the water will freeze uneven in the tank and your water circulation pumps may not operate correctly.

- Adequate space should be allowed around the exterior walls of the Block Maker to allow for evaporation of any condensation that may occur on cabinet exterior.
- Block Makers should be located in a shaded area away from direct sunlight for the most economical operation.
- A minimum 115 Volt, 15 Amp grounded power source should be provided within a range of the power cord. **DO NOT USE EXTENSION CORDS.**

OPERATION:

Electrical:

The electrical power supplied to the Block Maker must be as identified on the serial number data plate located on the rear of the Block Maker. Electrical service connections must be in accordance with the National Electrical Code, state code and any local codes that may apply. All Block Makers are equipped with a power cord and a 3-prong plug. **WARNING: Improper use or removal of the grounding plug can result in a risk of electric shock!**

Be sure to use a grounded electrical receptacle with a fused circuit sized correctly for the electrical load. **Do not use extension cords**. Extension cords may decrease the voltage to the unit and ultimately cause the compressor or other component failure. The Block Maker data plate indicates the recommended maximum over current protective device size.

Note: Some outdoor locations require ground fault interrupt (GFI) outlets. These outlets may trip upon condensing unit start. Refrigeration equipment is exempt in some areas from GFI requirements. Local electric codes should be checked.

Preparing the Ice Block Maker for block production:

Be sure the front block chamber door is securely fastened at both sides with the turn and lock fastener.

Place the 15” x 20” x 40” plastic clear block liner into the 300 pound block ice stainless steel cavity. Use the stainless steel edge clips provided to securely hold the liner in position while filling it with water.

While filling the liner with water, push the liner such that creases are minimized. Fill the chamber to about 11.50” or to the “Do Not Fill Past Here” location shown on the stainless steel sidewalls of the ice block chamber. Also located on the

stainless steel water/ice chamber is a label marked ten inches (10”) to aid in the manual production process.

Position the water circulation pumps, one centered at each end of the water chamber and clips to the edge of the chamber. Turn them on when water is at the correct level. They must be on while the refrigeration system is on so that clear ice is formed. Not circulating the water during production will not produce a clear block of ice.

Start Up:
Plug Block Maker power cord into lower receptacle of a 15 amp grounded electrical outlet. The condensing unit will start immediately. The condensing unit will continue to run until the switch is manually turned off after the 300 pound ice block, 10” thick ice is complete or unless there is a low pressure failure and the low pressure control turns the compressor off.

Check thickness of block every 6 hours or whatever works for you depending on other production conditions. DO NOT allow water circulation pumps to freeze into the block.

Temperature Control:
The Clear Ice Block Maker will run continuously for between 36 and 48 hours to create the clear block of ice depending also on the ambient conditions. A low pressure control is installed to protect the compressor.

Safety and Harvesting 300 Pound Ice Block:

<u>All safety precautions should be used</u> during the harvest of the 300 pound clear block of ice.

After it has been determined that the correct thickness has been achieved, turn the water circulation pumps off and the refrigeration system off. The on/off switches are located on the right hand lower refrigeration hood. Unplug the system from power supply.

Open the top and front door of the ice block chamber. As the sides of the chamber warm from ambient, the block will move easier from the chamber.

Securely position the block cart at the front of the Ice Max Block Maker after the front door is folded down. Remove the front ice block chamber door with the

twist and turn locks. Depending on the cart used, be sure it is securely in position and does not move as the 300 pound block is moved on to the cart.

MAINTENANCE:

Refrigeration: WARNING – disconnect electrical power before cleaning. Clean refrigeration cover grill openings, condenser fins, and condenser fan blades at least two (2) times per year, more often if needed. A dirty condenser will cause the Ice Block Maker to become less efficient, and may lead to compressor failure.

- Clean condenser coil fins with a fine bristle brush or vacuum
- Routinely check wiring harness for loose connections or broken insulation

Defrosting: Frost cannot be avoided. It develops from moist air in the Ice Block Maker while the doors are open and when filling with water. Some frost will form on the outside of the water chamber that secures the clear plastic bag.

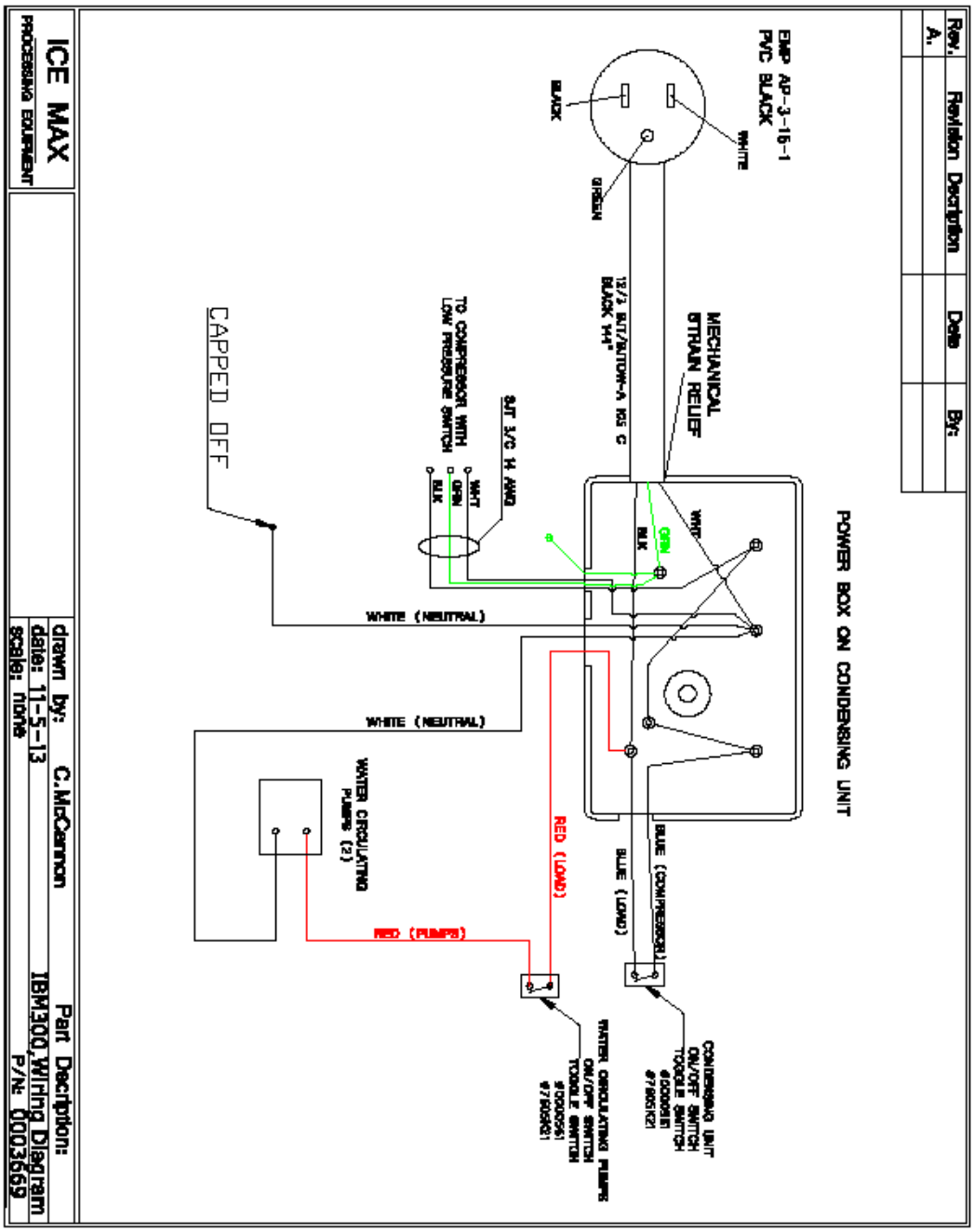
- Excess frost or water on the interior of the Ice Block Maker should be removed or drained after each harvest cycle. Do not allow water to stand in or around the Ice Block Maker.

Cold Floor (CF): The Cold Floor uses the Ice Block Maker interior floor surface as the refrigeration evaporator. Frost accumulation will occur on surfaces inside the Ice Block Maker. The Ice Block Maker can be defrosted by conventional methods using a wooden paddle or plastic scraper. Care must be exercised to prevent damaging refrigeration piping in the floor and control parts. **Do not** use a sharp instrument to "chop" the frost from the interior surface as you may do irreparable damage. After a the Ice Block Harvest leave the front door open to allow any excess water to drain.

Doors: Gaskets should be checked for tears or any other problems that would cause loss of seal. Replace torn/worn gaskets to maintain correct temperature and refrigeration efficiency.

Hinges exposed to harsh environmental conditions may require a lubricant for ease of operation. Spray light penetrating oil on the piano type hinge to extend the hinge life.

Finish: Schedule periodic cleaning of Ice Block maker interior and exterior. The cabinet can be cleaned with a mild detergent and water. **DO NOT USE** detergents, abrasive cleaners, or solvents that will likely leave objectionable odors that may be absorbed by the ice. Do not use wax or polish on the interior for the same reason. Wash exterior surfaces with a mild soap and warm water applied with a soft sponge or cloth. Wax exterior to maintain appearance and to protect the finish.


Rev.
A.
Revision Description
Date
By:
EMP AP-3-15-1
PVC BLACK
BLACK
WHITE
GREEN
12/2 BUT/BUTONY-A 105 C
BLACK YH1"
MECHANICAL
STRAIN RELIEF
POWER BOX ON CONDENSING UNIT
TO COMPRESSOR WITH
LOW PRESSURE SWITCH
BLK
GRN
WHT
8JT 3/C H AWG
CAPPED OFF
WHITE (NEUTRAL)
WHITE (NEUTRAL)
WATER CIRCULATING
PUMPS (2)
RED (PUMPS)
RED (LOAD)
BLUE (LOAD)
BLUE (COMPRESSOR)
CONDENSING UNIT
ON/OFF SWITCH
TOGGLE SWITCH
#1000951
#7905K21
WATER CIRCULATING PUMPS
ON/OFF SWITCH
TOGGLE SWITCH
#1000951
#7905K21
ICE MAX
PROCESSING EQUIPMENT
drawn by: C.McCannon
date: 11-5-13
scale: none
Part Description:
IBM300 Wiring Diagram
P/N: 0003669

COLD FLOOR ICE BLOCK CHAMBER TROUBLE SHOOTING GUIDE

If refrigerant valves must be opened, a qualified technician should be notified to perform the work.

Problem	Possible Cause	Solution
Ice block is not forming	Power condensing unit switch is in OFF position.	Turn switch to ON position
	Condenser coil is dirty	Clean condenser.
	Incorrect refrigerant charge	Check sight glass when used for bubbles indicating wrong charge. Add refrigerant. Locate refrigerant leak.
	Condenser fan motor and compressor are not running	Check power supply. Check if compressor is hot, this may indicate that condenser fan motor has failed causing thermal overload on compressor to trip.
	Condenser fan motor is not operating	Check electrical power to motor.
	Compressor is not operating	Check electrical power, relay, overload protector, start capacitor and compressor motor.

REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE

Problem	Possible Cause	Solution
Compressor will not start (no hum)	Be sure power is being supplied to the merchandiser	Check power cord Check plug in Check breaker switch
	Overload protector stuck in open position	Replace overload protector
	Wiring improper or loose	Check actual wiring against diagram
Compressor will not start (hums, but trips on overload protector)	Improperly wired	Check actual wiring against diagram
	Low voltage to unit	Check power supply. Contact Power Company
	Starting capacitor defective	Replace start capacitor
	Relay failing to close	Determine reason and correct or replace
Compressor will not start (hums, but trips on overload protector)	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor
Compressor starts, but does not switch off of start winding	Improperly wired	Check wiring against diagram
	Low voltage to unit	Determine reason and correct
	Relay failing to open	Determine reason and correct or replace
	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor

REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued

Problem	Possible Cause	Solution
Compressor starts and runs, but short cycles on overload protector	Low line voltage to unit	Check power supply Contact Electric Company
	Overload protector defective	Replace overload protector
	Starting capacitor defective	Replace start capacitor
	Excessive discharge pressure	Check ventilation, restrictions in cooling medium, restrictions in refrigeration system
	Compressor too hot - return gas hot	Check refrigerant charge (fix leak) add refrigerant if necessary
	Compressor motor has a winding shorted	Replace compressor
Compressor runs a long time or continuous	Dirty condenser	Clean condenser
	Refrigerated space has excessive load.	Reduce load. Check for open door or bad door gasket.
	Evaporator coil iced	Defrost
	Thermostat contacts stuck in closed position	Replace thermostat
	Shortage of refrigerant	Fix leak, add charge
Start Capacitor open	Relay contacts not closing	Replace relay
	Prolonged operation on start cycle due to low line voltage	Determine reason and correct
	Prolonged operation on start cycle due to improper relay	Replace relay

REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued

Problem	Possible Cause	Solution
Excessive Short Cycling	Compressor Starts and Runs for short cycle	Check overload
Relay defective or burned out	Line voltage too high or too low	Determine reason and correct
	Excessive short cycling	Determine reason and correct (see Compressor starts and runs but short Short cycles)
	Relay being influenced by loose vibrating mounting	Remount relay rigidly
Warm refrigerated storage space	Compressor not running	Check power supply
Suction line frosted	Overcharge of refrigerant	Correct charge
Liquid line frosted	Restriction in drier	Replace drier
Condensing unit noisy	Loose parts or mountings	Find and tighten
	Tubing rattle	Apply sponge rubber between parts (Armaflex)
	Bent fan blade causing vibrations	Replace blade
	Fan motor bearings worn	Replace motor

ICE MAX POLICY STATEMENT

Warranty
Seller warrants the goods sold to be free from defects in materials and workmanship, under normal conditions and use for the following period of time:

> **Compressor** – five (5) years from the original date of shipment
> **Ice Block Maker Parts** – one (1) year from the original date of shipment
> **Labor** – 60 days (Purchaser's authorized service technician must contact factory for approval).

This warranty applies to goods installed in the continental United States, Canada and the Caribbean Islands only. Seller's sole obligation under this warranty shall be limited to repair or replacement of any part or parts of said goods, F.O.B. Seller's factory which proves defective within the applicable warranty period. Seller reserves the right to inspect allegedly defective goods and to require the return, at the Buyer's expense, of goods for the purposes of inspection. This warranty shall not apply to any good, or any part thereof, which has been subject to any accidents or negligence or abuse of misuse, alteration or detrimentally affected its physical condition, use or operation qualities.

Parts Orders
Please order parts by Ice Max part number as listed in the replacement parts catalog. Always have available the model and serial number of the cabinet, and in some cases the manufacturers name and model number of the part. In case of warranty replacement this information is required. Parts will not be issued as warranty or warranty authorized without this information.

Method of Shipment
Every shipment is carefully packed for domestic shipment and labeled to prevent damage or loss in transit. Specify where shipment should be sent, freight, express, parcel post, airfreight or united parcel. If no preference is given, or in case of freight shipment, the routing is not furnished, shipment will be made according to our discretion without liability of any kind on our part for each selection. We welcome your suggestions on preferred carriers for better service.

Common carrier shipments are forwarded freight collect. Under pre-approved circumstances, where transportation charges are prepaid, they will be added to the invoice. Please note that prepaid freight charges are subject to sales tax if a signed sales tax exemption certificate is not on file with Ice Max. All UPS shipments will be prepaid and added to the invoice.

Ship Dates
Promise of delivery represents only our best estimate of the time required completing the work and shipping the product from our plant. Orders are accepted with the understanding that shipping dates are approximate and subject to change because of factory conditions, fires, supplier delays, material shortages, civil or military authority, mandatory priority and/or other causes beyond our knowledge or control.

Return of Merchandise
No returned merchandise will be accepted without prior authorization from Ice Max. When orders have been correctly filled, and merchandise is returned, a 10% handling charge plus reconditioning charges, if any, will be applied. No return shipment will be accepted unless authorized in advance and the freight is prepaid. During the warranty period, in order to obtain proper credit from our vendors, all defective parts must be returned within 45 days, freight prepaid to our factory for repair, replacement or credit.

Pricing
All prices listed are F.O.B. Lithia Springs, Georgia, and are subject to change without notice.

Ordering addresses, telephone numbers and websites

Sales Email – sales@polartemp.com
Corporate Sales – 1-877-984-5945
Ice Max Factory Office – 770-819-1100
Ice Max Website – www.ice-max.com
Corporate Website – www.secooler.com

FACTORY SALES LOCATIONS

Alcoa, TN 37701
1-877-984-5945

Center, TX
1-866-598-4206

Charlotte, NC
1-866-827-3232

Shafter, CA
1-866-746-0437

Buford, GA
1-800-554-4852

Colorado Springs, CO
1-877-376-0367