Manitowoc

RF/RFS & RN/RNS Models
Flake & Nugget Ice Machine

Technician's Handbook





Part Number 000007661 Rev02 02/20

Manitowoc

Safety Notices

As you work on Welbilt equipment, be sure to pay close attention to the safety notices in this handbook. Disregarding the notices may lead to serious injury and/or damage to the equipment.

Throughout this handbook, you will see the following types of safety notices:

⚠ Warning

Text in a Warning box alerts you to a potential personal injury situation. Be sure to read the Warning statement before proceeding, and work carefully.

⚠ Caution

Text in a Caution box alerts you to a situation in which you could damage the equipment. Be sure to read the Caution statement before proceeding, and work carefully.

Procedural Notices

As you work on Welbilt equipment, be sure to read the procedural notices in this handbook. These notices supply helpful information which may assist you as you work.

Throughout this handbook, you will see the following types of procedural notices:

Important

Text in an Important box provides you with information that may help you perform a procedure more efficiently. Disregarding this information will not cause damage or injury, but it may slow you down as you work.

NOTE: Text set off as a Note provides you with simple, but useful, extra information about the procedure you are performing.

Read These Before Proceeding:

⚠ Caution

Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your Manitowoc equipment. If you encounter problems not covered by this manual, do not proceed, contact Welbilt. We will be happy to provide assistance.

⚠ Caution

Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website www.welbilt.com for manual updates, translations, or contact information for service agents in your area.

Important

Routine adjustments and maintenance procedures outlined in this handbook are not covered by the warranty.

⚠ Warning

Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

⚠ Warning

Do not use electrical appliances or accessories other than those supplied by Welbilt for your ice machine model.

⚠ Warning

Two or more people or a lifting device are required to lift this appliance.

⚠ Warning

This equipment contains high voltage electricity and refrigerant charge. Installation and repairs are to be performed by properly trained technicians aware of the dangers of dealing with high voltage electricity and refrigerant under pressure. The technician must also be certified in proper refrigerant handling and servicing procedures. All lockout and tag out procedures must be followed when working on this equipment.

⚠ Warning

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

⚠Warning

Do not operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

⚠Warning

All covers and access panels must be in place and properly secured, before operating this equipment.

⚠Warning

Do not obstruct machine vents or openings.

⚠Warning

Do not store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

⚠Warning

Do not clean with water jet.

⚠Warning

It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.

⚠Warning

Two or more people are required to move this equipment to prevent tipping.

⚠Warning

When using electric appliances, basic precautions must always be followed, including the following:

a. Read all the instructions before using the appliance.

b. To reduce the risk of injury, close supervision is necessary when an appliance is used near children.

c. Do not contact moving parts.

d. Only use attachments recommended or sold by the manufacturer.

e. Do not use outdoors.

f. For a cord-connected appliance, the following must be included:

- Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- Unplug from outlet when not in use and before servicing or cleaning.
- Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner. Contact the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.

g. Follow applicable lock out tag out procedures before working on equipment.

h. Connect to a properly grounded outlet only.

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

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Model Numbers

SELF CONTAINED

AIR & WATER-COOLED MODELS

Flake Models			
Self Storage Air-Cooled	**Self Storage Water-Cooled**	**Modular Air-Cooled**	**Modular Water-Cooled**
RF0244A	–	–	–
RF0266A	–	–	–
RF0385A	–	–	–
RF0388A	–	–	–
RF0399A	–	–	–
–	–	RF0300A	–
–	–	RFS0300A	–
RF0644A	–	–	–
–	–	RF0650A	RF0650W
–	–	RFS0650A	RFS0650W
–	–	RF1200A	RF1200W
–	–	RFS1200A	RFS1200W
–	–	RF2300A	RF2300W

NUGGET MODELS

Self Storage Air-Cooled	Self Storage Water-Cooled	Modular Air-Cooled	Modular Water-Cooled
RNS0244A	–	–	–
--	–	RNS0308A	–
RNS0385A	–	–	–
RN0408A	–	–	–
–	–	RNS1008A	–
–	–	RN1008A	RN1009W
–	–	RN1408A	RN1409W

QUIETQUBE MODELS WITH REMOTE CONDENSING UNITS

Flake Models	
QuietQube Head	**RCU Remote Condensing Unit**
RF1278C	RCU1075
RFS1278C	RCU1075
RF2378C	RCU2375
RFS2378C	RCU2375
Nugget Models	
QuietQube Head	**RCU Remote Condensing Unit**
RN1078C	RCU1075
RN1278C	RCU1275

RACK UNITS

Flake Models	
Head Section	**Rack Remote Condensing Unit**
RF1279R	Supplied by Others
RFS1279R	Supplied by Others
RF2379R	Supplied by Others
RFS2379R	Supplied by Others

NOTE: Rack units share a common refrigeration circuit with other equipment, such as display cases and glass door freezer displays. Rack units have been modified to function with rack systems and will not function correctly with RCU condensing units.

Model/Serial Number

These numbers are required when requesting information from your local Manitowoc Distributor, or Manitowoc Ice. The model and serial number are listed on the MODEL/SERIAL NUMBER DECAL affixed to the ice machine.

Manitowoc Cleaner and Sanitizer

Manitowoc Ice Machine Cleaner and Sanitizer are available in 16 oz. (473 ml) bottles. These are the only cleaner and sanitizer approved for use with Manitowoc products.

Cleaner Part Number		Sanitizer Part Number	
16 oz.	000000084	16 oz.	9405653
1 gal	N/A	1 gal.	9405813

Ice Machine Warranty Information

Warranty information for all ice machine models is available on our website at www.manitowocice.com.

Ice Machine Heat of Rejection

Series Ice Machine	Heat of Rejection	
	Air Conditioning*	Peak
RF Flake Models		
RF0244A	2400	5000
RF0266A	2400	5000
RF0300A	2400	2400
RF0385A	3500	5200
RF0388A	3500	5200
RF0399A	3500	5200
RF0644A	7700	10250
RF0650A	5200	7700
RF0650W	5200	7700
RF1200A	7500	14000
RF1200W	7500	14000
RF1200C	7500	1400
RF2300A	15700	29500
RF2300W	15700	29500
RF2300C	15700	29500
RFS Flake Models		
RFS0300A	2400	5000
RFS0650A	5200	7700
RFS0650W	5200	7700
RFS1200A	7500	14000
RFS1200W	7500	14000
RFS1200C	7500	14000
RFS2300C	15700	19500

Ice Machine Heat of Rejection		
Series Ice Machine	**Heat of Rejection**	
	Air Conditioning*	**Peak**
RN Nugget Models		
RN0408A	3800	5400
RN1008A	11300	12800
RN1009W	11300	12800
RN1078C	11300	12800
RN1278C	7500	14000
RN1408A	**16000**	16400
RN1409W	16000	16400
RNS Nugget Models		
RNS0244A	2400	5000
RNS0308A	3075	4100
RNS0385	3500	4600
RNS0608A	5200	7700
RNS0609W	5200	7700
RNS1008A	7500	10900
RNS1009W	7500	10900
RNS1078C	7500	14000

*BTU/Hour

NOTE: Because the heat of rejection varies during the ice making cycle, the figure shown is an average.

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Installation

Installation Requirements

The location selected for the ice machine must meet the following criteria. If any of these criteria are not met, select another location.

- Air temperature:
- RF or RFS Flake Models - Minimum 50°F (10°C), Maximum 110°F (43°C)
- RN Nugget Models - Minimum 50°F (10°C), Maximum 100°F (38°C)
- RNS Nugget Models - Minimum 45°F (7°C), Maximum 110°F (43°C)
- The location must be free of airborne and other contaminants.
- The location must not be near heat-generating equipment or in direct sunlight.
- The location must be capable of supporting the weight of the ice machine and a full bin of ice.
- The location must allow enough clearance for water, drain and electrical connections in the rear of the ice machine.
- The location must not obstruct airflow through or around the ice machine.
- The ice machine and bin must be level.
- Routine adjustments and maintenance procedures outlined in this manual are not covered by the warranty.

Potable Water Requirements

- Plumbing must conform to local codes.
- Water temperature: Minimum 40°F (4°C), Maximum 90°F (32°C).
- Do not connect the ice machine to a hot water supply. Be sure all hot water restrictors installed for other equipment are working. (Check valves on sink faucets, dishwashers, etc.)
- If water pressure exceeds maximum pressure (70 psig [483 kPa] RN1000; 80 psig [552 kPa] for all other models) obtain a water pressure regulator from your Manitowoc distributor.
- A water shut-off valve is required to clean the ice machine.
- A union for both the ice making and condenser water lines is required.
- Water inlet lines require insulation to prevent condensation.
- RF/RFS/RFN Models: A back flow preventer is required on water inlet lines.

Drain Connections

- Drain lines must have a 1.5 inch drop per 5 feet of run (2.5 cm per meter), and must not create traps.
- The floor drain must be large enough to accommodate drainage from all drains.
- Bin drain termination must have an air gap.
- Separate insulated bin and water-cooled condenser drain lines are required.
- The bin and ice machine drains require a vent.

Ice Machine Clearance Requirements

Head Sections	Self-Contained Air-Cooled	Self-Contained Water-Cooled*	QuietQube Air-Cooled
Back	5″ (12.7 cm)	5″ (12.7 cm)	5″ (12.7 cm)
Sides/Top	8″ (20.3 cm)	8″ (20.3 cm)	8″ (20.3 cm)

RCU Units	Remote Condensing Unit*
Front/Back	24″ (61.0 cm)
Sides/Top	6″ (15.2 cm)*

NOTE: Allowance must be made for removal when the ice machine is built-in. Monthly removal of the top panel is required for cleaning and sanitizing.

Cooling Tower Applications

A water cooling tower installation does not require modification of the ice machine. The water regulator valve for the condenser continues to control the refrigeration discharge pressure.

It is necessary to know the amount of heat rejection, and pressure drop through the condenser and water valves (inlet and outlet) when using a cooling tower on an ice machine.

- Water entering the condenser must not be lower than 37°F (3°C) or exceed 90°F (32°C).
- Water flow through the condenser must not exceed 5 gal. (19 L) per minute.
- Allow for a pressure drop of 7 psi (48 kPa) between the condenser water inlet and the outlet of the ice machine.
- Water exiting the condenser must not exceed 110°F (43°C).

Electrical Service

⚠Warning

All wiring must conform to local, state and national codes.

VOLTAGE

The maximum allowable voltage variation is ± 10% of the rated voltage on the ice machine model/serial number plate at compressor start-up.

FUSE/CIRCUIT BREAKER

A separate fuse/circuit breaker must be provided for each ice machine. Circuit breakers must be H.A.C.R. rated (does not apply in Canada).

⚠Warning

The ice machine must be grounded in accordance with national and local electrical codes.

GROUND FAULT INTERRUPTER CIRCUIT (GFIC)

A GFCI/GFI circuit protection is not recommended with our equipment. If a GFCI/GFI is required by code a GFCI/GFI breaker rather than outlet must be used to avoid intermittent nuisance trips.

MAXIMUM BREAKER/MINIMUM CIRCUIT AMPERAGE CHART

Model	Minimum Circuit Ampacity	Maximum Fuse Size
RNS1008A-261	14.2	20
RNS1009W-261	13.7	20
RNS1008AZ-251	11.7	15
RNS1009WZ-251	11.2	15
RNS0608A-261	8.7	15
RNS0608A-161	16.3	25
RNS0609W-261	8.2	15
RNS0609W-161	15.4	25
RNS0608AZ-251	7.7	15
RNS0609WZ-251	7.1	15
RNS1078C-261	1.4	15
RNS1078C-161	2.9	15
Due to continuous improvements, this information is for reference only. Please refer to the ice machine serial number tag to verify electrical data. Serial tag information overrides information listed on this page		

Cleaning and Sanitizing

Maintenance procedures covered in this manual are not covered by the warranty.

⚠ Caution

Use only Manitowoc approved Ice Machine Cleaner (part number 000000084) and Sanitizer (part number 9405653). Do not mix Cleaner and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling. Read and understand all labels printed on bottles before use.

⚠ Warning

Wear rubber gloves and safety goggles (and/or face shield) when handling ice machine Cleaner or Sanitizer.

EXTERIOR CLEANING

Remove dust and dirt off exterior surfaces with mild household dish-washing detergent and warm water. Wipe dry with a clean, soft cloth.

RF/RFS/RNS MODELS CLEANING/SANITIZING PROCEDURES

Cleaning/Sanitizing Procedure

This procedure must be performed once every month.

- All ice must be removed from the bin
- The ice machine and bin must be disassembled cleaned and sanitized
- The ice machine produces ice with the cleaner and sanitizer solutions
- All ice produced during the cleaning and sanitizing procedure must be discarded

Procedure to Clean/Sanitize

Use Ice Machine Cleaner part number 000000084.

Use Ice Machine Sanitizer part number 9405653.

Step 1 Remove front and top covers and set the toggle switch to the OFF position.

Step 2 Remove all ice from the bin.

Step 3 Turn off the ice making water supply and drain water from evaporator and reservoir.

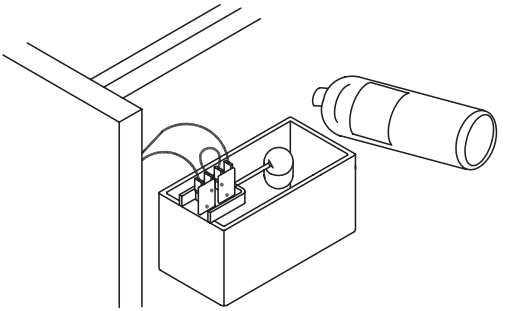
Step 4 Remove the top cover from water reservoir.

Step 5 Follow the chart and premix cleaner and water.

Amount of Water	Amount of Cleaner Part Number 000000084
1 gallon (4 Liters)	3 ounces (90 ml)

Step 6 Fill the evaporator and reservoir with cleaning solution.

Prop Float Up to Prevent Low Water Level Shutdown



Step 7 Move the toggle switch to the ON position. The ice machine will make ice with the cleaning solution and deposit the ice in the bin. Add the remaining cleaner/water solution as the water level in the reservoir drops.

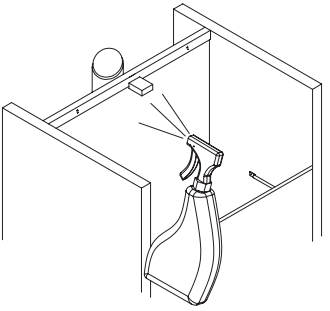
NOTE: Do not allow the cleaner/water level to drop below the minimum water level. The ice machine will discontinue the cleaning cycle if the water float switch opens.

Step 8 After all of the cleaner/water solution has been added turn on the ice making water supply. Continue the freeze cycle for 10 minutes to remove the cleaning solution from the water circuit.

Step 9 Place the toggle switch in the OFF position.

Step 10 Refer to disassembly for cleaning/sanitizing and remove parts for hand cleaning/sanitizing.

- Hand clean all parts
- Rinse all parts with clear potable water
- Sanitize all parts - do not rinse after sanitizing
- Spray all interior bin surfaces with sanitizer (do not rinse sanitized areas).
- Spray evaporator discharge spout



Step 11 Reassemble ice machine.

Step 12 Turn off the ice making water supply.

Step 13 Refer to chart and premix water and sanitizer.

Amount of Water	Amount of Sanitizer
1 Gallons (4 L) Water	1/2 ounce (15 ml)

Step 14 Fill the evaporator and reservoir with sanitizer/water solution.

Step 15 Move the toggle switch to the ON position. The ice machine will make ice with the sanitizer/water solution and deposit the ice in the bin. Add the remaining sanitizer/water solution when the water level in the reservoir drops.

NOTE: Do not allow the sanitizer/water level to drop below the minimum water level. The ice machine will discontinue the cleaning cycle if the water float switch opens.

Step 16 After all of the sanitizer/water solution has been added to the reservoir, turn on the ice making water supply.

Step 17 Continue the freeze cycle for 30 minutes and then discard all ice produced.

Heavily Scaled Cleaning Procedure

Perform this procedure if you have some or all of these symptoms.

- Excessive grinding, popping or squealing noises from the evaporator
- Grinding noise from gearbox
- Ice machine trips speed sensor

NOTE: A Cleaning/Sanitizing Procedure must be performed after this procedure.

Procedure to Clean Heavily Scaled Flake Ice Machines

Step 1 Remove front and top covers and set the toggle switch to the OFF position.

Step 2 Remove all ice from the bin.

Step 3 Turn off the ice making water supply.

Step 4 Remove the top cover from water reservoir.

Step 5 Refer to chart and premix cleaner with lukewarm water in a non-metallic container.

Model	Water Reservoir Capacity	Mix Cleaner and Water Use Ice machine nickel safe cleaner, part number 000000084 only	
		Cleaner	Water
RF0244 RNS0244 RF0266 RNS0308 RF0385 RNS0385 RF0388 RF0399 RF0644	14 oz (400 ml)	9 oz (266 ml)	5 oz (148 ml)
RF0300 RFS0300 RNS0308 RF0650 RFS0650	17 oz (500 ml)	11 oz (325 ml)	6 oz (177 ml)
RF1200 RFS1200	34 oz (1 L)	23 oz (680 ml)	11 oz (325 ml)
RF2300 RFS2300	68 oz (2 L)	46 oz (1.3 L)	22 oz (650 ml)

Step 6 Remove all water from the evaporator and water reservoir. Add the entire cleaner/water solution and re-install the reservoir cover.

Leave the cleaner/water solution in the evaporator for a minimum of 4 hours.

Step 7 Remove all cleaner/water from the evaporator and water reservoir.

Step 8 Follow the standard cleaning and sanitizing procedures.

PARTS REMOVAL FOR CLEANING/SANITIZING

⚠Warning

Disconnect electric power to the ice machine at the electric switch box and wear rubber gloves and safety goggles (or face shield) while handling cleaner or sanitizer.

NOTE: Do not mix Cleaner and Sanitizer solutions together. It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling.

1. Turn off the water supply to the ice machine at the water service valve.
2. Remove the components listed on the following pages for cleaning and sanitizing.
3. Soak the removed part(s) in a properly mixed solution of cleaner and water.

Solution Type	Water	Mixed With
Cleaner	1 gal. (4 L)	16 oz (500 ml) cleaner Part Number 000000084

4. Use a soft-bristle brush or sponge (NOT a wire brush) to carefully clean the parts.
5. Use the solution and a brush or sponge to clean all disassembled components and the inside of the bin.
6. Rinse all cleaned parts with clear water.
7. Mix a solution of sanitizer and water.

Solution Type	Water	Mixed With
Sanitizer	3 gal. (11 L)	2 oz (60 ml) sanitizer Part Number 94-0565-3

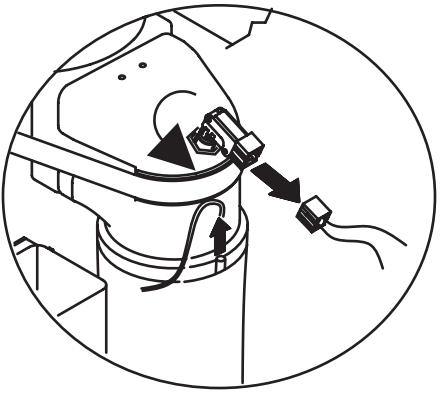
8. Soak the parts in the sanitizer/water solution for 10 minutes. Use the sanitizer/water solution and a sponge to sanitize all removed components and the inside of the bin. Do not rinse the sanitized parts.
9. Continue with step 11 of the cleaning/sanitizing procedure.

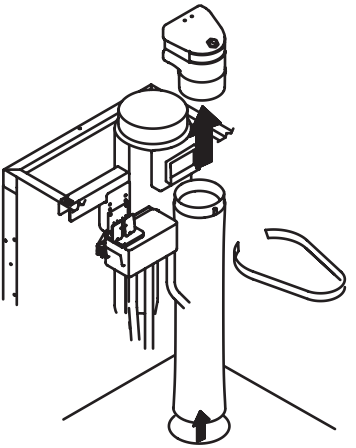
ICE CHUTE REMOVAL - RFS & RNS MODELS

RFS0300/RNS0308/RFS1200/RFS2300

NOTE: A limited number of RF models have this type of ice chute also.

1. Place the toggle switch in the OFF position, turn off the water supply and disconnect electrical power to the ice machine.
2. Disconnect water supply.
3. Remove water reservoir cover.
4. Remove microswitch and bin thermostat from the ice chute.
5. Remove retainer, ice chute elbow and ice chute.



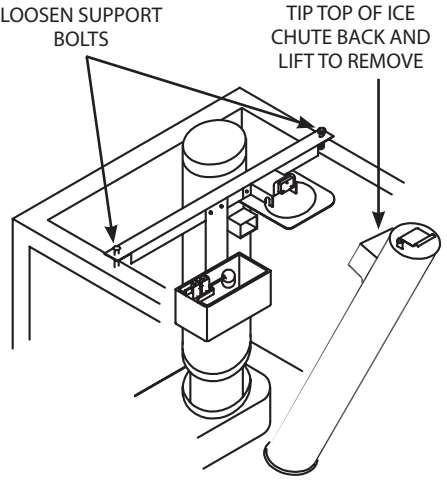


ICE CHUTE REMOVAL - RF MODELS

RF0300/RF0650/RF1200/RF2300

NOTE: A limited number of these models have the ice chute listed on the previous page.

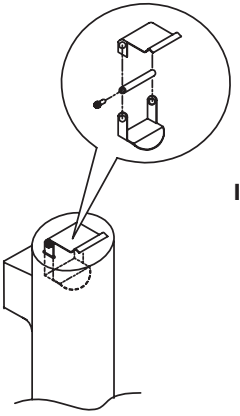
1. Place the toggle switch in the OFF position, turn off the water supply and disconnect electrical power to the ice machine.
2. Disconnect water supply.
3. Remove water reservoir cover.
4. Remove bin thermostat from ice chute.
5. Loosen bolts holding cross member.
6. Lift cross member and remove ice chute.



ICE CHUTE SWITCH ACTUATOR REMOVAL

RFS0300/RF0650/RF1200/RFS1200/RF2300/RFS2300

1. Pull to remove nylon end cap.
2. Slide pin to remove.
3. Remove both sections of the pressure switch bracket.



INCORRECT REASSEMBLY CAN RESULT IN AN ICE MACHINE THAT WILL NOT RUN

CLEANING SANITIZING PROCEDURE RN0400

Use Ice Machine Cleaner part number 000000084.

Use Ice Machine Sanitizer part number 94-0565-3.

Step 1 Disconnect power, remove front, top and right panels and set the compressor rocker switch to the OFF position.

Step 2 Remove all ice from the bin/dispenser.

Step 3 Turn off the ice making water supply.

Step 4 Drain water from evaporator and reservoir through the evaporator/reservoir drain line and reinsert hose into hose clip.

Step 5 Follow the chart and premix cleaner and water.

Amount of Luke Warm Water	Amount of Cleaner Part Number 000000084
1 gallon (4 Liters)	4 ounces (120 ml)

Step 6 Remove top cover from the water reservoir and fill the evaporator and reservoir with cleaning solution. Remainder of solution will be used for hand cleaning.

Step 7 Verify the compressor rocker switch is in the

OFF position, then reconnect power and run the gear motor for 15 minutes. Perform the following procedures during the 15 minute period:

- Remove ice compression nozzle from evaporator and soak in cleaning solution.
- Descale drain pan by gently flexing, then remove any scale residue.
- Inspect water feed and drain lines and clean as needed.
- Connect ice transport tube direct to evaporator and secure with hose clamp.

Step 8 Disconnect power, then drain the water from the evaporator and reservoir through the evaporator/ reservoir drain line - Using a pitcher, fill and drain the evaporator/reservoir 4 times and reinsert the hose into the hose clip.

Step 9 Refer to chart and premix water and sanitizer.

Amount of Luke Warm Water	Amount of Sanitizer
1 Gallon (4 L) Water	1/2 ounce (15 ml)

Step 10 Fill reservoir and evaporator with sanitizer/ water solution.

Step 11 Step 11 Verify the compressor rocker switch is in the OFF position, then reconnect power and run the gearmotor for 10 minutes.

- During the 10 minute period rinse cleaner from compression nozzle with potable water and then soak in sanitizer/water solution.

Step 12 Move the compressor rocker switch to the ON position. The ice machine will make ice with the sanitizer/ water solution and deposit the ice in the bin/ dispenser. Make ice for 5 minutes - add sanitizer/water solution as the water level in the reservoir drops.

NOTE: Do not allow the sanitizer/water level to drop below the sensing probes. The ice machine will start a 20 minute delay period if the sensing probes lose contact with the water for more than 10 seconds.

Step 13 Move the compressor rocker switch to the OFF position and disconnect power.

Step 14 Drain the evaporator/reservoir and reinsert the drain hose into the hose clip.

Step 15 Reinstall the ice compression nozzle and reservoir cover. Verify the ice tube is in place and does not contact the condenser fan blade.

Step 16 Turn on the ice making water supply, reconnect power and move the compressor rocker switch to ON.

Step 17 Allow the ice machine to run for 10 minutes, then place the compressor rocker switch in the OFF position, disconnect power and discard all ice produced.

⚠Warning

To prevent injury disconnect main supply power to the dispenser (when used) before cleaning or sanitizing.

Step 18 Clean and sanitize the bin/dispenser:

- Disconnect power to the dispenser to prevent injury.
- Use the cleaner and sanitizer ratios from the charts on Page 21.
- Heavy accumulations of scale may require removal of components for cleaning and sanitizing.
- Rinse parts with clear water after cleaning - do not rinse parts after sanitizing.
- Spray all interior bin/dispenser surfaces with sanitizer (do not rinse sanitized areas).

Step 19 Place the compressor rocker switch in the ON position, reinstall all removed panels and restore power to the ice machine and dispenser.

CLEANING THE AIR FILTER AND CONDENSER

⚠Warning

Disconnect electric power to the ice machine at the electric service switch before cleaning the condenser. The condenser fins are sharp. Use care when cleaning them.

Air-Cooled Condenser

Clean the condenser at least every six months. Follow the steps below.

1. Some models have a washable filter. Clean the filter with a mild soap and water solution.
2. Shine a flashlight through the condenser to check for dirt between the fins. Blow compressed air through the condenser fins from the inside or use a commercial condenser coil cleaner. Follow the directions and cautions supplied with the cleaner.
3. Straighten any bent condenser fins with a fin comb.
4. Carefully wipe off the fan blades and motor with a soft cloth. Do not bend the fan blades. If the fan blades are excessively dirty, wash with warm, soapy water and rinse thoroughly.

⚠Warning

If you are cleaning the condenser fan blades with water, cover the fan motor to prevent water damage.

Removal from Service/Winterization

⚠ Caution

If water is allowed to remain in the ice machine in freezing temperatures, severe damage to some components could result. Damage of this nature is not covered by the warranty.

Follow the procedure below.

1. Disconnect the electric power at the circuit breaker or the electric service switch.
2. Turn off the water supply.
3. Disconnect and drain the incoming ice-making water line at the rear of the ice machine.
4. Disconnect drain tubing and drain water into container and discard.
5. Make sure water is not trapped in any of the water or drain lines.
6. Water cooled - Use compressed air to remove all water from the condenser.

Ice Making Sequence of Operation

NOTE: Flake ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

RF0244/RNS0244/RF0266/RF0385/RFS0385/ RNS0385/RF0388/RF0399

Self-Contained Air-Cooled

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Low Evaporator Temperature Thermostat

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor and refrigeration system. The float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine will restart when ice no longer contacts the bin thermostat.

RF0300

Self-Contained Air-Cooled

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

D. Low Evaporator Temperature Thermostat

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

RFS0300/RNS0308

Self-Contained Air-Cooled

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

D. High Pressure Cut-out Switch

E. Low Pressure Cut-Out Switch

Placing the toggle switch in the ON position starts the gear motor and a compressor time delay[1]. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

[1] 10 minute delay for models manufactured before 12/18 and an 8 minute delay on models manufactured after 11/18.

RF0644/RF0650/RF1200/RFS1200/RF2300/RFS2300

Self-Contained Air-Cooled

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies correct rotation the time delay ends[1] and the compressor starts. The ice machine will continue to make ice until ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

[1] 10 minute delay for models manufactured before 12/18 and an 8 minute delay on models manufactured after 11/18.

RF1200C/RF2300C

QuietQube Remote Air-cooled Models with Remote Condensing Unit

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies correct rotation the time delay[1] ends and the liquid line solenoid valve opens.

- When the refrigerant pressure is high enough to close the low-pressure control the contactor coil energizes and the compressor starts.
- The refrigerant pressure will increase and close the fan cycling pressure control and the condenser fan motor starts.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line solenoid valve closes and the refrigeration system pumps down.

- The refrigerant pressure drops and the fan cycling pressure control opens stopping the condenser fan motor.
- When the refrigerant pressure is low enough to open the low pressure control, the contactor coil is de-energized and the compressor stops.

The ice machine remains off until ice no longer contacts the bin thermostat.

[1] 10 minute delay for models manufactured before 12/18 and an 8 minute delay on models manufactured after 11/18.

RF1200C/RF2300C

Head Section with Rack Refrigeration system

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies correct rotation the time delay[1] ends and the liquid line and suction solenoid valves energize.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line and suction solenoid valves close.

The ice machine remains off until ice no longer contacts the bin thermostat.

[1] 10 minute delay for models manufactured before 12/18 and an 8 minute delay on models manufactured after 11/18.

RN0400

Self-Contained Air-Cooled & Water-Cooled

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The compressor rocker switch is moved to "ON".

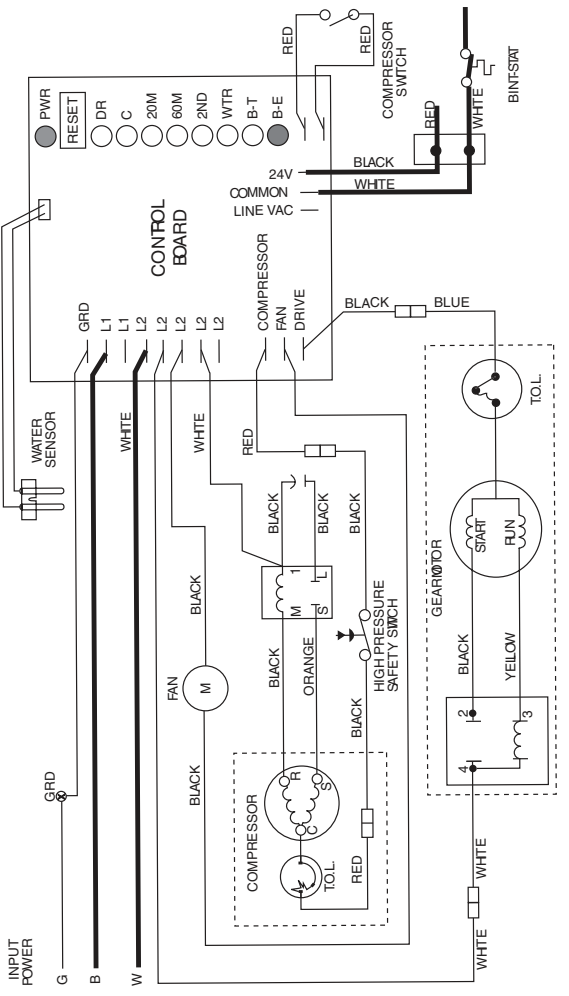
B. Ice does not contact the bin thermostat bulb.

C. The water reservoir is full of water.

With power supplied and the compressor rocker switch in the ON position, the gear motor and refrigeration system start. The float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. A 20 minute delay period initiates. The ice machine will restart when ice no longer contacts the bin thermostat and the 20 minute delay period expires.

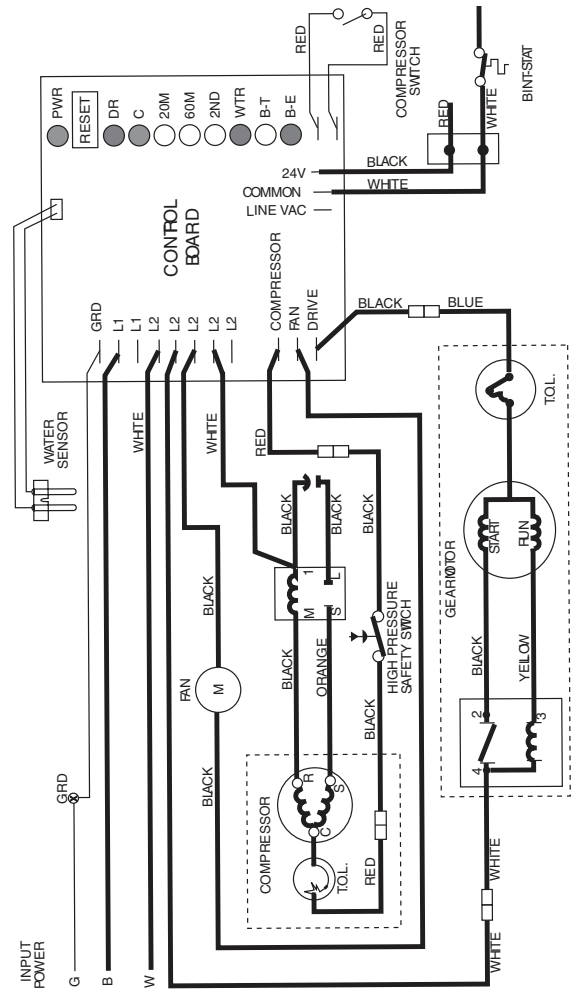
Step 1 Initial Startup

With power supplied to the control board the PWR (power) light is energized. The bin thermostat closes (BE light on) and the water level probe checks for water.

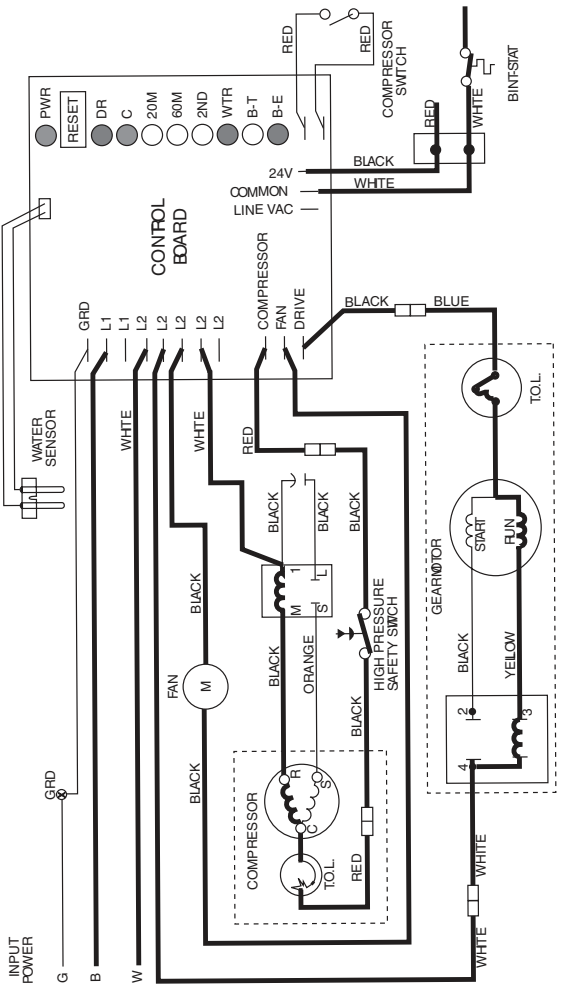


Step 2 Gear Motor & Compressor Startup

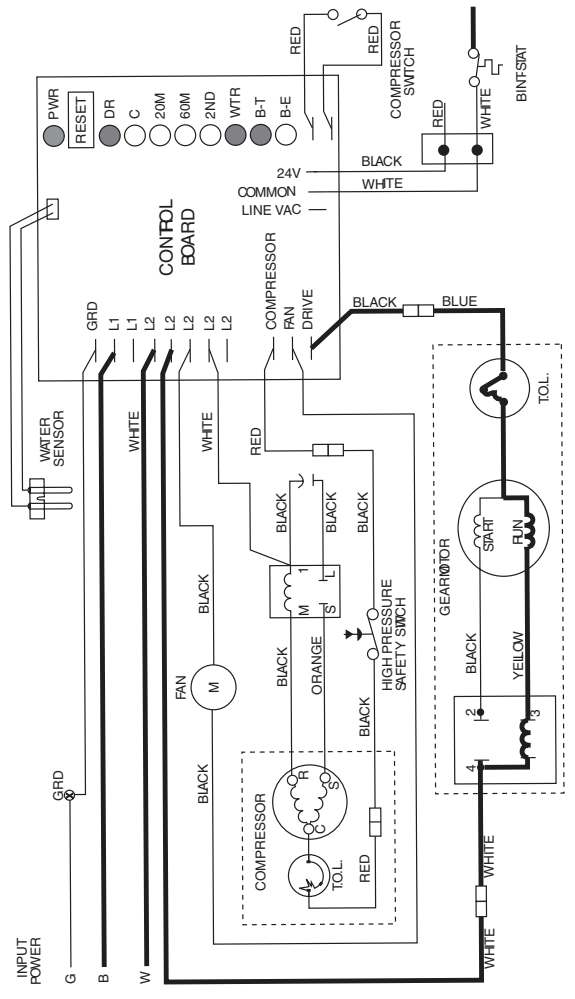
The WTR light energizes and the gear motor, compressor and fan motor start. Two additional lights energize DR (drive) and C (compressor).



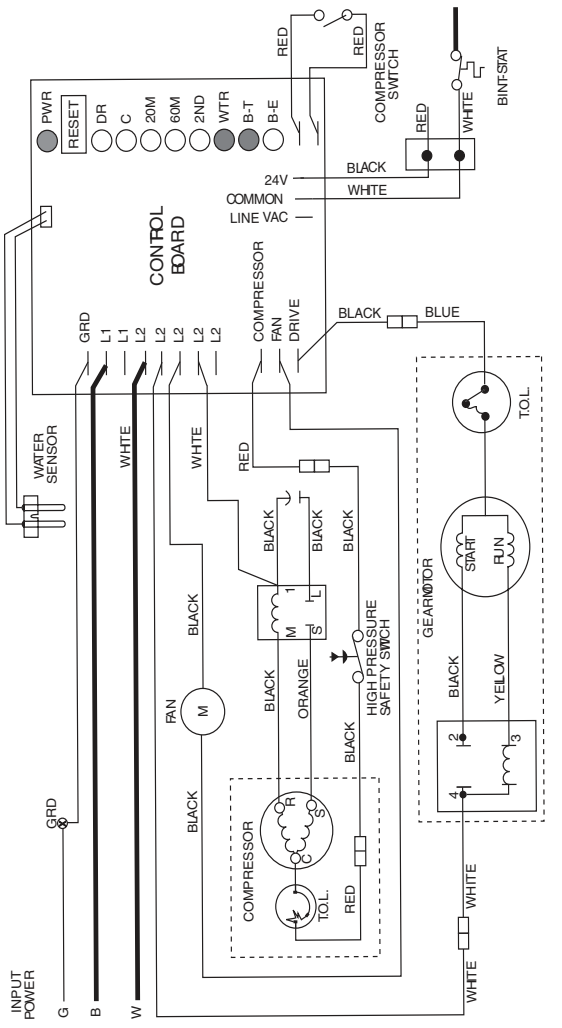
Step 3 When the current to the compressor and gear motor drops, the current relays open. The PWR, DR, C, WTR and BE lights remain energized throughout the freeze cycle.



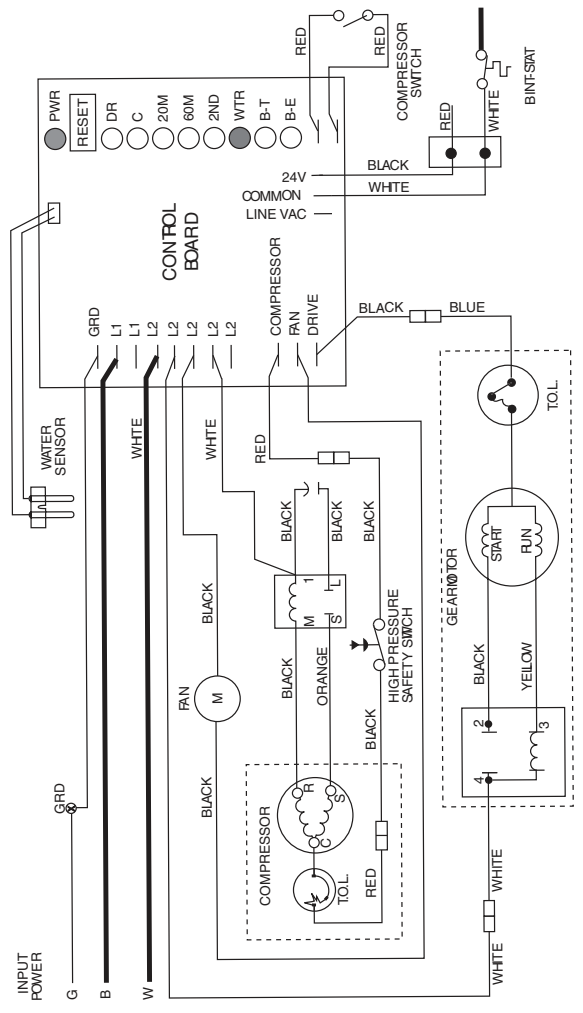
Step 4 The bin/dispenser fills and the bin thermostat opens. The BE light de-energizes and 10 seconds later the BT light energizes and the C light de-energizes. The compressor and fan motor stop, although the gear motor will run for an additional 60 seconds.



Step 5 The BT light is energized for 20 minutes to indicate the machine is in the 20 minute time delay period. Pressing the control board reset button cancels the time delay.



Step 6 After 20 minutes the BT light de-energizes. The PWR and WTR lights remain energized. When the bin thermostat closes the ice machine starts at step 1.



RN1000/RN1400

Self-Contained Air-Cooled & Water-Cooled

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The rocker switch is moved to ON.

B. The transport tube shuttle switch is closed.

C. The water reservoir is full of water.

Placing the toggle switch in the ON position starts the gear motor and refrigeration system. The water level sensor controls the water inlet valve and water level. The freeze cycle ends when ice contact opens the transport tube switch. A 60 minute time delay period initiates. The ice machine will restart when the ice transport tube switch closes and the 60 minute time delay period expires.

Flush Cycle

The ice machine will automatically flush the evaporator.

The refrigeration system will shut down and the gear motor will continue to run. After the flush is complete, the machine will refill and start the refrigeration system without a time delay.

RN1000/RN1400 Indicator lights

INDICATOR LIGHT LEGEND

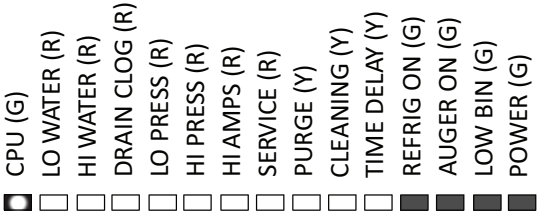


- With line voltage supplied the green Power light is on and the CPU light flashing a heartbeat indicates the central processing unit is working.
- Yellow lights indicate normal off conditions.
- Red lights indicate an alarm condition.

The sequence below is for normally operating machines. For alarm conditions refer to troubleshooting which starts on page 133.

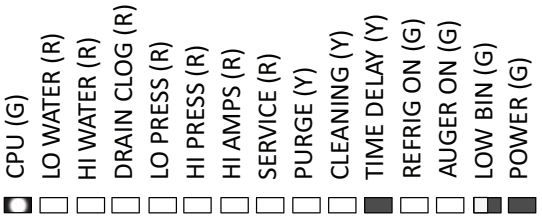
Step 1 Freeze cycle normal light operation

The CPU light flashes and the Refrigeration, Auger on, Low bin and Power lights are on.



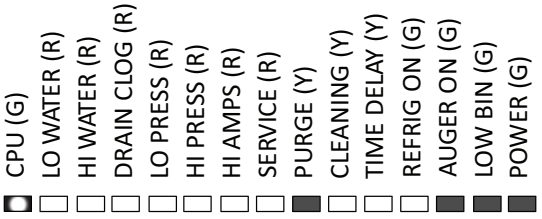
Step 2 Time delay cycle normal light operation

The bin fills with ice, the Low Bin light de-energizes and the Time delay light energizes. The compressor and gear motor immediately turn off and the condenser fan continues to run for 10 minutes before turning off. When the time delay ends and the Low bin light energizes the ice machine will restart.



Step 3 Purge cycle normal light operation

After 1 to 2 hours of ice making the control board will initiate a purge cycle. The compressor de-energizes and the gear motor and condenser fan motor continue to run. After the purge cycle is complete the ice machine starts without a time delay period.



RN1000C/RN1200C

QuietQube Remote Air-cooled Model with Remote Condensing Unit

NOTE: Ice machines use an auger to remove ice from the evaporator. Occasional noises (creaks, groans, squeaks, or pops) are a normal part of the ice making process.

Operation

The ice machine will not start until:

A. The rocker switch is moved to ON.

B. The transport tube switch is closed.

C. The water reservoir is full of water.

Placing the toggle switch in the ON position starts the gear motor and energizes the liquid line solenoid valve. The refrigerant pressure at the condensing unit increases and the low pressure switch closes and starts the refrigeration system. The water level sensor controls the water inlet valve and water level. The freeze cycle ends when ice contact opens the transport tube switch. The liquid line solenoid valve closes and the refrigerant pressure at the condensing unit drops. The low pressure switch opens and turns off the refrigeration system. A 60 minute time delay period initiates. The ice machine will restart when the ice transport tube switch closes and the 60 minute time delay period expires.

RN1000/RN1400 Indicator lights

INDICATOR LIGHT LEGEND

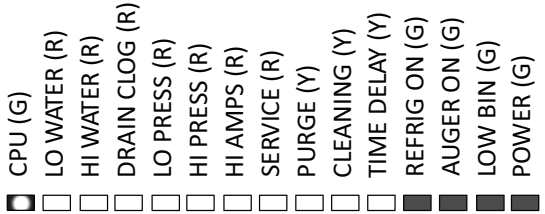


- With line voltage supplied the green Power light is on and the CPU light flashing a heartbeat indicates the central processing unit is working.
- Yellow lights indicate normal off conditions.
- Red lights indicate an alarm condition.

The sequence below is for normally operating machines. For alarm conditions refer to troubleshooting which starts on page 133.

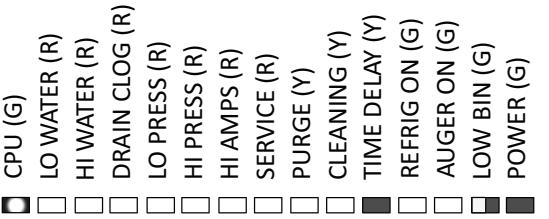
Step 1 Freeze cycle normal light operation

The CPU light flashes and the Refrigeration, Auger on, Low bin and Power lights are on.



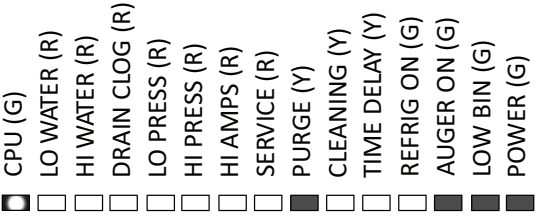
Step 2 Time delay cycle normal light operation

The bin fills with ice, the Low Bin light de-energizes and the Time delay light energizes. The compressor and gear motor immediately turn off and the condenser fan continues to run for 10 minutes before turning off. When the time delay ends and the Low bin light energizes the ice machine will restart.



Step 3 Purge cycle normal light operation

After 1 to 2 hours of ice making the control board will initiate a purge cycle. The compressor de-energizes and the gear motor and condenser fan motor continue to run. After the purge cycle is complete the ice machine starts without a time delay period.



Ice Production/Quality Check

QUALITY CHECK

Ice quality varies with ambient and water temperatures, and is measured by the amount of water in the ice. Generally speaking, higher incoming water temperature results in lower ice quality. Lower water temperature results in higher ice quality.

ICE PRODUCTION CHECK

NOTE: Ice production checks that are within 10% of the charted capacity are considered normal due to variances in air and water temperatures. Actual temperatures will seldom match the chart exactly.

1. Run the ice machine a minimum of 10 minutes to allow the system to stabilize.
2. Catch the ice in a non-perforated container for 7 minutes and 12 seconds or for more accuracy 14 minutes and 24 seconds.
3. Weigh the container and ice, then deduct the weight of the container.
4. Convert ounces to pounds.
5. Example: 3 lbs. 12 oz. converts to 3.75 lbs.
6. (12 oz. ÷ 16 oz. =.75 lb.)
7. Determine the 24-hour ice production capacity.
    A. 7 minutes 12 seconds = Multiply the total ice weight by 200.
    B. 14 minutes 24 seconds = Multiply the total ice weight by 100.

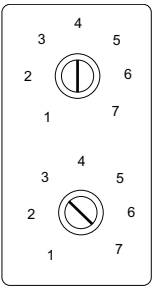
Thermostat Settings

Bin Thermostat:

The bin thermostat sensing bulb is located in the ice chute on modular models and in the bin thermostat holder on the right side of the bin on self storage models. The bin thermostat turns the ice machine on and off as the level of ice in the bin changes. Use the indicator on the ice machine label as the initial setting and adjust as required.

Evaporator Low Temperature Safety Thermostat:

The evaporator low temperature safety thermostat protects the ice machine if the evaporator temperature is too cold. Refer to chart for correct setting.



Bin Thermostat
Small Numbers = Less ice in bin
Large Numbers = More ice in bin
Start at Chart Setting, then adjust as required

Evaporator Low Temperature Safety Thermostat
Refer to chart for setting
Incorrect settings will cause ice machine to shut off prematurely

Thermostat Setting Chart

NOTE: Settings are for reference only. Factory setting is indicated on control label and overrides information listed on this page.

Model	Bin Thermostat Setting	Evaporator Thermostat Setting
RF0244	5	5
RFS0244	5	6
RNS0244	5	5
RF0266	5	5
RF0300	4	7
RFS0300	3	N/A
RNS0308	3	6
RF0385	5	7
RNS0385	5	7
RF0388	5	7
RF0399	5	7
RF0644	5	N/A
RF0650	3	N/A
RFS0650	3	N/A
RNS1000	3	N/A
RF1200	4	N/A
RFS1200	3	N/A
RF2300	3	N/A
RFS2300	3	N/A

Troubleshooting

Diagnostic troubleshooting for the ice machine involves following flowcharts that are dependent on symptoms of the failed machine.

Follow the flowcharts for the failure symptom and model you are working on.

NOTE: Refer to the sequence of operation to determine where in the sequence the ice machine has failed. An example would be an ice machine that energizes the gear motor, but the compressor does not energize. Following the electrical flowchart will quickly and easily eliminate non issues.

RF0244/ RNS0244/RF0266/RF0385/ RFS0385/RF0388/RF0399/RNS0385 Troubleshooting

SELF-CONTAINED AIR-COOLED

Normal Operation

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

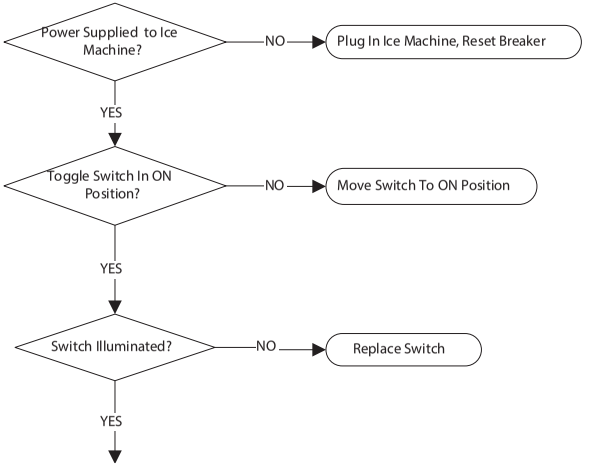
A. Bin Thermostat

B. Low Evaporator Temperature Thermostat

C. Low Water Level Switch

NOTE: Placing the toggle switch in the ON position starts the gear motor and refrigeration system. The float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine will restart when ice no longer contacts the bin thermostat.

Electrical Flowchart - RF0244/RNS0244/RF0266/RF0385/RFS0385/RNS0385 RF0388/RF0399 AIR & WATER



YES
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
YES
Evaporator Safety Thermostat Closed? RF0266 LPCO
NO
Evaporator Cold?
Yes
Allow Evaporator To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
YES

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

Gear Motor Runs?
NO
YES
Line Voltage To Gear motor?
Yes
No
Repair Wiring
Remove Auger From Evaporator
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Evaporator
Line Voltage To Compressor Relay Coil?
NO
YES
Wiring From Gearmotor Intact?
Yes
Replace Gear Motor
No
Repair Wiring

YES
Relay Closed?
NO
Replace Relay
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

RF0300 Troubleshooting

SELF-CONTAINED AIR-COOLED

Normal Operation

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

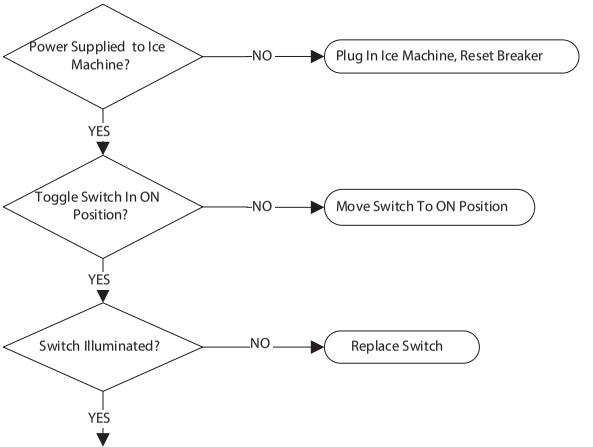
B. Low Evaporator Temperature Thermostat

C. Ice Chute Safety Switch

D. Low Water Level Switch

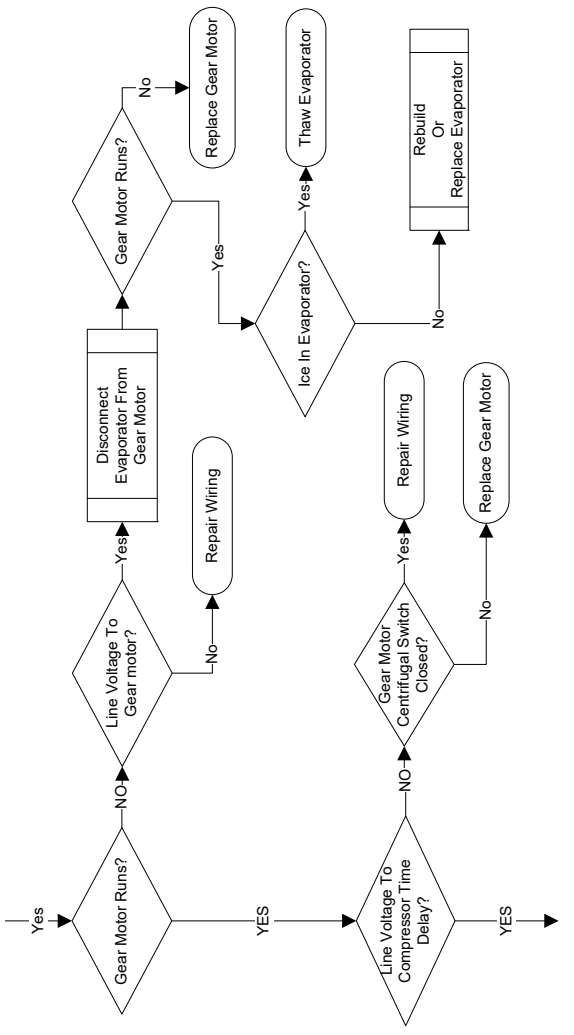
Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

Electrical Flowchart - RF0300/RNS0300



Yes
Bin Thermostat Closed?
NO
YES
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
Evaporator Safety Thermostat Closed?
NO
YES
Evaporator Cold?
Yes
Allow Evaporator To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
Chute Switch Closed?
NO
Yes
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES


Yes
Gear Motor Runs?
NO
Line Voltage To Gear motor?
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
No
Repair Wiring
YES
Line Voltage To Compressor Time Delay?
NO
Gear Motor Centrifugal Switch Closed?
Yes
Repair Wiring
No
Replace Gear Motor
YES

Yes
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
Yes
Line Voltage To Compressor Contactor Coil?
NO
Install Compressor Time Delay Jumper
Power To Contactor Coil?
No
Repair Wiring
Yes
Replace Time Delay Relay
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

RFS0300/RNS0300 Troubleshooting

SELF-CONTAINED AIR-COOLED

When the toggle switch is placed in the "ON" position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

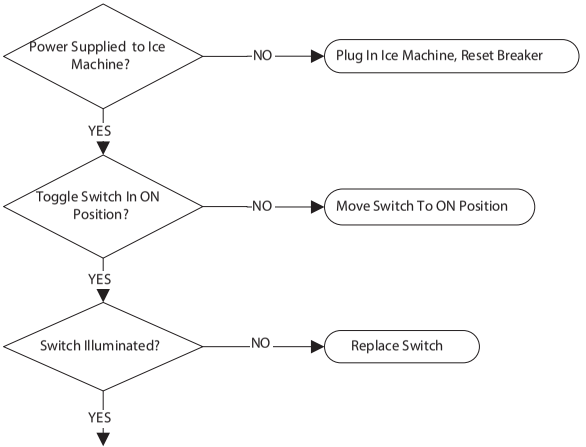
C. Low Water Level Switch

D. High Pressure Cut-out Switch

E. Low Pressure Cut-Out Switch

Placing the toggle switch in the ON position starts the gear motor and a 10 minute compressor time delay. The compressor starts and the float valve controls the water inlet valve and water level. The freeze cycle ends when ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

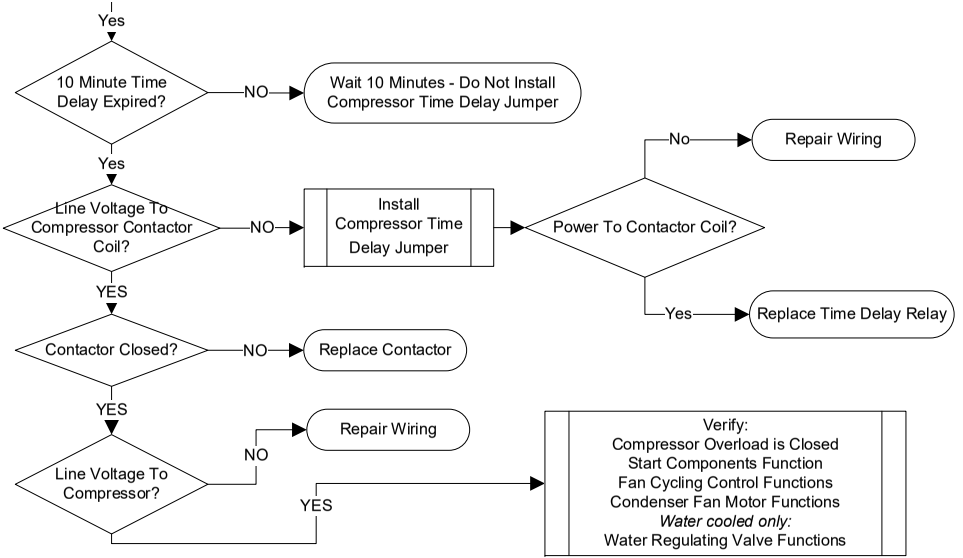
Electrical Flowchart - RFS0300/RNS0300



Yes
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
YES
Low Pressure Switch Closed?
NO
Evaporator Cold?
Yes
Allow Evaporator To Warm And Retest
No
Refrigerant Pressure Below Cut-out?
Yes
Repair Refrigerant Leak, Evacuate, Recharge
No
Replace LPCO
YES
Chute Switch Closed?
NO
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator
Yes

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

Yes
Gear Motor Runs?
NO
Line Voltage To Gear motor?
No
Repair Wiring
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
YES
Line Voltage To Compressor Time Delay?
NO
Gear Motor Centrifugal Switch Closed?
Yes
Repair Wiring
No
Replace Gear Motor
YES


Yes
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
Yes
Line Voltage To Compressor Contactor Coil?
NO
Install Compressor Time Delay Jumper
Power To Contactor Coil?
No
Repair Wiring
Yes
Replace Time Delay Relay
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

RF0644/RF0650/RNS0600/RNS1000/RF1200 RFS1200 Troubleshooting

SELF-CONTAINED AIR-COOLED

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

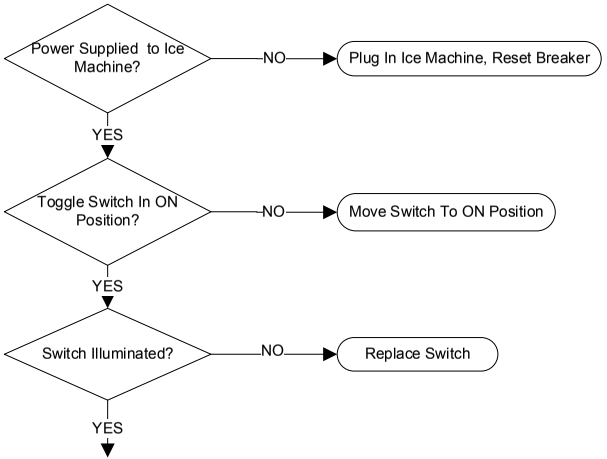
E. Low Water Level Switch

NOTE: Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the compressor starts. The ice machine will continue to make ice until ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

ROTATION SENSOR OPERATION

Light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking 2 Flashes Per Second	Time Delay Period - First 1 To 7 Faults
Red Solid	Lockout - 8 Consecutive Faults Due To A Speed Fault Remove/Restore Power To Reset
Red Blinking Slowly	Lockout - 8 Consecutive Faults Due To A Short Circuit

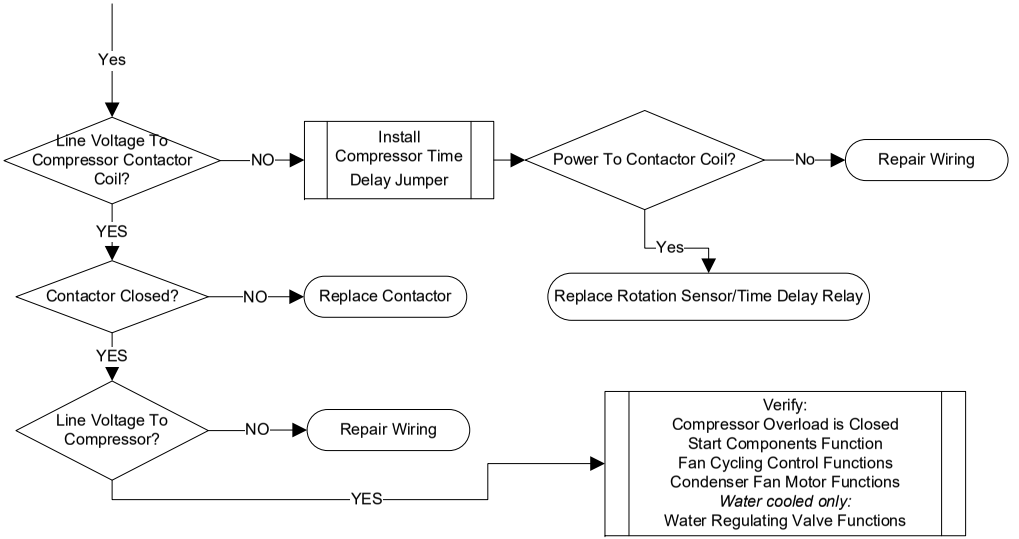
Electrical Flowchart – RF0644/RNS0600/RF0650/RNS1000 RF1200/RFS1200 AIR & WATER



Yes
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
YES
Low Pressure Control Closed?
NO
Evaporator Cold?
Yes
Allow Evaporator To Warm And Retest
No
Refrigerant Pressure Below Cut-out?
Yes
Repair Refrigerant Leak, Evacuate, Recharge
No
Replace LPCO
YES
High Pressure Control Closed?
NO
Resets?
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
No
Refrigerant Pressure Above Cut-out?
Yes
Clean Condenser, Check Fan Motor, Check FCC & Refrigeration System
No
Replace HPCO
YES

YES
Chute Switch Closed?
NO
Yes
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator
Yes
Reservoir Full Of Water?
NO
YES
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
Low Water Level Switch Closed?
NO
YES
Replace Switch or Float Assembly

Yes
Gear Motor Runs?
YES
NO
Line Voltage To Gear motor?
No
Repair Wiring
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES


Yes
Line Voltage To Compressor Contactor Coil?
NO
Install Compressor Time Delay Jumper
Power To Contactor Coil?
No
Repair Wiring
YES
Yes
Contactor Closed?
NO
Replace Contactor
Replace Rotation Sensor/Time Delay Relay
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

RNS1000/RF1200C/RFS1200C Troubleshooting

QUIETQUBE REMOTE AIR-COOLED MODELS WITH REMOTE CONDENSING UNIT

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line solenoid valve opens.

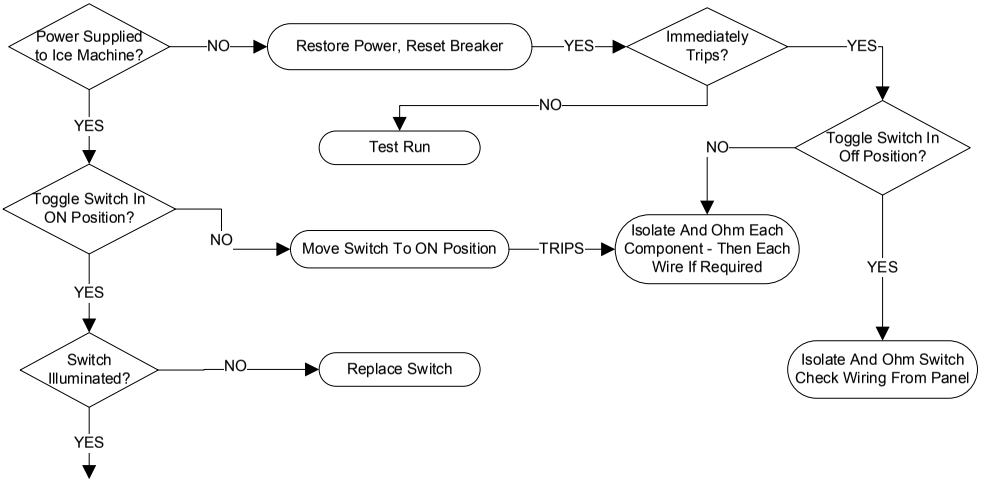
- When the refrigerant pressure is high enough to close the low-pressure control the contactor coil energizes and the compressor starts.
- The refrigerant pressure will increase and close the fan cycling pressure control and the condenser fan motor starts.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line solenoid valve closes and the refrigeration system pumps down.

- The refrigerant pressure drops and the fan cycling pressure control opens stopping the condenser fan motor.
- When the refrigerant pressure is low enough to open the low pressure control, the contactor coil is de-energized and the compressor stops.

NOTE: The ice machine remains off until ice no longer contacts the bin thermostat.

Electrical Flowchart - RNS1000/RF1200C/RFS1200C QuietQube



YES
Bin Thermostat Closed?
NO
Ice Contacting Thermostat?
NO
Adjusting Closes Thermostat?
NO
Replace Thermostat
YES
Verify New Setting Cycles Machine On/Off
YES
Remove Ice - Allow To Warm And Retest
YES
Chute Switch Closed?
NO
Ice Contacting Actuator?
NO
Actuator Functions?
NO
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
YES
Replace Switch
YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
NO
Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Repair Wiring
YES
Restore Water Supply / Replace Water Inlet Valve

YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Gear Motor Runs?
NO
Line Voltage To Gear motor?
NO
Repair Wiring
YES
Disconnect Evaporator From Gear Motor
YES
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES
Gear Motor Runs?
NO
Replace Gear Motor
YES
Ice In Evaporator?
YES
Thaw Evaporator
NO
Rebuild Or Replace Evaporator

YES
Line Voltage To Left Delay Relay Coil?
NO
YES
Delay Relay Contacts Closed?
NO
Replace Relay
YES
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
NO
Repair Wiring
Yes
Delay Relay Contacts Closed?
YES
Replace Rotation Sensor/Time Delay
NO
Replace Relay

YES
Line Voltage To Compressor Contactor Coil?
NO
YES
High Pressure Control Closed?
NO
YES
Resets?
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
NO
Refrigerant Pressure Above Cut-out?
NO
Replace HPCO
YES
Clean Condenser, Check Fan Motor, Check Fan Cycle Control & Refrigeration System
Low Pressure Control Closed?
NO
YES
Repair Wiring
Line Voltage At Liquid Line Solenoid Valve?
NO
Replace Relay
YES
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in
Both Shut-off Valves are Open
Repair/Replace Liquid Line Solenoid
Locate and Repair Refrigerant Leak
Replace LPCO Switch

YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions

RF1200R/RFS1200R Troubleshooting

HEAD SECTION FOR RACK REFRIGERATION SYSTEMS

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line and suction solenoid valves energize.

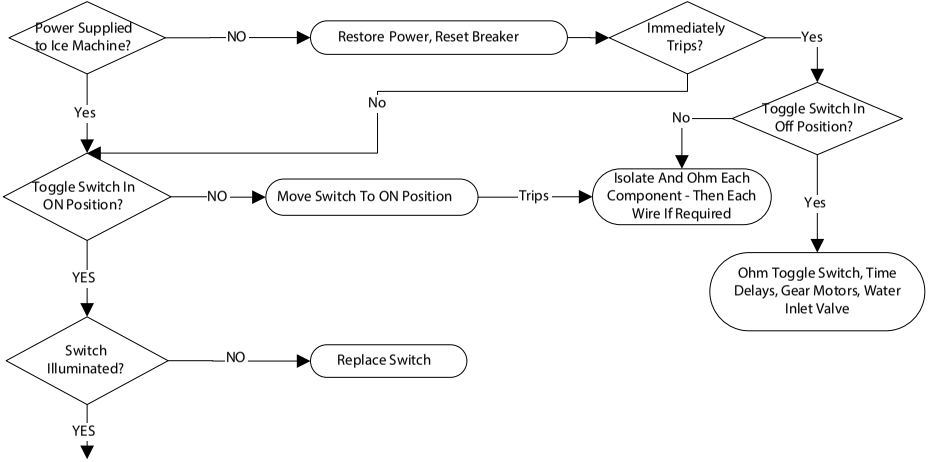
The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line and suction solenoid valves close.

The ice machine remains off until ice no longer contacts the bin thermostat.

ROTATION SENSOR OPERATION

Light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking 2 Flashes Per Second	Time Delay Period - First 1 To 7 Faults
Red Solid	Lockout - 8 Consecutive Faults Due To A Speed Fault Remove/Restore Power To Reset
Red Blinking Slowly	Lockout - 8 Consecutive Faults Due To A Short Circuit

Electrical Flowchart – RF1200R/RFS1200R



Yes
Bin Thermostat Closed?
NO
YES
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
Chute Switch Closed?
NO
Yes
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator

Yes
Float Switch Closed?
No
Replace Switch or Float Assembly
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

YES
Gear Motor Runs?
YES
10 Minute Time Delay Expired?
YES
NO
Line Voltage To Gear motor?
No
Repair Wiring
Yes
Disconnect Evaporator From Gear Motor
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator

YES
Line Voltage To Delay Relay Coil?
NO
Install Compressor Time Delay Jumper
YES
Delay Relay Contacts Closed?
NO
Replace Relay
YES
Line Voltage To Contactor Coil?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Power To Time Delay Relay Coil?
No
Repair Wiring
Yes
Delay Relay Contacts Closed?
No
Yes
Replace Rotation Sensor/Time Delay

YES
Line Voltage To Suction Line Solenoid?
NO
Check Contactor Contacts On Both Contactors Repair Wiring
YES
Line Voltage To Liquid Line Solenoid?
NO
Repair Wiring
YES
Suction And Liquid Line Solenoid Valves Open?
NO
Replace Defective Valve
YES
Determine Refrigeration System Issue

RF2300/RFS2300 Troubleshooting

SELF-CONTAINED AIR-COOLED

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

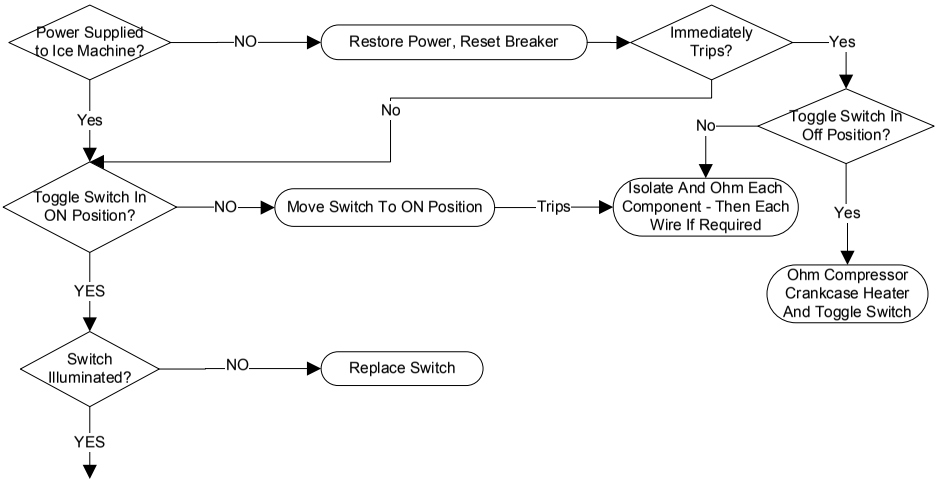
E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the compressor starts. The ice machine will continue to make ice until ice contacts the bin thermostat. The ice machine remains off until ice no longer contacts the bin thermostat.

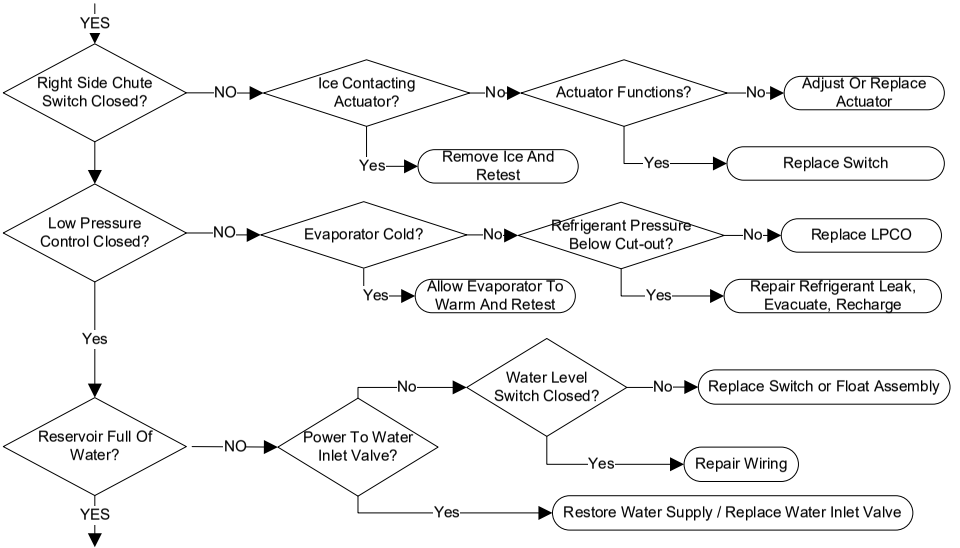
ROTATION SENSOR OPERATION

Light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking	Fault Time Delay Period
Red Solid	Lockout - 8 Consecutive Faults Remove/Restore Power To Reset

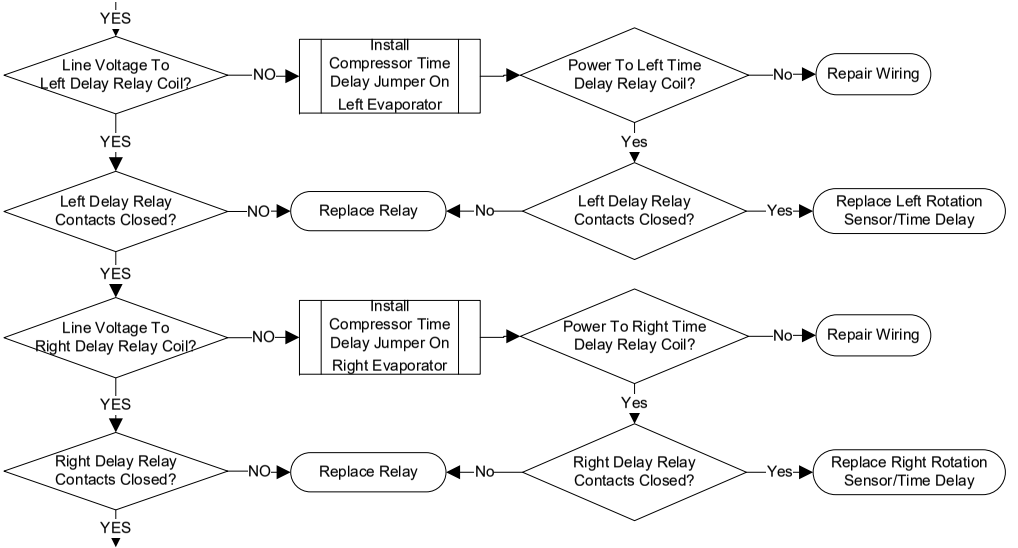
Electrical Flowchart – RF2300/RFS2300 Air & Water



Yes
Bin Thermostat Closed?
NO
YES
Ice Contacting Thermostat?
No
Yes
Remove Ice - Allow To Warm And Retest
Adjusting Closes Thermostat?
No
Yes
Replace Thermostat
Verify New Setting Cycles Machine On/Off
High Pressure Control Closed?
NO
YES
Resets?
No
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
Refrigerant Pressure Above Cut-out?
No
Yes
Replace HPCO
Clean Condenser, Check Fan Motor, Check FCC & Refrigeration System
Left Side Chute Switch Closed?
NO
Yes
Ice Contacting Actuator?
No
Yes
Remove Ice And Retest
Actuator Functions?
No
Yes
Adjust Or Replace Actuator
Replace Switch


YES
Right Side Chute Switch Closed?
NO
Ice Contacting Actuator?
No
Actuator Functions?
No
Adjust Or Replace Actuator
Yes
Remove Ice And Retest
Yes
Replace Switch
Low Pressure Control Closed?
NO
Evaporator Cold?
No
Refrigerant Pressure Below Cut-out?
No
Replace LPCO
Yes
Allow Evaporator To Warm And Retest
Yes
Repair Refrigerant Leak, Evacuate, Recharge
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Water Level Switch Closed?
No
Replace Switch or Float Assembly
Yes
Repair Wiring
YES
Yes
Restore Water Supply / Replace Water Inlet Valve

Yes
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Gear Motor Runs?
NO
Line Voltage To Gear motor?
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
No
Repair Wiring
YES
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES


YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
No
Repair Wiring
YES
Yes
Left Delay Relay Contacts Closed?
NO
Replace Relay
No
Left Delay Relay Contacts Closed?
Yes
Replace Left Rotation Sensor/Time Delay
YES
Line Voltage To Right Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Right Evaporator
Power To Right Time Delay Relay Coil?
No
Repair Wiring
YES
Yes
Right Delay Relay Contacts Closed?
NO
Replace Relay
No
Right Delay Relay Contacts Closed?
Yes
Replace Right Rotation Sensor/Time Delay
YES

Yes
Line Voltage To Compressor Contactor Coil?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function
Fan Cycling Control Functions
Condenser Fan Motor Functions
Water cooled only:
Water Regulating Valve Functions

QUIETQUBE REMOTE AIR-COOLED MODELS WITH REMOTE CONDENSING UNIT

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. High Pressure Cut-out Switch

C. Ice Chute Safety Switch

D. Low Pressure Switch

E. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line solenoid valve opens.

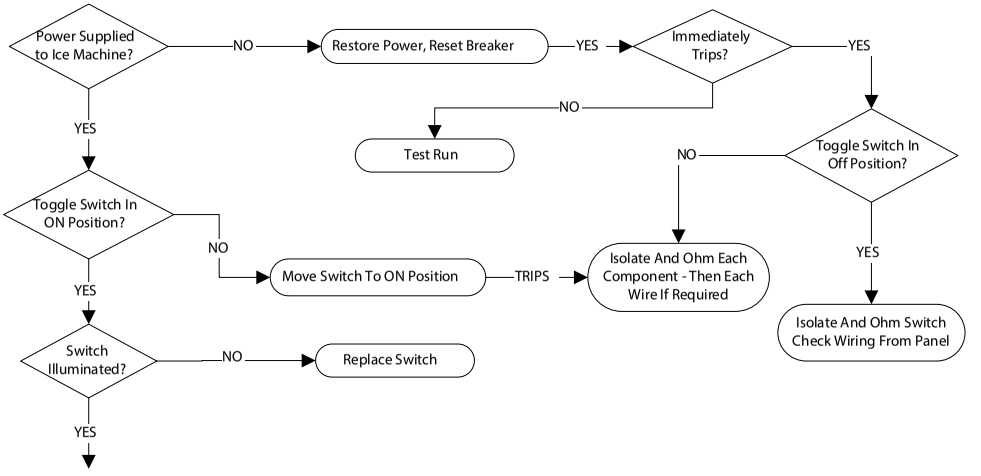
- When the refrigerant pressure is high enough to close the low-pressure control the contactor coil energizes and the compressor starts.
- The refrigerant pressure will increase and close the fan cycling pressure control and the condenser fan motor starts.

The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line solenoid valve closes and the refrigeration system pumps down.

- The refrigerant pressure drops and the fan cycling pressure control opens stopping the condenser fan motor.
- When the refrigerant pressure is low enough to open the low pressure control, the contactor coil is de-energized and the compressor stops.

NOTE: The ice machine remains off until ice no longer contacts the bin thermostat.

Electrical Flowchart - RF2300C/RFC2300C QuietQube

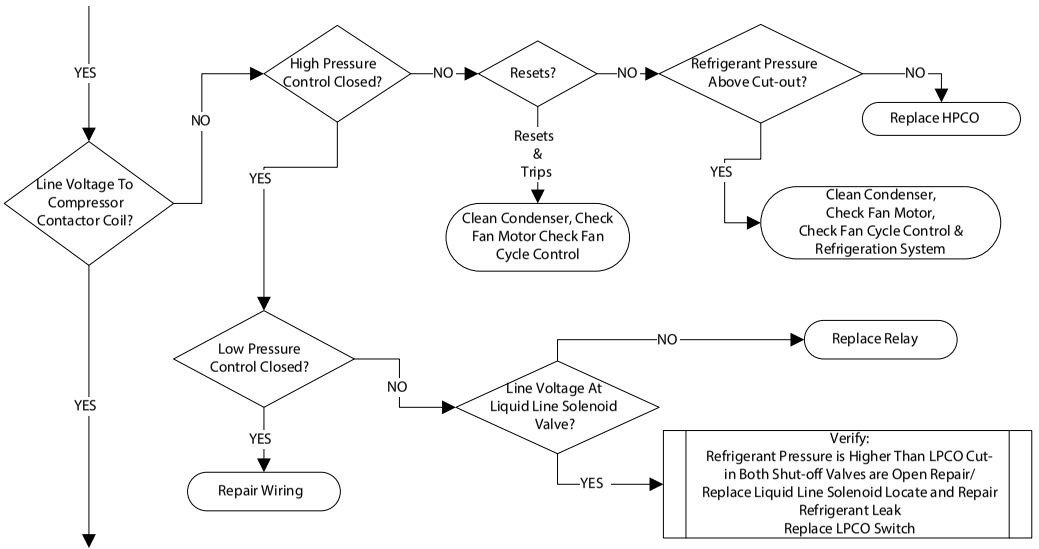


YES
Bin Thermostat Closed?
YES
NO
Ice Contacting Thermostat?
YES
Remove Ice - Allow To Warm And Retest
NO
Adjusting Closes Thermostat?
YES
Verify New Setting Cycles Machine On/Off
NO
Replace Thermostat
Left Side Chute Switch Closed?
YES
NO
Ice Contacting Actuator?
YES
Remove Ice And Retest
NO
Actuator Functions?
YES
Replace Switch
NO
Adjust Or Replace Actuator
Right Side Chute Switch Closed?
YES
NO
Ice Contacting Actuator?
YES
Remove Ice And Retest
NO
Actuator Functions?
YES
Replace Switch
NO
Adjust Or Replace Actuator

YES
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
NO
Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Repair Wiring
YES
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES
Do Both Gear Motors Run?
NO
Line Voltage To Gear motors?
NO
Repair Wiring
YES
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
NO
Replace Gear Motor
YES
Ice In Evaporator?
YES
Thaw Evaporator
NO
Rebuild Or Replace Evaporator

Yes
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
YES
Power To Left Time Delay Relay Coil?
No
Repair Wiring
Yes
Left Delay Relay Contacts Closed?
No
Replace Relay
Yes
Replace Left Rotation Sensor/Time Delay
Left Delay Relay Contacts Closed?
NO
YES

YES
Line Voltage To Right Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Right Evaporator
YES
Right Delay Relay Contacts Closed?
NO
Replace Relay
YES
Power To Right Time Delay Relay Coil?
NO
Repair Wiring
YES
Right Delay Relay Contacts Closed?
YES
Replace Right Rotation Sensor/Time Delay
NO
Replace Relay


YES
Line Voltage To Compressor Contactor Coil?
NO
High Pressure Control Closed?
NO
Resets?
NO
Refrigerant Pressure Above Cut-out?
NO
Replace HPCO
YES
Resets & Trips
Clean Condenser, Check Fan Motor Check Fan Cycle Control
YES
Clean Condenser, Check Fan Motor, Check Fan Cycle Control & Refrigeration System
YES
Low Pressure Control Closed?
NO
Line Voltage At Liquid Line Solenoid Valve?
NO
Replace Relay
YES
Repair Wiring
YES
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in Both Shut-off Valves are Open Repair/ Replace Liquid Line Solenoid Locate and Repair Refrigerant Leak
Replace LPCO Switch

YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Verify:
Compressor Overload is Closed
Start Components Function Fan
Cycling Control Functions
Condenser Fan Motor Functions

RF2300R/RFS2300R Troubleshooting

HEAD SECTION FOR RACK REFRIGERATION SYSTEMS

Normal Operation

When the toggle switch is placed in the ON position the following controls must be in the closed position before the ice machine will start:

A. Bin Thermostat

B. Ice Chute Safety Switch

C. Low Water Level Switch

Placing the toggle switch in the ON position starts the gear motor. After the rotation speed sensor verifies 10 minutes of correct rotation the time delay ends and the liquid line and suction solenoid valves energize.

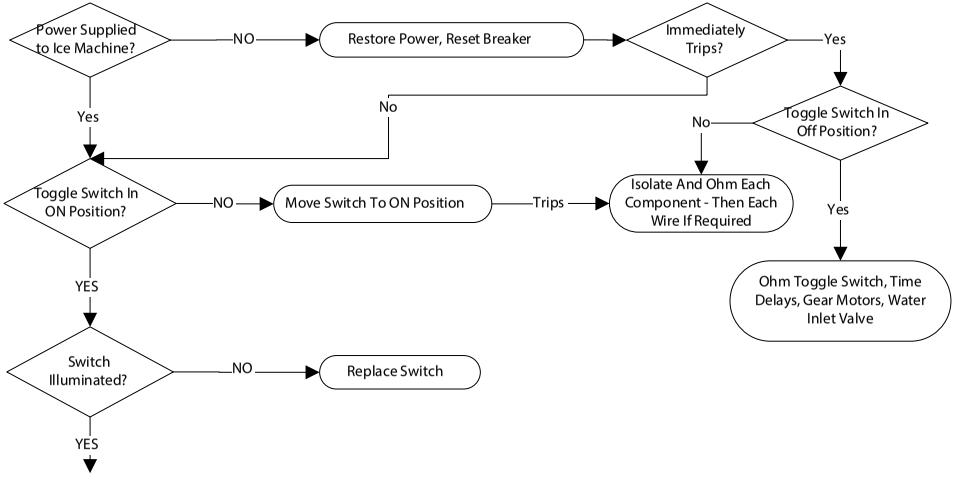
The ice machine will continue to make ice until ice contacts the bin thermostat and the liquid line and suction solenoid valves close.

The ice machine remains off until ice no longer contacts the bin thermostat.

ROTATION SENSOR OPERATION

Light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking	Fault Time Delay Period
Red Solid	Lockout - 8 Consecutive Faults Remove/Restore Power To Reset

Electrical Flowchart - RF2300R/RFS2300R



Yes
Bin Thermostat Closed?
NO
YES
Ice Contacting Thermostat?
Yes
Remove Ice - Allow To Warm And Retest
No
Adjusting Closes Thermostat?
Yes
Verify New Setting Cycles Machine On/Off
No
Replace Thermostat
Yes
Left Side Chute Switch Closed?
NO
YES
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator
Yes
Right Side Chute Switch Closed?
NO
YES
Ice Contacting Actuator?
Yes
Remove Ice And Retest
No
Actuator Functions?
Yes
Replace Switch
No
Adjust Or Replace Actuator

Yes
Float Switch Closed?
No
Replace Switch or Float Assembly
Yes
Reservoir Full Of Water?
NO
Power To Water Inlet Valve?
No
Repair Wiring
Yes
Restore Water Supply / Replace Water Inlet Valve
YES
Low Water Level Switch Closed?
NO
Replace Switch or Float Assembly
YES

YES
Gear Motor Runs?
YES
NO
Line Voltage To Gear motor?
No
Repair Wiring
Yes
Disconnect Evaporator From Gear Motor
Gear Motor Runs?
No
Replace Gear Motor
Yes
Ice In Evaporator?
Yes
Thaw Evaporator
No
Rebuild Or Replace Evaporator
10 Minute Time Delay Expired?
NO
Wait 10 Minutes - Do Not Install Compressor Time Delay Jumper
YES

YES
Line Voltage To Left Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Left Evaporator
Power To Left Time Delay Relay Coil?
No
Repair Wiring
Yes
YES
Left Delay Relay Contacts Closed?
NO
Replace Relay
No
Left Delay Relay Contacts Closed?
Yes
Replace Left Rotation Sensor/Time Delay
YES
Line Voltage To Right Delay Relay Coil?
NO
Install Compressor Time Delay Jumper On Right Evaporator
Power To Right Time Delay Relay Coil?
No
Repair Wiring
Yes
YES
Right Delay Relay Contacts Closed?
NO
Replace Relay
No
Right Delay Relay Contacts Closed?
Yes
Replace Right Rotation Sensor/Time Delay
YES

Yes
Line Voltage To Contactor Coil?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage To Suction Line Solenoid?
NO
Check Contactor Contacts On Both Contactors Repair Wiring
YES

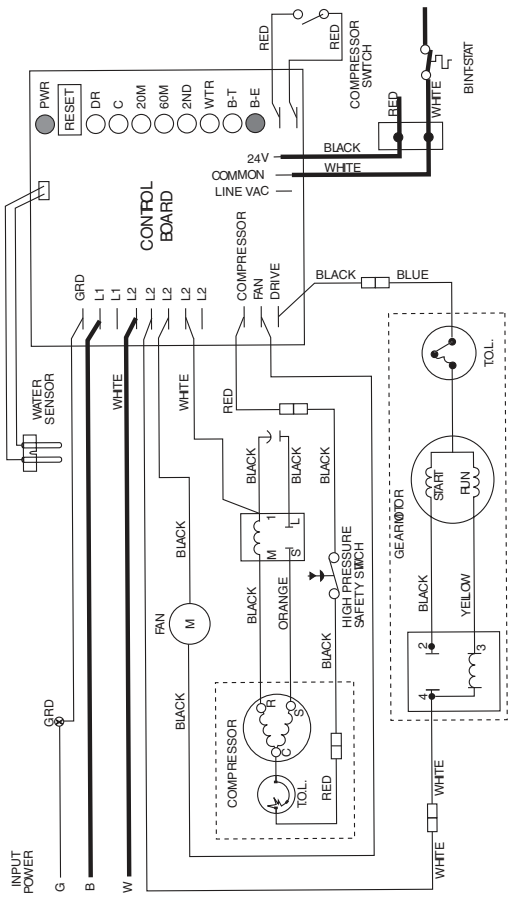
YES
Line Voltage To Liquid Line Solenoid?
NO
Repair Wiring
YES
Suction And Liquid Line Solenoid Valves Open?
NO
Replace Defective Valve
YES
Determine Refrigeration System Issue

RN0400 Troubleshooting

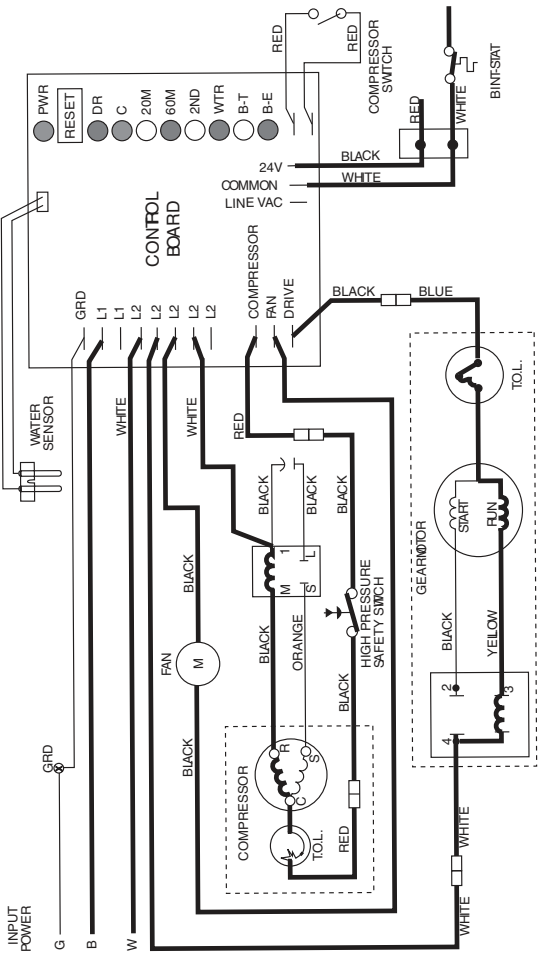
NOTE: Refer to "RN0400" on page 29 for normal sequence of operation.

OVER-TORQUE FAILURE

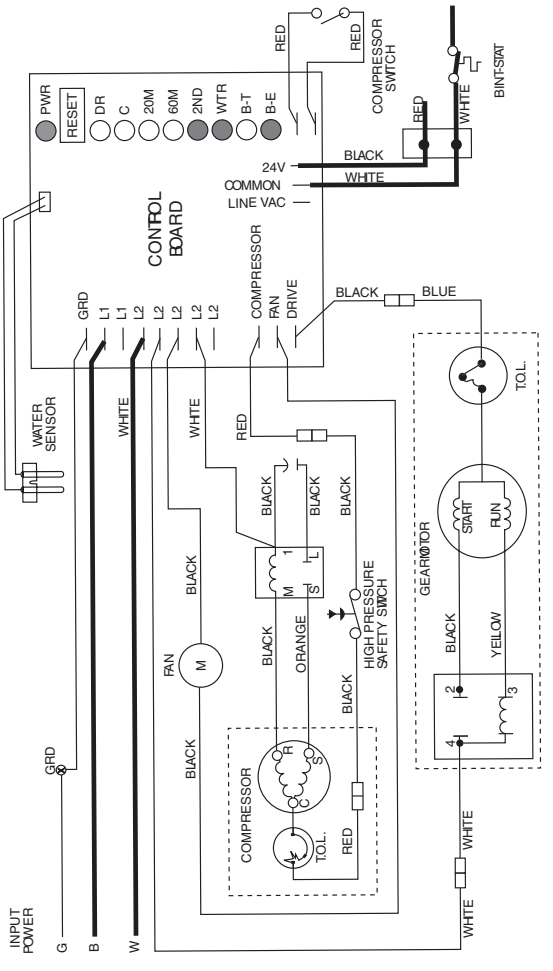
Step 1 The ice machine stops and the 20M light energizes. The PWR, WTR and BE lights remain energized. The ice machine restarts after 20 minutes.



Step 2 Successful restart and normal operation - The 20M light de-energizes and the 60M light energizes. After 60 minutes of normal operation the 60M light de-energizes.

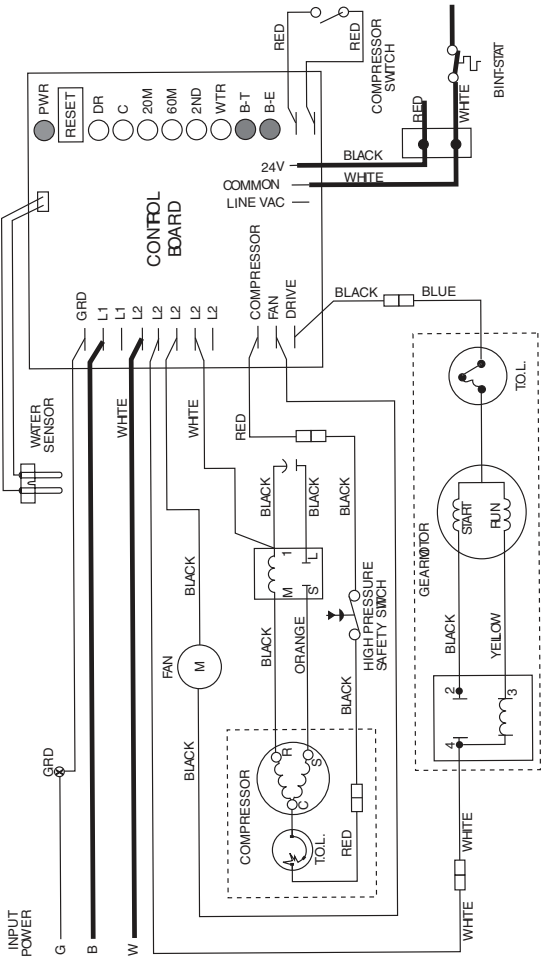


Step 3 Unsuccessful restart or abnormal operation - The 60M light de-energizes and the 2ND light energizes. The reset button on the control board must be pressed to restart the ice machine.

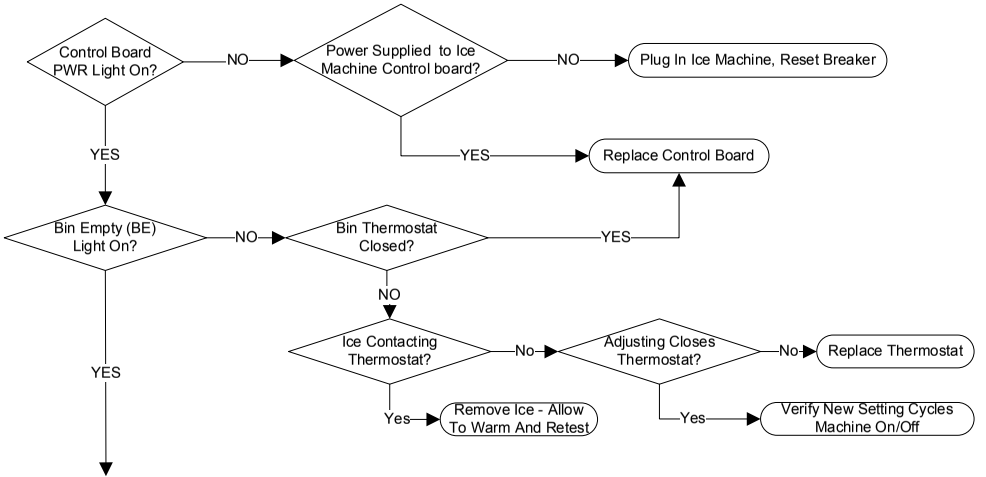


WATER LOSS FAILURE

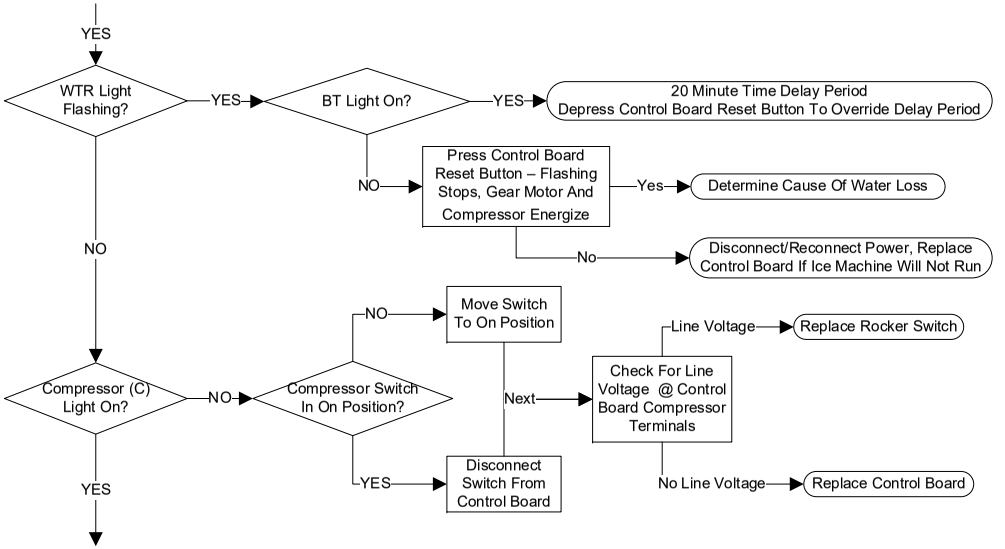
The ice machine stops and the BT light energizes and the WTR light de-energizes. If water is restored the WTR light will flash as an indicator. The flashing WTR light can be cleared by pressing the reset button on the control board.



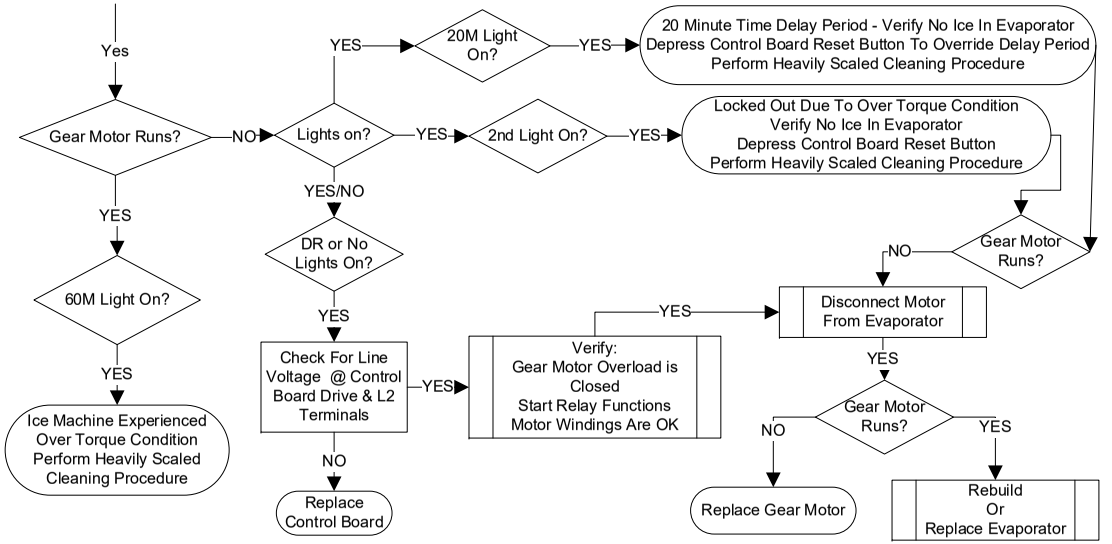
Electrical Flowchart – RN0400



Yes
Time Delay (BT) Light Off?
NO
20 Minute Time Delay Period – Depress Control Board Reset Button To Override Delay Period
YES
Water (WTR) Light On?
NO
Water Supply OK?
No
Supply Water To Ice Machine
Yes
Reservoir Full?
NO
Line Voltage To Water Inlet Valve?
YES
Replace Water Inlet Valve
NO
YES
Disconnect Probes & Jumper Sensor Inputs On Control Board
WTR Light On
Clean, Repair, Or Replace Water Level Probe Assembly
WTR Light Off
Replace Control Board
YES


YES
WTR Light Flashing?
YES
BT Light On?
YES
20 Minute Time Delay Period
Depress Control Board Reset Button To Override Delay Period
NO
Press Control Board Reset Button – Flashing Stops, Gear Motor And Compressor Energize
Yes
Determine Cause Of Water Loss
No
Disconnect/Reconnect Power, Replace Control Board If Ice Machine Will Not Run
NO
NO
Move Switch To On Position
Line Voltage
Replace Rocker Switch
Compressor (C) Light On?
NO
Compressor Switch In On Position?
Next
Check For Line Voltage @ Control Board Compressor Terminals
YES
Disconnect Switch From Control Board
No Line Voltage
Replace Control Board
YES

Yes
Line Voltage @ Control Board Compressor And Fan Terminals?
NO or Only One Component Has Line Voltage
Replace Control Board
YES
HPCO Closed?
NO
Verify:
Clearances & Ambient Are OK
Filter & Condenser Are Clean
Condenser Fan Motor Functions
Water cooled Models:
Water Regulating Valve Functions
Reset Or Replace High Pressure Cut Out
YES
Line Voltage To Compressor?
NO
Repair Wiring
YES
Compressor Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES


Yes
Gear Motor Runs?
NO
YES
60M Light On?
YES
Ice Machine Experienced Over Torque Condition Perform Heavily Scaled Cleaning Procedure
Lights on?
YES
20M Light On?
YES
20 Minute Time Delay Period - Verify No Ice In Evaporator Depress Control Board Reset Button To Override Delay Period Perform Heavily Scaled Cleaning Procedure
2nd Light On?
YES
Locked Out Due To Over Torque Condition Verify No Ice In Evaporator Depress Control Board Reset Button Perform Heavily Scaled Cleaning Procedure
YES/NO
DR or No Lights On?
YES
Check For Line Voltage @ Control Board Drive & L2 Terminals
YES
Verify: Gear Motor Overload is Closed Start Relay Functions Motor Windings Are OK
NO
Replace Control Board
Gear Motor Runs?
NO
YES
Disconnect Motor From Evaporator
YES
Gear Motor Runs?
NO
YES
Replace Gear Motor
Rebuild Or Replace Evaporator

RN1000/RN1400 Troubleshooting

NOTE: Refer to "RN1000/RN1400" on page 36 for normal sequence of operation

INDICATOR LIGHT OPERATION

The lights on the control board can be used as quick failure mode indicators. If the failure mode isn't obvious from the light indicators, use the flowchart to systematically eliminate issues.

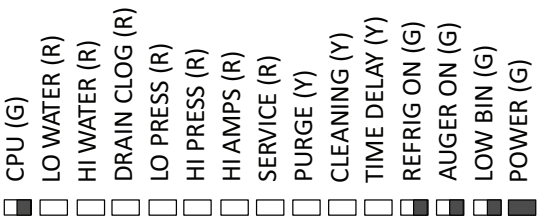
NOTE: Each relay on the control board has a light adjacent to the relay to indicate the relay coil has power.

Indicator light legend



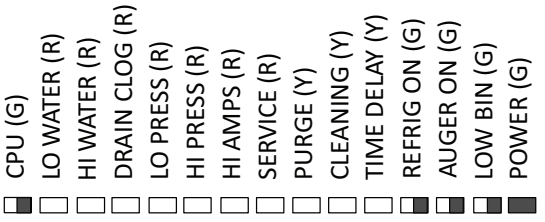
1. Normal light operation, No Ice

- Defective compressor or start component
- Defective contactor
- Defective control board relay



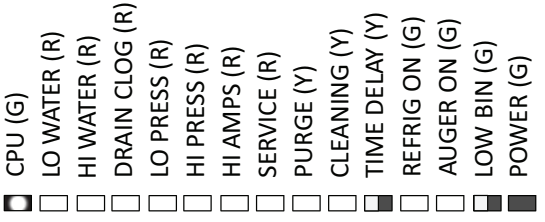
2. CPU light does not flash

- Defective control board



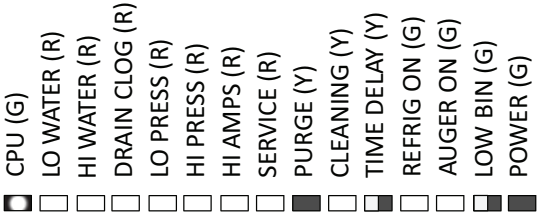
3. In time delay mode and bin is not full

- Shuttle is jammed or damaged
- Thermostat is out of position or defective



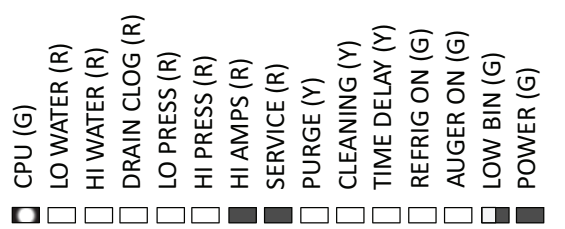
4. Locked in purge cycle, no ice

- Drain solenoid valve not opening
- Drain obstructed



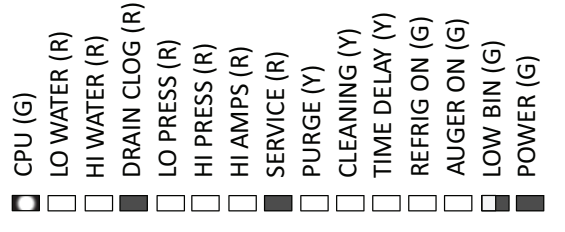
5. No ice, Hi Amps and Service lights on

- Evaporator dirty
- Gear motor not running or intermittent
- Does not shut off on full bin condition



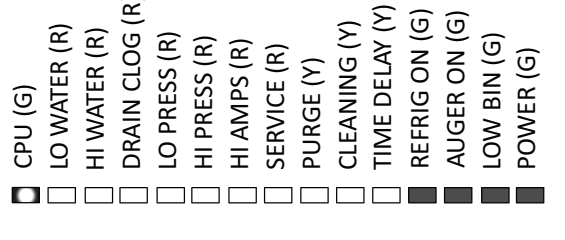
6. No ice, Drain Clog and Service lights on

- Drain obstructed
- Defective drain solenoid valve



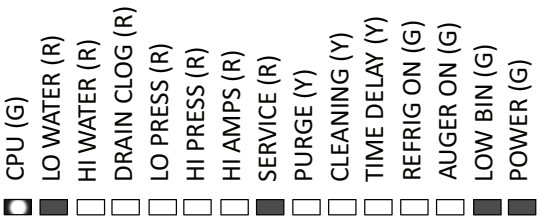
7. Ice is excessively wet

- Water inlet valve doesn't close 100%
- Water sensor failure



8. No ice, Lo Water light on

- No water
- Low water pressure
- Defective solenoid valve or control board relay



CONTROL BOARD ERRORS

The control board monitors the following:

Low water

Gear motor amperage

High pressure

Clogged drain

There are two different errors - Soft errors and hard errors.

- Soft errors can be reset by cycling power on/off.
- Hard errors can not be cleared by cycling power on/off and must be reset by pressing the control board reset button.

LO WATER - WATER LEVEL IS BELOW LOW WATER SENSOR FOR MORE THAN 120 SECONDS

Soft Error

The control board stops the ice machine, energizes the Lo Water & Service lights and leaves the water solenoid energized. When water contacts the low water probe the ice machine will resume ice making.

Hard Error

The water level sensor has 4 probes and the 2 longest probes reach to the bottom of the water reservoir. When no water is sensed on these probes within 60 seconds of power up (or the water level sensor is disconnected or shorted) the control board stops the ice machine and energizes the Lo Water light. The ice machine must be reset by pressing the control board reset button.

HI AMPS - GEAR MOTOR AMPERAGE EXCEEDS 3.8 AMPS

Soft Error

The control board stops the ice machine, energizes the Hi Amps & Service lights and initiates a time delay period. The ice machine will restart after the 60 minute delay. The ice machine continues to run if amperage remains below 3.8 amps for six hours.

Hard Error

Gear motor amperage exceeds 3.8 amps a second time, within six hours of the first failure. The ice machine must be reset by pressing the control board reset button.

HI PRESSURE

Soft Error

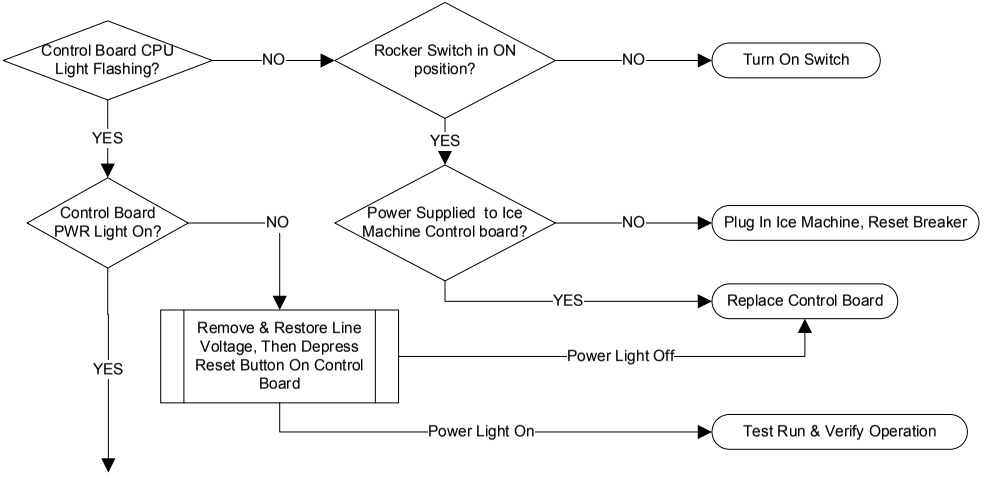
If the refrigeration pressure exceeds 425 psi (2930 kPa) the ice machine will turn off, energize the Hi Press light and initiate a 60 minute delay period. If the refrigeration pressure is below 295 psi (2034 kPa) at the end of the delay period the ice machine will restart.

DRAIN CLOG

Soft error

When the drain sensor (located in the drain pan behind the drain solenoid) detects water, the ice machine will energize the Drain Clog light and turn off until reset.

Electrical Flowchart – RN1000/RN1400 Air & Water



Yes
Time Delay Light OFF?
NO
YES
Time Delay Period Expired?
NO
Wait For Delay To Expire
YES
Low Bin Light On?
NO
Shuttle in up position?
NO
Light On Sensor Illuminated?
NO
Check Wiring, Repair Or Replace
YES
Depress Reset Button On Control Board Replace Control Board If Required
YES
Ice Holding Shuttle Open?
NO
Repair Or Replace Shuttle
YES
Clear Ice
YES

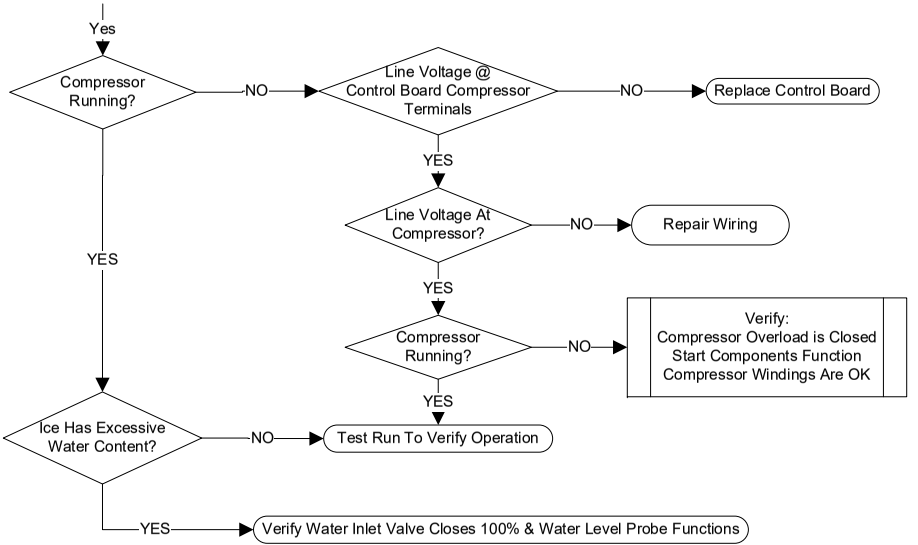
YES
Purge Light Off?
NO
Purge Rocker Switch In Off Position?
YES
Line Voltage At Drain Solenoid?
No
Remove & Restore Line Voltage, Then Depress Reset Button On Control Board
No Power @ Solenoid
Replace Control Board
YES
Power @ Solenoid
Water Drains From Evaporator?
NO
Clear Drain Or Replace Drain Solenoid
YES
Ice Machine Level?
NO
Level Ice Machine To Allow Complete Drainage
YES
Test Run To Verify Operation
NO
Move Switch To Off Position
YES

YES
Drain Clog Light Off?
NO
Water In Drain Trough?
YES
Clear Drain
NO
Clean and Dry Drain Sensor
Light On
Disconnect Sensor From Control Board
Light On
Replace Control Board
Light Off
Replace Sensor
Light Off
Test Run To Verify Operation
YES
High Pressure Light Off?
NO
Verify:
Clearances & Ambient Are OK
Filter & Condenser Are Clean
Condenser Fan Motor Functions
Replace High Pressure Cut Out
Water cooled Models:
Water Regulating Valve Functions
YES
Press Control Board Reset Button To Clear Error
YES

Yes
HI AMPS Light Off?
NO
YES
Circuit Breaker On Control Box Tripped?
YES
Reset Breaker - - Press Control Board Reset Button To Clear Error
NO
Line Voltage To Gear Motor?
NO
Press Control Board Reset Button To Clear Error
NO
Replace Control Board
YES
Gear Motor Runs?
NO
Check Wires & Connections Replace Gear Motor
YES
Clean Ice Machine - Install Water Filter - Increase Cleaning Frequency -Verify Shuttle Shuts Off Ice Machine – Test Run
YES

Yes
Low Water Light Off?
NO
YES
Sensor Wires Connected?
NO
Connect Sensor Wires
YES
Reservoir Full Of Water?
NO
Restore Water Supply
YES
Water is Supplied?
NO
YES
Clean and Dry Water Level Probes
Voltage @ Water Inlet Valve?
NO
YES
Replace Water Inlet Valve
YES
Voltage @ Water Inlet Valve?
NO
Replace Control Board
YES
Reservoir Full Of Water?
NO
YES
Press Control Board Reset Button To Clear Error

Yes
High Water Light Off?
NO
YES
Control Board Sending Line Voltage To Water Valve?
NO
Press Control Board Reset Button Replace Control Board
YES
Voltage @ Water Inlet Valve?
NO
Replace Water Inlet Valve
YES
Clean, Dry & Reinsert Water Level Probes
Water Flows
Replace Sensor – Control Board if Required
Water Flow Stops
Press Control Board Reset Button To Clear Error
Gear Motor Running?
NO
See Step HI AMPS LIGHT OFF
YES


Yes
Compressor Running?
NO
Line Voltage @ Control Board Compressor Terminals
NO
Replace Control Board
YES
Line Voltage At Compressor?
NO
Repair Wiring
YES
YES
Compressor Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES
Ice Has Excessive Water Content?
NO
Test Run To Verify Operation
YES
Verify Water Inlet Valve Closes 100% & Water Level Probe Functions

RN1000C/RN1200C Troubleshooting

NOTE: Refer to "RN1000C/RN1200C" on page 39 for normal sequence of operation

INDICATOR LIGHT OPERATION

The lights on the control board can be used as quick failure mode indicators. If the failure mode isn't obvious from the light indicators, use the flowchart to systematically eliminate issues.

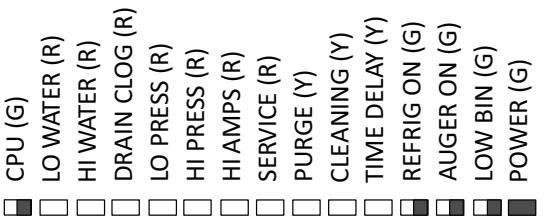
NOTE: Each relay on the control board has a light adjacent to the relay to indicate the relay coil has power.

Indicator light legend



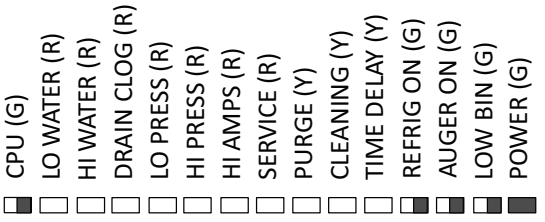
1. Normal light operation, No Ice

- Defective compressor or start component
- Defective contactor
- Defective control board relay



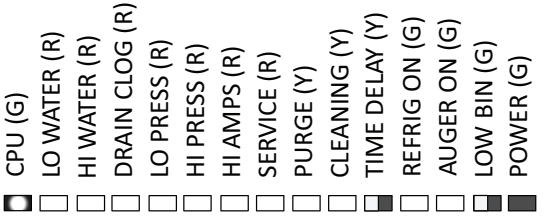
2. CPU light does not flash

- Defective control board



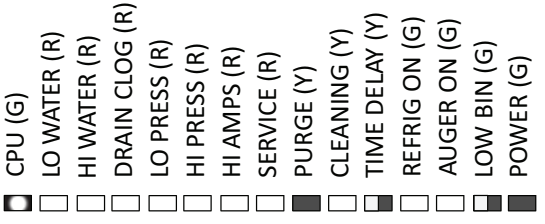
3. In time delay mode and bin is not full

- Shuttle is jammed or damaged
- Thermostat is out of position or defective



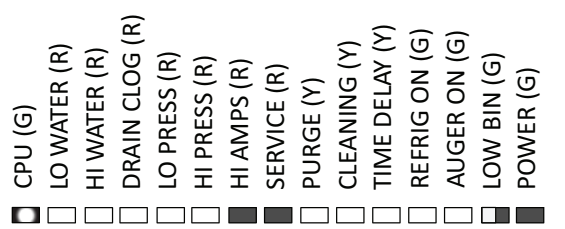
4. Locked in purge cycle, no ice

- Drain solenoid valve not opening
- Drain obstructed



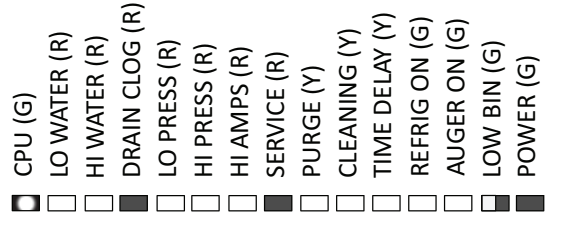
5. No ice, Hi Amps and Service lights on

- Evaporator dirty
- Gear motor not running or intermittent
- Does not shut off on full bin condition



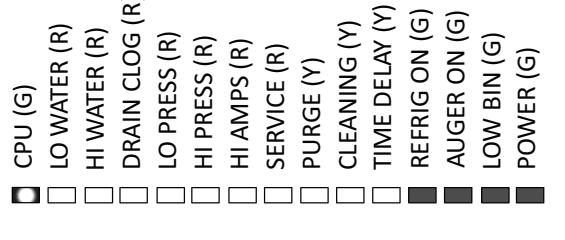
6. No ice, Drain Clog and Service lights on

- Drain obstructed
- Defective drain solenoid valve



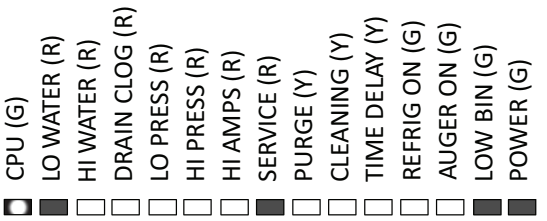
7. Ice is excessively wet

- Water inlet valve doesn't close 100%
- Water sensor failure



8. No ice, Lo Water light on

- No water
- Low water pressure
- Defective solenoid valve or control board relay



CONTROL BOARD ERRORS

The control board monitors the following:

Low water

Gear motor amperage

High pressure

Clogged drain

There are two different errors - Soft errors and hard errors.

- Soft errors can be reset by cycling power on/off.
- Hard errors can not be cleared by cycling power on/off and must be reset by pressing the control board reset button.

LO WATER - WATER LEVEL IS BELOW LOW WATER SENSOR FOR MORE THAN 120 SECONDS

Soft Error

The control board stops the ice machine, energizes the Lo Water & Service lights and leaves the water solenoid energized. When water contacts the low water probe the ice machine will resume ice making.

Hard Error

The water level sensor has 4 probes and the 2 longest probes reach to the bottom of the water reservoir. When no water is sensed on these probes within 60 seconds of power up (or the water level sensor is disconnected or shorted) the control board stops the ice machine and energizes the Lo Water light. The ice machine must be reset by pressing the control board reset button.

HI AMPS - GEAR MOTOR AMPERAGE EXCEEDS 3.8 AMPS

Soft Error

The control board stops the ice machine, energizes the Hi Amps & Service lights and initiates a time delay period. The ice machine will restart after the 60 minute delay. The ice machine continues to run if amperage remains below 3.8 amps for six hours.

Hard Error

Gear motor amperage exceeds 3.8 amps a second time, within six hours of the first failure. The ice machine must be reset by pressing the control board reset button.

HI PRESSURE

Soft Error

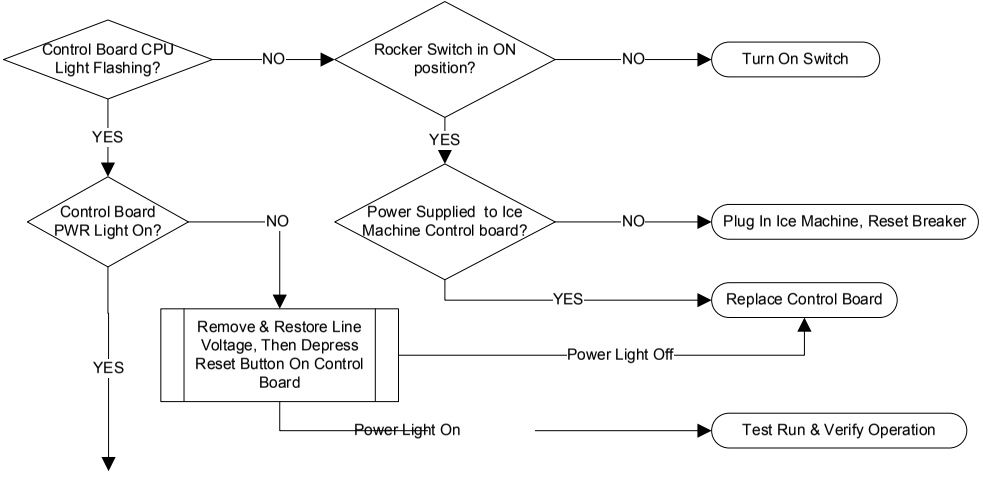
If the refrigeration pressure exceeds 425 psi (2930 kPa) the ice machine will turn off, energize the Hi Press light and initiate a 60 minute delay period. If the refrigeration pressure is below 295 psi (2034 kPa) at the end of the delay period the ice machine will restart.

DRAIN CLOG

Soft error

When the drain sensor (located in the drain pan behind the drain solenoid) detects water, the ice machine will energize the Drain Clog light and turn off until reset.

Electrical Flowchart – RN1000C/RN1200C QuietQube Remote



Yes
Time Delay Light OFF?
NO
YES
Time Delay Period Expired?
NO
Wait For Delay To Expire
YES
Low Bin Light On?
NO
Shuttle in up position?
NO
Light On Sensor Illuminated?
NO
Check Wiring, Repair Or Replace
YES
Depress Reset Button On Control Board Replace Control Board If Required
YES
Ice Holding Shuttle Open?
NO
Repair Or Replace Shuttle
YES
Clear Ice
YES

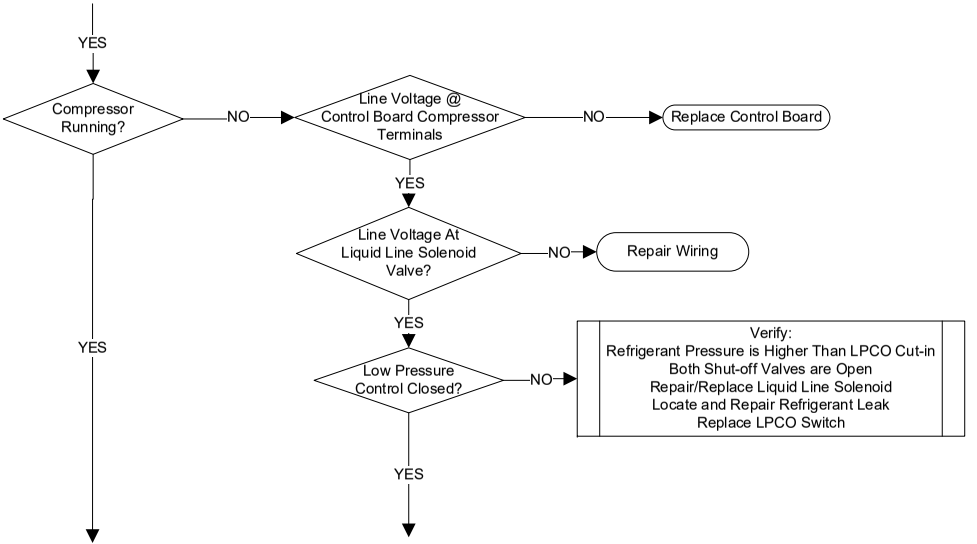
YES
Purge Light Off?
NO
YES
Purge Rocker Switch In Off Position?
NO
YES
Move Switch To Off Position
Line Voltage At Drain Solenoid?
No
YES
Remove & Restore Line Voltage, Then Depress Reset Button On Control Board
No Power @ Solenoid
Replace Control Board
Power @ Solenoid
Water Drains From Evaporator?
NO
Clear Drain Or Replace Drain Solenoid
YES
Ice Machine Level?
NO
Level Ice Machine To Allow Complete Drainage
YES
Test Run To Verify Operation

YES
Drain Clog Light Off?
NO
YES
Water In Drain Trough?
YES
Clear Drain
NO
Clean and Dry Drain Sensor
Light On
Disconnect Sensor From Control Board
Light On
Replace Control Board
Light Off
Replace Sensor
Light Off
Test Run To Verify Operation
YES
High Pressure Light Off?
NO
Verify:
Clearances & Ambient Are OK
Condenser Is Clean
Condenser Fan Motor Functions
Replace High Pressure Cut Out
YES
Press Control Board Reset Button To Clear Error
YES

YES
HI AMPS Light Off?
NO
Circuit Breaker On Control Box Tripped?
YES
Reset Breaker - Press Control Board Reset Button To Clear Error
NO
Line Voltage To Gear Motor?
NO
Press Control Board Reset Button To Clear Error
NO
Replace Control Board
YES
Gear Motor Runs?
NO
Check Wires & Connections Replace Gear Motor
YES
Clean Ice Machine - Install Water Filter - Increase Cleaning Frequency -Verify Shuttle Shuts Off Ice Machine – Test Run
YES
YES

YES
Low Water Light Off?
NO
Sensor Wires Connected?
NO
Connect Sensor Wires
YES
Reservoir Full Of Water?
NO
Water is Supplied?
NO
Restore Water Supply
YES
YES
Clean and Dry Water Level Probes
Voltage @ Water Inlet Valve?
NO
YES
Replace Water Inlet Valve
YES
Voltage @ Water Inlet Valve?
NO
Replace Control Board
YES
Reservoir Full Of Water?
NO
YES
Press Control Board Reset Button To Clear Error
YES

YES
High Water Light Off?
NO
Control Board Sending Line Voltage To Water Valve?
NO
Press Control Board Reset Button Replace Control Board
YES
Voltage @ Water Inlet Valve?
NO
Replace Water Inlet Valve
YES
Clean, Dry & Reinsert Water Level Probes
Water Flows
Replace Sensor – Control Board if Required
Water Flow Stops
Press Control Board Reset Button To Clear Error
YES
Gear Motor Running?
NO
See Step HI AMPS LIGHT OFF
YES


YES
Compressor Running?
NO
Line Voltage @ Control Board Compressor Terminals
NO
Replace Control Board
YES
Line Voltage At Liquid Line Solenoid Valve?
NO
Repair Wiring
YES
YES
Low Pressure Control Closed?
NO
Verify:
Refrigerant Pressure is Higher Than LPCO Cut-in
Both Shut-off Valves are Open
Repair/Replace Liquid Line Solenoid
Locate and Repair Refrigerant Leak
Replace LPCO Switch
YES

YES
Contactor Coil Has Line Voltage?
NO
Repair Wiring
YES
Contactor Closed?
NO
Replace Contactor
YES
Line Voltage At Compressor?
NO
Repair Wiring
YES
Compressor Running?
NO
Verify:
Compressor Overload is Closed
Start Components Function
Compressor Windings Are OK
YES
Test Run To Verify Operation
YES

YES
Ice Has Excessive Water Content?
NO
Test Run To Verify Operation
YES
Verify Water Inlet Valve Closes 100% & Water Level Probe Functions

Refrigeration Troubleshooting

CAPILLARY TUBE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures				
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensible in System	Restricted Capillary Tube
Discharge Pressure	Low	High	High	Low
Suction Pressure	Low	High	High	Low
Evaporator Inlet Temperature	Normal	Low	High	Low
Evaporator Outlet Temperature	High	Normal	High	Low
Compressor Discharge Line Temperature Normal Range = > 165° @ 70° - 210° @ 110° > 74°C @ 21°C - 99°C @ 43°C)	High Increases with run time	Normal	High Increases with run time	High Increases with run time

THERMOSTATIC EXPANSION VALVE MODELS

If the gear motor and/or compressor are not energized refer to Electrical Troubleshooting Refer to Operational Pressure Charts for normal pressures and temperatures					
	Low on Refrigerant	Overcharge of Refrigerant	Non Condensible In System	Liquid Line Restriction, Suction Line Restriction, Or Expansion Valve Starving	Flooding Expansion Valve or Loose Sensing Bulb (when used)
Discharge Pressure	Low	High	High	Low	High
Suction Pressure	Low	High	High	Low	High
Evaporator Inlet Temperature	Normal	Normal or Low	High	Normal	Normal or High
Evaporator Outlet Temperature	High	Normal	High	High > 12° Differential between Inlet and Outlet	< 10° Differential between Inlet and Outlet
Discharge Line Temperature	High	Normal	High Increases With Run Time	High Increases With Run Time	Low Decreases With Run Time

Component Specifications

BIN THERMOSTAT

Model	Setting	Cut-Out	Cut-In
RF Models RF0244 / RF0266 RF0385 / RF0388 RF0399 / RF1200 RF2300 **RFS Models** RFS0244 RF0644 / RFS1200 **RN Models** RNS0308 / RNS0385	5	37°F ±1 3°C ±.1	43°F ±1 6°C ±.1
RF Models RF0300 / RF0600 **RFS Models** RFS0300 / RFS0650	4	36°F ±1 2.2°C ±.1	42°F ±1 5.6°C ±.1

LOW TEMPERATURE THERMOSTAT

(Evaporator safety thermostat)

Model	Setting	Cut-Out	Cut-In
RF Models RF0244 / RF0266 RF1200 / RF2300 **RFS Models** RFS0244 / RFS1200 RFS2300	5	-9°F ±1 -23°C ±.1	10°F ±1 -12°C ±.1
RF Models RF0300 / RF0388 RF0385 / RF0399 RF0644 / RF650 **RFS Models** RFS0300 **RNS Models** RNS0385	7	-11°F ±.1 -24°C ±.1	7 °F±.1 -14°C ±.1

HIGH PRESSURE CUTOUT (HPCO) CONTROL

Model	Cut-Out	Cut-In
RF Models RNS0308/RF0644 **RFS Models** RFS0650/RFS1200 **RNS Models** RNS0300 / RNS0600 RNS1000 000008557	325 psig ±10 (2250 kPa ±69) 22.5 bar ±.69	200 psig ±10 (1379 kPa ±69) 13.79 bar ±.69 Auto Reset
RF Models RF0650/ RF1200/RF2300 000005761	435 psig ±10 (3000 kPa ±69) 30 bar ±.69	Manual Reset
RN0400 000007111	425 psig ±10 (2930 kPa ±69) 29 bar ±.69	287 psig ±10 (1979 kPa ±69) 19.79bar ±.69 Auto Reset
RN1000/RN1400 000007268	450 psig ±10 (3100 kPa ±69) 31 bar ±.69	295 psig ±10 (2034 kPa ±69) 20 bar ±.69 Auto Reset
RF Models RF1200C/RCU1075 RF2300C/RCU2375 **RFS Models** RFS1200C/RCU1075 RFS2300C/RCU2375 **RN Models** RN1000C/RCU1075 RN1200C/RCU1275 2001243	450 psig ±10 (3100 kPa ±69) 31 bar ±.69	300 psig ±10 (2068 kPa ±69) 20 bar ±20.68 Auto Reset

ROTATION SENSOR

RF0644/RF0650/RF1200/RF2300
RFS0650/RFS1200/RFS2300
RNS0600/RNS1000/RNS1078

Light	Definition
Yellow Blinking	Time Delay Period
Yellow Solid	Normal Operation Sensing
Red Blinking 2 Flashes Per Second	Time Delay Period - First 1 To 7 Faults
Red Solid	Lockout - 8 Consecutive Faults Due To A Speed Fault Remove/Restore Power To Reset
Red Blinking Slowly	Lockout - 8 Consecutive Faults Due To A Short Circuit

- Normal auger rotation is 9-10 RPM.
- Minimum auger rotation is 4 RPM.
- Maximum auger rotation is 13 RPM
- Two pulses from the rotation sensor equals 1 RPM.

Verify all electrical connections are secure and free of corrosion whenever rotation sensor lockouts exist.

LOW PRESSURE CUTOUT (LPCO) CONTROL

Model	Cut-Out	Cut-In
RF Models RF0644 / R0F650 RF1200 **RFS Models** RFS1200 RFS2300C-RCU2375 **RNS Models** RNS0300 / RNS0600 RNS1000	7 psig ±2 (.5 bar ±.2)	36 psig ±2 (2.5 bar ±.2)
RF2300	12 psig ±2 (.8 bar ±.2)	Manual Reset
RF Models RF1200C-RCU1075 **RFS Models** RFS1200C-RCU1075 RF2300C-RCU2375 RFS2300C-RCU2375 **RN Models** RN1000C-RCU1075 **RNS Models** RNS1078-RCU1098 RN1200C-RCU1275	12 psig ±3 (.8 bar ±.2)	35 psig ±5 (2.4 bar ±.4)

FAN CYCLE CONTROL

Model	Cut-Out (Open)	Cut-In (Close)
RF Models RF0266 / RF0300 RF0385 / RF0388 RF0399 / RF0644 RF0650 / RF1200 RF2300 **RFS Models** RFS0300 / RFS0650 **RNS Models** RNS0244 / RNS0300 RNS0385 / RNS0600	200 ±5 (15.17 bar ±.34)	250 ±5 (17.23 bar ±.34)
RF Models RF0244 / RF0300 RF0385 / RF0388 RF0399 / RF0644 RF0650 / RF1200 RF2300 **RFS Models** RFS0650 **RNS Models** RNS0244 / RNS0300 RNS0385 / RNS1000	225 ±5 (15.51 bar ±.34)	275 ±5 (18.96 bar ±.34)
RFS1200	215 ±5 (14.82 bar ±.34)	232 ±5 (16 bar ±.34)

TOTAL SYSTEM REFRIGERANT CHARGE

This information is for reference only. Model/Serial plate information overrides information listed in this table.

Model	Refrigerant Charge
RF Flake Models	
RF0244A	7.5 oz / 210 g
RF0266A	7.5 oz / 210 g
RF0300A	11.25 oz / 320 g
RF0385A	11.25 oz / 320 g
RF0388A	11.25 oz / 320 g
RF0399A	11.25 oz / 320 g
RF0644A	18.3 oz / 519 g
RF0650A	19.5 oz / 550 g
RF0650W	15.5 oz / 439 g
RF1200A	24.75 oz / 700 g
RF1200W	16.25 oz / 460 g
RF1200C	156 oz / 4.42 kg
RF2300A	63.5 oz / 1800 g
RF2300W	38.75 oz / 1100 g
RF2300C	240 oz / 6.08 kg
RFS Flake Models	
RFS0300A	11.25 oz / 320 g
RFS0650A	19.5 oz / 550 g
RFS0650W	15.5 oz / 439 g
RFS1200A	24.75 oz / 700 g
RFS1200W	16.25 oz / 460 g
RFS1200C	156 oz / 4.42 kg
RFS2300A	63.5 oz / 1800 g
RFS2300W	38.75 oz / 1100 g
RFS2300C	240 oz / 6.08 kg

RN Nugget Models	
RN0400	19 oz / 539 g
RN1000A	24 oz / 680 g
RN1000W	15 oz / 426 g
RN1000C	156 oz / 4.42 kg
RN1200C	156 oz / 4.42 kg
RN1400A	34 oz / 652 g
RN1400W	21 oz / 426 g
RNS Nugget Models	
RNS0244	7.5 oz / 210 g
RNS0308	15.5 oz / 440 g
RNS0385A	11.25 oz / 320 g
RNS0608A	18.34 oz / 520 g
RNS0609W	16.9 oz / 479 g
RNS1000A	23.3 oz / 660 g
RNS1009W	18.0 oz / 510 g
RNS1078C	160.0 oz / 4.54 kg

NOTE: All ice machines are charged using R-404A refrigerant.

Model	Additional refrigerant required for 51' to 100' (15.5 to 30.5 m) line sets
RF1200C	0 lbs 0 kgs
RFS1200C	0 lbs 0 kgs
RF2300C	0 lbs 0 kgs
RN1000C	2 lbs 907g
RN1200C	2 lbs 907g
RNS1078C	2 lbs 907g

FILTER-DRIERS

The size of the filter-drier is important. The refrigerant charge is critical. Using an improperly sized filter-drier will cause the ice machine to be improperly charged with refrigerant.

Important

Driers are covered as a warranty part. The drier must be replaced any time the system is opened for repairs.

SUCTION CLEANUP FILTER-DRIER

Contaminated systems must have a suction line filter-drier installed to remove contaminations. An access valve must be installed on the inlet side of the suction filter to allow pressure drop readings to be obtained.

Suction Line Clean-Up Filter		
Model	**Drier Size**	**End Connection Size**
All Models	UK-165S	5/8 in.

Charts

Total System Refrigerant Charge

Important

This information is for reference only. Refer to the ice machine serial number tag to verify the system charge. Serial plate information overrides information listed on this page.

Ice Production & Refrigerant Pressure

These charts are used as guidelines to verify correct ice machine operation.

Accurate collection of data is essential to obtain the correct diagnosis.

- Zero out manifold gauge set before obtaining pressure readings to avoid misdiagnosis.
- Discharge and suction pressure are highest at the beginning of the cycle. Allow system to stabilize for a minimum of 10 minutes, then verify the pressures are within the range indicated.
- Water temperature will affect suction and discharge pressure - 50°F (10°C) water temperature will result in pressures on the lower end of the ranges specified. 90°F (32°C) water temperatures will result in pressures on the upper end of the range specified.

RF Flake Models

RF0244A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	182 lbs 82 kgs
90°F/70°F 32°C/21°C	151 lbs 68 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RF0266A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	1821lbs 82 kgs
90°F/70°F 32°C/21°C	151 lbs 68 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RF0300A

SELF CONTAINED AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF0300	70°F/50°F 21°C/10°C	311 lbs 141 kgs
	90°F/70°F 32°C/21°C	259 lbs 117 kgs
RFS0300	70°F/50°F 21°C/10°C	384 lbs 174 kgs
	90°F/70°F 32°C/21°C	286 lbs 130 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-275 1792-1896	28-31 193-214
90°F PSIG 32°C kPa	260-280 1792-1930	30-36 207-248
110°F PSIG 43°C kPa	325-350 2240-2413	32-38 221-262

RF0385A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	329 lbs 149 kgs
90°F/70°F 32°C/21°C	273 lbs 124 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	243-270 1675-1862	31-36 214-248
90°F PSIG 32°C kPa	273-315 1882-2172	34-39 234-269
110°F PSIG 43°C kPa	348-380 2399-2620	38-43 262-296

RF0388A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	332 lbs 151 kgs
90°F/70°F 32°C/21°C	270 lbs 122 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	235-270 1620-1862	29-32 200-221
90°F PSIG 32°C kPa	255-280 1758-1930	29-35 200-241
110°F PSIG 43°C kPa	320-340 2706-2344	31-38 214-262

RF0399A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	332 lbs 151 kgs
90°F/70°F 32°C/21°C	270 lbs 122 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	260-280 1793-1930	32-34 221-234
90°F PSIG 32°C kPa	270-290 1862-2000	29-35 200-241
110°F PSIG 43°C kPa	340-360 2344-2482	31-38 214-262

RF0644A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	688 lbs 312 kgs
90°F/70°F 32°C/21°C	510 lbs 231 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-265 1655-1827	33-35 228-241
90°F PSIG 32°C kPa	280-300 1930-2068	34-40 235-276
110°F PSIG 43°C kPa	340-370 2344-2551	40-46 275-318

RF0650A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF0650A	70°F/50°F 21°C/10°C	671 lbs 305 kgs
	90°F/70°F 32°C/21°C	545 lbs 248 kgs
RFS0650A	70°F/50°F 21°C/10°C	747 lbs 339 kgs
	90°F/70°F 32°C/21°C	540 lbs 245kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-265 1655-1827	33-35 228-241
90°F PSIG 32°C kPa	280-300 1930-2068	34-40 235-276
110°F PSIG 43°C kPa	340-370 2344-2551	40-46 275-318

RF0650W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF0650W	70°F/50°F 21°C/10°C	716 lbs 325 kgs
	90°F/70°F 32°C/21°C	597 lbs 271 kgs
RFS0650W	70°F/50°F 21°C/10°C	726 lbs 329 kgs
	90°F/70°F 32°C/21°C	586 lbs 266 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-275 1827-1896	33-37 228-255
90°F PSIG 32°C kPa	260-280 1827-1896	34-38 234-262
110°F PSIG 43°C kPa	265-285 1827-1896	29-33 200-228
Water regulating valve set to maintain 255 psig - 1758 kPa		

Condenser Water Consumption @ 90°F/70°F 32°C/21°C		
RF0650W	80	Gallons/100 lbs. of Ice
	303	Liters/45 kgs. of Ice
RFS0650W	70	Gallons/100 lbs. of Ice
	265	Liters/45 kgs. of Ice

RF1200A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF1200A	70°F/50°F 21°C/10°C	1186 lbs 538 kgs
	90°F/70°F 32°C/21°C	864 lbs 392 kgs
RFS1200A	70°F/50°F 21°C/10°C	1202 lbs 545 kgs
	90°F/70°F 32°C/21°C	874 lbs 396 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-280 1755-1930	32-34 220-234
90°F PSIG 32°C kPa	325-350 2240-2413	36-42 248-290
110°F PSIG 43°C kPa	400-425 2758-2930	45-51 310-352

RF1200W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF1200W	70°F/50°F 21°C/10°C	1204 lbs 546 kgs
	90°F/70°F 32°C/21°C	1004 lbs 455 kgs
RFS1200W	70°F/50°F 21°C/10°C	1339 lbs 607 kgs
	90°F/70°F 32°C/21°C	1128 lbs 512 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	245-255 1689-1758	29-31 200-214
90°F PSIG 32°C kPa	270-280 1862-1930	29-35 200-241
110°F PSIG 43°C kPa	275-290 1896-2000	30-36 207-248

Condenser Water Consumption @ 90°F/70°F 32°C/21°C		
RF1200W	103	Gallons/100 lbs. of Ice
	390	Liters/45 kgs. of Ice
RFS1200W	118	Gallons/100 lbs. of Ice
	447	Liters/45 kgs. of Ice

RF1278C WITH RCU1075

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1413 lbs 641 kgs
70°F/50°F 21°C/10°C	1092 lbs 495 kgs
90°F/70°F 32°C/21°C	958 lbs 435 kgs
120°F/70°F 49°C/21°C	603 lbs 274 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Entering Condenser °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	185-200 1276-1379	23-28 159-193
70°F PSIG 21°C kPa	225-255 1551-1758	30-35 207-241
80°F PSIG 27°C kPa	230-280 1586-1931	31-36 214-248
90°F PSIG 32°C kPa	243-305 1675-2103	33-38 228-262
120°F PSIG 49°C kPa	355-400 2448-2758	38-43 262-296

RF2300A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2460 lbs 1115 kgs
90°F/70°F 32°C/21°C	1819 lbs 825 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	230-250 1586-1724	29-32 200-228
90°F PSIG 32°C kPa	300-330 2068-2275	34-38 234-262
110°F PSIG 43°C kPa	380-410 2620-2827	37-42 255-290

RF2300W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2608 lbs 1183 kgs
90°F/70°F 32°C/21°C	2201 lbs 998 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-265 1758-1827	29-31 200-214
90°F PSIG 32°C kPa	260-270 1793-1862	30-35 207-241
110°F PSIG 43°C kPa	265-280 1827-1931	32-36 221-248
Water regulating valve set to maintain 260 psi (1793 kPa)		

RF2378C WITH RCU2375

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	2403 lbs 1090 kgs
70°F/50°F 21°C/10°C	2063 lbs 936 kgs
90°F/70°F 32°C/21°C	1702 lbs 772 kgs
120°F/70°F 49°C/21°C	1073 lbs 487 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 16°C kPa	175-200 1207-1379	26-31 176-214
70°F PSIG 21°C kPa	220-250 1517-1724	31-36 214-248
80°F PSIG 27°C kPa	225-275 1551-1896	32-37 221-255
90°F PSIG 32°C kPa	250-310 1724-2137	33-38 228-262
120°F PSIG 49°C kPa	365-410 2517-2827	38-43 262-296

RFS Flake Models

RFS0244A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	182 lbs 82 kgs
90°F/70°F 32°C/21°C	151 lbs 68 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RFS0300A

SELF CONTAINED AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF0300	70°F/50°F 21°C/10°C	311 lbs 141 kgs
	90°F/70°F 32°C/21°C	259 lbs 117 kgs
RFS0300	70°F/50°F 21°C/10°C	384 lbs 174 kgs
	90°F/70°F 32°C/21°C	286 lbs 130 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-275 1792-1896	28-31 193-214
90°F PSIG 32°C kPa	260-280 1792-1930	30-36 207-248
110°F PSIG 43°C kPa	325-350 2240-2413	32-38 221-262

RFS0650A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RFS0650A	70°F/50°F 21°C/10°C	671 lbs 305 kgs
	90°F/70°F 32°C/21°C	545 lbs 248 kgs
RFS0650A	70°F/50°F 21°C/10°C	747 lbs 339 kgs
	90°F/70°F 32°C/21°C	540 lbs 245kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	240-265 1655-1827	33-35 228-241
90°F PSIG 32°C kPa	280-300 1930-2068	34-40 235-276
110°F PSIG 43°C kPa	340-370 2344-2551	40-46 275-318

RFS0650W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RFS0650W	70°F/50°F	740 lbs
	21°C/10°C	335 kgs
RFS0650W	90°F/70°F	596 lbs
	32°C/21°C	270 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	270-280 1724-1793	32-35 221-241
90°F PSIG 32°C kPa	270-285 1758-1827	33-36 228-248
110°F PSIG 43°C kPa	275-290 1827-1896	35-37 241-255
Water regulating valve set to 270 psi (1862 kPa)		

RFS1200A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF1200A	70°F/50°F 21°C/10°C	1186 lbs 538 kgs
	90°F/70°F 32°C/21°C	864 lbs 392 kgs
RFS1200A	70°F/50°F 21°C/10°C	1202 lbs 545 kgs
	90°F/70°F 32°C/21°C	874 lbs 396 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-280 1755-1930	32-34 220-234
90°F PSIG 32°C kPa	325-350 2240-2413	36-42 248-290
110°F PSIG 43°C kPa	400-425 2758-2930	45-51 310-352

RFS1200W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION		
Model	**Air Temperature Water Temperature**	**24 hour Ice Production**
RF1200W	70°F/50°F 21°C/10°C	1204 lbs 546 kgs
	90°F/70°F 32°C/21°C	1004 lbs 455 kgs
RFS1200W	70°F/50°F 21°C/10°C	1339 lbs 607 kgs
	90°F/70°F 32°C/21°C	1128 lbs 512 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-265 1758-1827	29-31 200-214
90°F PSIG 32°C kPa	260-275 1793-1896	29-35 200-241
110°F PSIG 43°C kPa	270-285 1862-1965	30-36 207-248
Water regulating valve set to maintain 260 psi (1793 kPa)		

Condenser Water Consumption @ 90°F/70°F 32°C/21°C		
RF1200W	103	Gallons/100 lbs. of Ice
	390	Liters/45 kgs. of Ice
RFS1200W	118	Gallons/100 lbs. of Ice
	447	Liters/45 kgs. of Ice

RFS1278C WITH RCU1075

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1413 lbs 641 kgs
70°F/50°F 21°C/10°C	1092 lbs 495 kgs
90°F/70°F 32°C/21°C	958 lbs 435 kgs
120°F/70°F 49°C/21°C	603 lbs 274 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Entering Condenser °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	185-200 1276-1379	23-28 159-193
70°F PSIG 21°C kPa	225-255 1551-1758	30-35 207-241
80°F PSIG 27°C kPa	230-280 1586-1931	31-36 214-248
90°F PSIG 32°C kPa	243-305 1675-2103	33-38 228-262
120°F PSIG 49°C kPa	355-400 2448-2758	38-43 262-296

RFS2300A

AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2301 lbs 1044 kgs
90°F/70°F 32°C/21°C	1665 lbs 755 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	290-310 1999-2137	35-38 241-262
90°F PSIG 32°C kPa	350-380 2413-2620	38-43 262-296
110°F PSIG 43°C kPa	410-430 2827-2965	43-49 296-338

RFS2300W

WATER-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	2608 lbs 1183 kgs
90°F/70°F 32°C/21°C	2201 lbs 998 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	255-265 1758-1827	28-30 193-207
90°F PSIG 32°C kPa	260-270 1793-1862	30-33 207-228
110°F PSIG 43°C kPa	265-280 1827-1931	32-36 221-248
Water regulating valve set to maintain 260 psig - 1793 kPa		

RFS2378C WITH RCU2375

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	2403 lbs 1090 kgs
70°F/50°F 21°C/10°C	2063 lbs 936 kgs
90°F/70°F 32°C/21°C	1702 lbs 772 kgs
120°F/70°F 49°C/21°C	1073 lbs 487 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 16°C kPa	175-200 1207-1379	26-31 176-214
70°F PSIG 21°C kPa	220-250 1517-1724	31-36 214-248
80°F PSIG 27°C kPa	225-275 1551-1896	32-37 221-255
90°F PSIG 32°C kPa	250-310 1724-2137	33-38 228-262
120°F PSIG 49°C kPa	365-410 2517-2827	38-43 262-296

RN Nugget Models

RN0408A

AIR-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	385 lbs 175 kgs
90°F/70°F 32°C/21°C	294 lbs 133 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	170-200 1172-1379	23-25 159-172
70°F PSIG 21°C kPa	240-270 1655-1862	25-30 172-207
80°F PSIG 27°C kPa	245-275 1689-1896	30-35 207-241
90°F PSIG 32°C kPa	250-350 1724-2413	32-38 214-262
100°F PSIG 38°C kPa	235-375 1620-2586	36-42 248-290

RN1008A

AIR-COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG					
Air Temperature Entering Condenser °F/°C	Water Temperature °F/°C				
	50/10	60/16	70/21	80/27	90/32
60°F 16°C	1135 515	1070 486	1015 461	967 439	924 420
70°F 21°C	1100 499	1000 454	938 426	902 410	859 390
80°F 27°C	962 437	916 416	871 395	826 375	782 355
90°F 32°C	828 376	816 371	794 361	755 343	698 317
100°F 38°C	786 357	728 331	686 312	654 297	610 277

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	Freeze Cycle	
	Discharge Pressure	Suction Pressure
60°F PSIG 16°C kPa	220-240 1517-1655	33-38 228-262
70°F PSIG 21°C kPa	225-245 1551-1689	37-42 255-290
80°F PSIG 27°C kPa	235-250 1620-1724	38-43 262-296
90°F PSIG 32°C kPa	235-250 1620-1724	39-44 269-303
100°F PSIG 38°C kPa	255-280 1758-1931	41-46 283-317

RN1009W

WATER-COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG					
Air Temperature Around Ice Machine °F/°C	Water Temperature °F/°C				
	50/10	60/16	70/21	80/27	90/32
60°F 16°C	1071 486	1025 465	971 441	912 414	849 386
70°F 21°C	1035 470	979 444	932 423	888 403	842 382
80°F 27°C	975 443	912 414	870 395	839 381	814 370
90°F 32°C	885 402	826 375	786 357	759 345	745 338
100°F 38°C	762 346	723 328	683 310	642 392	603 274

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	Freeze Cycle	
	Discharge Pressure	Suction Pressure
60°F PSIG 16°C kPa	220-240 1517-1655	33-38 228-262
70°F PSIG 21°C kPa	225-245 1551-1689	37-42 255-290
80°F PSIG 27°C kPa	235-250 1620-1724	38-43 262-296
90°F PSIG 32°C kPa	235-250 1620-1724	39-44 269-303
100°F PSIG 38°C kPa	255-280 1758-1931	41-46 283-317

RN1408A

AIR-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
50°F/50°F 10°C/10°C	1528 lbs 693 kgs
70°F/50°F 21°C/10°C	1490 lbs 676 kgs
90°F/70°F 32°C/21°C	1318 lbs 598 kgs
110°F/70°F 43°C/21°C	1019 lbs 462 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	224-235 1544-1620	24-29 165-200
70°F PSIG 21°C kPa	238-275 1641-1896	26-31 179-214
80°F PSIG 27°C kPa	245-290 1689-1999	28-33 193-228
90°F PSIG 32°C kPa	316-370 2179-2551	34-39 234-269
100°F PSIG 38°C kPa	382-430 2634-2965	41-46 283-317

RN1409W

WATER-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
50°F/50°F 10°C/10°C	1581 lbs 717 kgs
70°F/50°F 21°C/10°C	1490 lbs 676 kgs
90°F/70°F 32°C/21°C	1318 lbs 598 kgs
110°F/70°F 43°C/21°C	1100 lbs 499 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	220-230 1516-1586	24-29 165-200
70°F PSIG 21°C kPa	220-230 1517-1586	25-30 172-207
80°F PSIG 27°C kPa	225-235 1551-1620	26-31 179-214
90°F PSIG 32°C kPa	225-235 1551-1620	27-32 186-221
100°F PSIG 38°C kPa	265-275 1827-1896	33-38 228-262

RN1078C WITH RCU1075

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1105 lbs 501kgs
70°F/50°F 21°C/10°C	880 lbs 399kgs
90°F/70°F 32°C/21°C	713 lbs 323kgs
120°F/70°F 49°C/21°C	490 lbs 222kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	240-250 1655-1724	33-35 227-241
70°F PSIG 21°C kPa	245-265 1689-1827	35-38 241-262
80°F PSIG 27°C kPa	245-270 1689-1862	36-39 248-269
90°F PSIG 32°C kPa	250-270 1724-1862	37-40 255-276
120°F PSIG 49°C kPa	360-400 2482-2758	45-49 310-338

RN1278C WITH RCU1275

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1201 lbs 545kgs
70°F/50°F 21°C/10°C	1100 lbs 499kgs
90°F/70°F 32°C/21°C	962 lbs 436kgs
120°F/70°F 49°C/21°C	761 lbs 345 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
50°F PSIG 10°C kPa	190-200 1310-1379	21-26 145-179
70°F PSIG 21°C kPa	227-265 1565-1827	25-30 172-207
80°F PSIG 27°C kPa	230-260 1586-1793	26-31 179-214
90°F PSIG 32°C kPa	238-280 1641-1931	27-32 186-221
120°F PSIG 49°C kPa	356-400 2455-2758	34-39 234-269

RNS Nugget Models

RNS0244A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	155 lbs 70 kgs
90°F/70°F 32°C/21°C	105 lbs 48 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-250 1517-1724	38-40 262-276
90°F PSIG 32°C kPa	300-320 2068-2206	45-51 310-352
110°F PSIG 43°C kPa	360-390 2482-2689	49-55 338-379

RNS0308A

SELF CONTAINED AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	315 lbs 143 kgs
90°F/70°F 32°C/21°C	251 lbs 114 kgs
* Indicates Preliminary Data	

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	260-275 1792-1896	28-31 193-214
90°F PSIG 32°C kPa	260-280 1792-1930	30-36 207-248
110°F PSIG 43°C kPa	325-350 2240-2413	32-38 221-262

RNS0385A

SELF STORAGE AIR-COOLED

Characteristics vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 hour Ice Production**
70°F/50°F 21°C/10°C	270 lbs 122 kgs
90°F/70°F 32°C/21°C	223 lbs 101 kgs

OPERATING PRESSURES PSIG & kPa		
Air Temperature Entering Condenser	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	243-270 1675-1862	31-36 214-248
90°F PSIG 32°C kPa	273-315 1882-2172	34-39 234-269
110°F PSIG 43°C kPa	348-380 2399-2620	38-43 262-296

RNS0608A

WATER-COOLED

Characteristics will vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	591 lbs 268 kgs
90°F/70°F 32°C/21°C	451 lbs 204 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	215-225 1483-1551	27-29 186-200
90°F PSIG 32°C kPa	280-290 1931-2000	29-31 200-214
110°F PSIG 43°C kPa	360-370 2482-2551	32-34 221-234

RNS0609W

WATER-COOLED

Characteristics will vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	613 lbs 278 kgs
90°F/70°F 32°C/21°C	508 lbs 230 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	235-245 1670-1689	27-29 186-199
90°F PSIG 32°C kPa	235-245 1670-1689	27-29 186-199
110°F PSIG 43°C kPa	240-260 1655-1793	28-32 193-220

Condenser Water Consumption @ 80°F/70°F	
109	Gallons/100 lbs. of Ice
413	Liters/45 kgs. of Ice

Water regulating valve set to maintain 240 PSIG - 1655 kPa

RNS1000A

AIR-COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	1078 lbs 489 kgs
90°F/70°F 32°C/21°C	825 lbs 374 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	220-240 1517-1655	30-32 207-221
90°F PSIG 32°C kPa	275-310 1896-2137	33-35 228-241
110°F PSIG 43°C kPa	370-390 2551-2689	38-40 262-276

RNS1009W

WATER-COOLED

Characteristics will vary depending on operating conditions.

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
70°F/50°F 21°C/10°C	1158 lbs 525 kgs
90°F/70°F 32°C/21°C	960 lbs 435 kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
70°F PSIG 21°C kPa	235-245 1670-1689	29-31 200-214
90°F PSIG 32°C kPa	235-245 1670-1689	29-31 200-214
110°F PSIG 43°C kPa	240-260 1655-1793	30-36 207-248

Condenser Water Consumption @ 80°F/70°F	
131	Gallons/100 lbs. of Ice
496	Liters/45 kgs. of Ice

Water regulating valve set to maintain 240 PSIG - 1655 kPa

RNS1078C WITH RCU1098

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

ICE PRODUCTION	
Air Temperature Water Temperature	**24 Hour Ice Production**
-20°F/50°F -29°C/10°C	1131 lbs 513 kgs
70°F/50°F 21°C/10°C	1131 lbs 513 kgs
90°F/70°F 32°C/21°C	900 lbs 408 kgs
120°F/70°F 49°C/21°C	490 lbs 222kgs

OPERATING PRESSURES PSIG/kPa		
Air Temperature Around Ice Machine °F/°C	**Freeze Cycle**	
	Discharge Pressure	**Suction Pressure**
60°F PSIG 16°C kPa	240-250 1655-1724	33-35 227-241
70°F PSIG 21°C kPa	245-265 1689-1827	35-38 241-262
80°F PSIG 27°C kPa	245-270 1689-1862	36-39 248-269
90°F PSIG 32°C kPa	250-270 1724-1862	37-40 255-276
120°F PSIG 49°C kPa	360-400 2482-2758	45-49 310-338

Rack Models

RF1279R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG	
Water Temperature °F/°C	**24 hr Ice Production**
50°F- 10°C	1092 lbs - 495 kgs
70°F- 21°C	958 lbs - 435 kgs

SUCTION PRESSURE PSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
185-200 psi 1276-1379 kPa	23-28 psi 159-193 kPa
225-255 psi 1551-1758 kPa	30-35 psi 207-241 kPa
230-280 psi 1586-1931 kPa	31-36 psi 214-248 kPa
243-305 psi 1675-2103 kPa	33-38 psi 228-262 kPa
355-400 psi 2448-2758 kPa	38-43 psi 262-296 kPa

RFS1279R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG	
Water Temperature °F/°C	**24 hr Ice Production**
50°F- 10°C	1092 lbs - 495 kgs
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SUCTION PRESSURE PSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
185-200 psi 1276-1379 kPa	23-28 psi 159-193 kPa
225-255 psi 1551-1758 kPa	30-35 psi 207-241 kPa
230-280 psi 1586-1931 kPa	31-36 psi 214-248 kPa
243-305 psi 1675-2103 kPa	33-38 psi 228-262 kPa
355-400 psi 2448-2758 kPa	38-43 psi 262-296 kPa

RF2379R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG	
Water Temperature °F/°C	**24 hr Ice Production**
50°F- 10°C	2063 lbs - 936 kgs
70°F- 21°C	1702 lbs - 772 kgs

SUCTION PRESSURE PSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
175-200 psi 1207-1379 kPa	26-31 psi 176-214 kPa
220-250 psi 1517-1724 kPa	31-36 psi 214-248 kPa
225-275 psi 1551-1896 kPa	32-37 psi 221-255 kPa
250-310 psi 1724-2137 kPa	33-38 psi 228-262 kPa
365-410 psi 2517-2827 kPa	38-43 psi 262-296 kPa

RFS2379R

QUIETQUBE REMOTE AIR COOLED

Characteristics vary depending on operating conditions

24-HOUR ICE PRODUCTION IN LB/KG	
Water Temperature °F/°C	**24 hr Ice Production**
50°F- 10°C	2063 lbs - 936 kgs
70°F- 21°C	1702 lbs - 772 kgs

SUCTION PRESSURE PSIG/kPa	
Freeze Cycle	
Liquid Line Pressure	**Acceptable Suction Pressure Range**
175-200 psi 1207-1379 kPa	26-31 psi 176-214 kPa
220-250 psi 1517-1724 kPa	31-36 psi 214-248 kPa
225-275 psi 1551-1896 kPa	32-37 psi 221-255 kPa
250-310 psi 1724-2137 kPa	33-38 psi 228-262 kPa
365-410 psi 2517-2827 kPa	38-43 psi 262-296 kPa

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Diagrams

Wiring Diagrams

The following pages contain electrical wiring diagrams. Be sure you are referring to the correct diagram for the ice machine you are servicing.

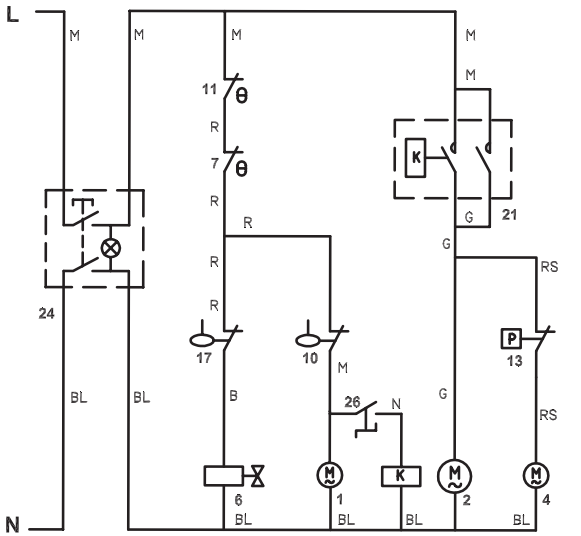
⚠Warning

Always disconnect power before working on electrical circuitry.

Flake Models

RF0244/RF0266/RF0385/RF0388/RF0399 AIR-COOLED

Refer to Nameplate for Voltage Rating



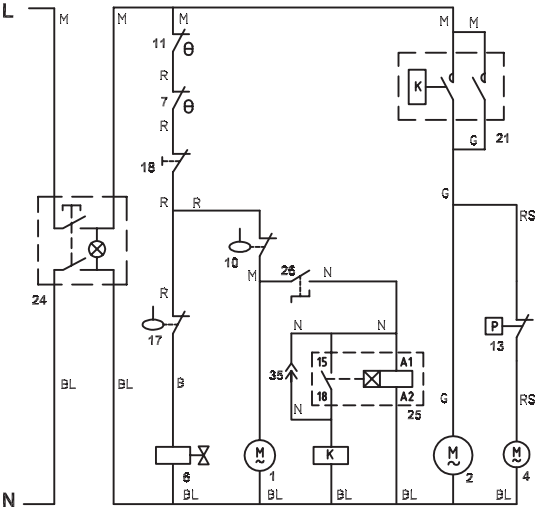
WIRING DIAGRAM LEGEND

RF0244/RNS0244/RF266/RF0385/RNS0385/RF0388/RF0399

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water Inlet valve
7	Evaporator low temperature safety or Low pressure control
10	Low water level safety
11	Bin thermostat
12	High temperature limit (snap disc)
13	Fan cycle control
17	Water level switch
21	Compressor relay
24	On/Off switch
26	Gear motor centrifugal switch
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RF0300 AIR-COOLED

Refer to Nameplate for Voltage Rating

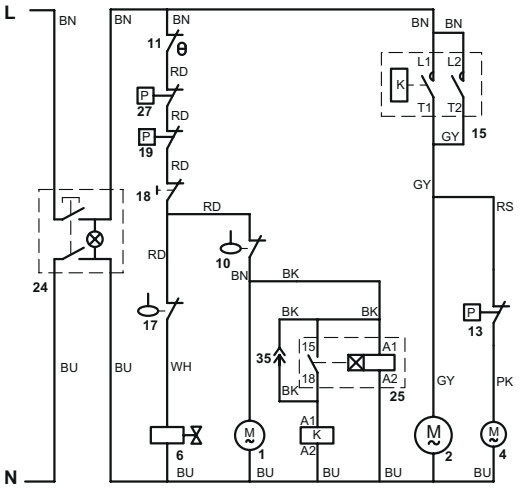


WIRING DIAGRAM LEGEND RF0300

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
7	Evaporator low temperature safety Low pressure control
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
17	Water level switch
18	Ice chute safety switch
21	Compressor relay
24	On/Off switch
25	Compressor time delay
26	Gear motor centrifugal switch
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RFS0300 AIR-COOLED

Refer to Nameplate for Voltage Rating

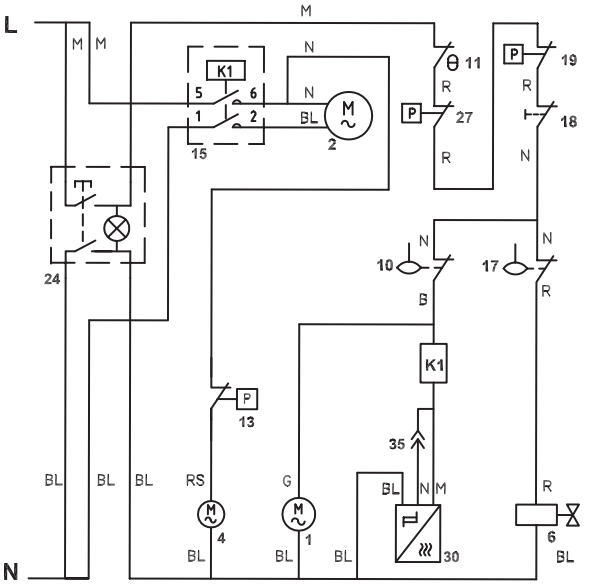


WIRING DIAGRAM LEGEND RFS0300

1	Gear Motor
2	Compressor
4	Fan motor
6	Water inlet valve
10	Low water level switch
11	Bin thermostat
13	Fan cycle control
17	Water level switch
18	Chute safety switch
19	High Pressure Safety Switch
24	On/Off switch
25	Compressor delay timer
27	Low Pressure Safety Switch
35	Compressor time delay by-pass (service staff only)
Wire Color Designation	
WH	White
BU	Blue
GY	Grey
BN	Brown
BK	Black
RD	Red
PK	Pink

RF0650/RF1200 AIR-COOLED

Refer to Nameplate for Voltage Rating

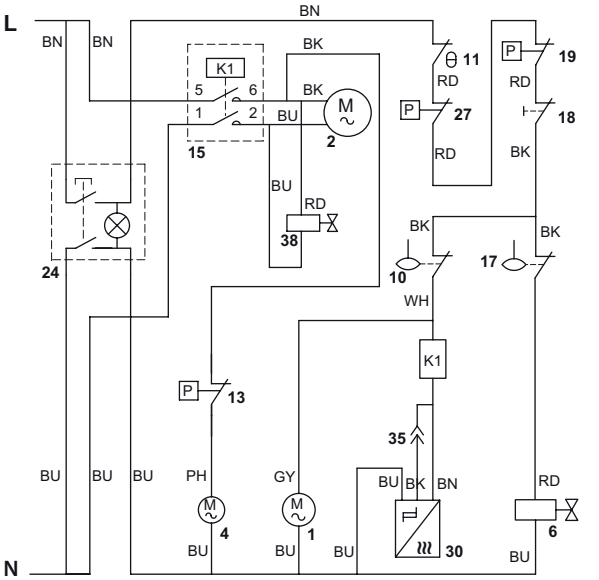


WIRING DIAGRAM LEGEND RF0650/RF1200

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
21	Compressor relay
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RFS1200A AIR-COOLED

Refer to Nameplate for Voltage Rating

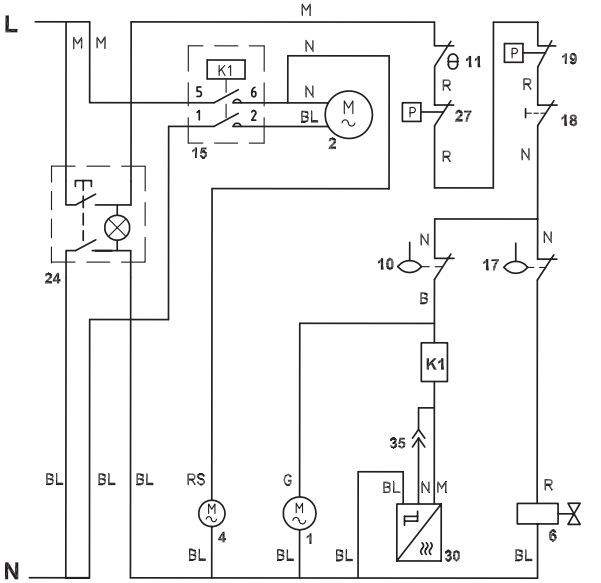


WIRING DIAGRAM LEGEND RFS1200A

1	Gear Motor
2	Compressor
4	Fan motor
6	Water inlet valve
10	Low water level switch
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Chute safety switch
19	High pressure safety switch
24	On/Off switch
27	Low pressure safety switch
30	Rotation sensor
35	Compressor time delay bypass
38	Solenoid Valve
Wire Color Designation	
GY	Grey
WH	White
BU	Blue
BN	Brown
BK	Black
RD	Red
PH	Pink

RF1200 WATER-COOLED

Refer to Nameplate for Voltage Rating

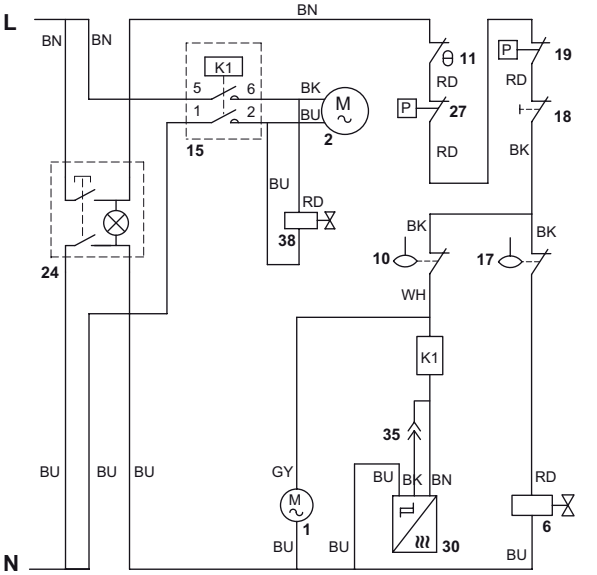


WIRING DIAGRAM LEGEND RF1200 WATER-COOLED

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
21	Compressor relay
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RFS1200W WATER-COOLED

Refer to Nameplate for Voltage Rating



WIRING DIAGRAM LEGEND RFS1200W WATER-COOLED

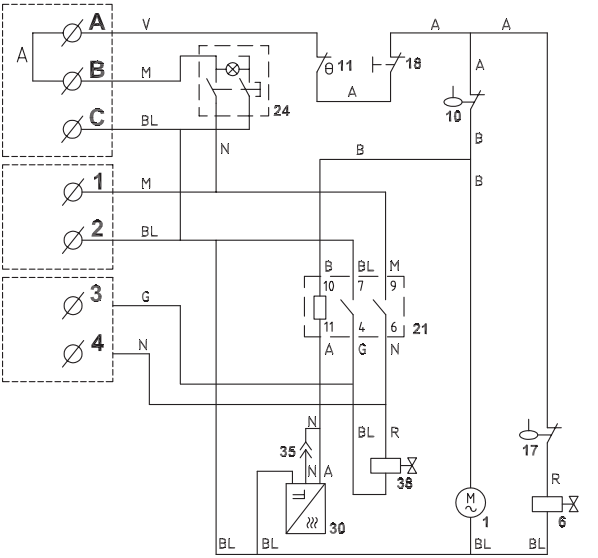
1	Gear Motor
2	Compressor
4	Fan motor
6	Water inlet valve
10	Low water level switch
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Chute safety switch
19	High pressure safety switch
24	On/Off switch
27	Low pressure safety switch
30	Rotation sensor
35	Compressor time delay bypass
38	Solenoid Valve
Wire Color Designation	
GY	Grey
WH	White
BU	Blue
BN	Brown
BK	Black
RD	Red
PH	Pink

RF1200C/RFS1200C QUIETQUBE HEAD SECTION

Refer to Nameplate for Voltage Rating

Connections

- A, B, & C connect to a remote panel when used - Jumper must be removed when remote panel is used
- 1 & 2 connect to line voltage
- 3 & 4 energize remote condensing unit - 2 Amp max



WIRING DIAGRAM LEGEND RF1200C/RFS1200C

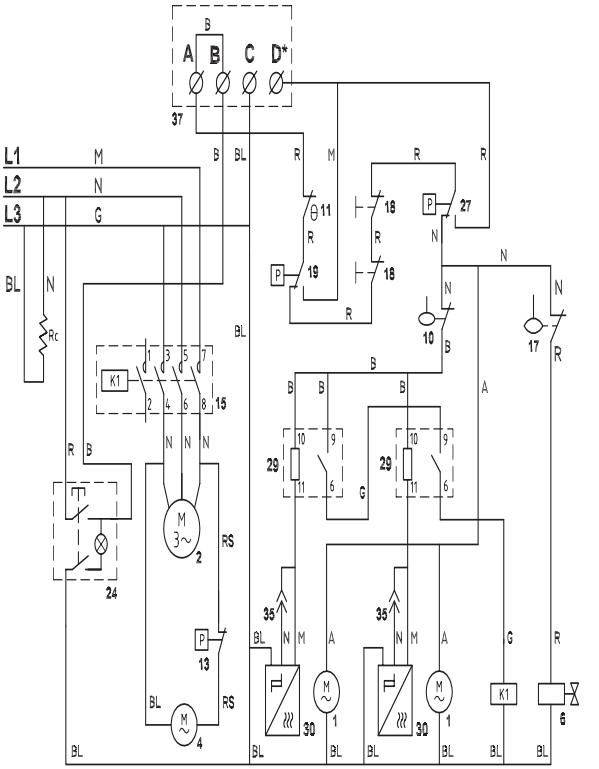
1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
38	Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

RF2300/RFS2300 AIR-COOLED & WATER-COOLED

Refer to Nameplate for Voltage Rating

Connections

- A & B connect to a remote panel when used - Jumper must be removed when remote panel is used
- C & D energize a remote alarm indication when used



WIRING DIAGRAM LEGEND RF2300/RFS2300 AIR & WATER COOLED

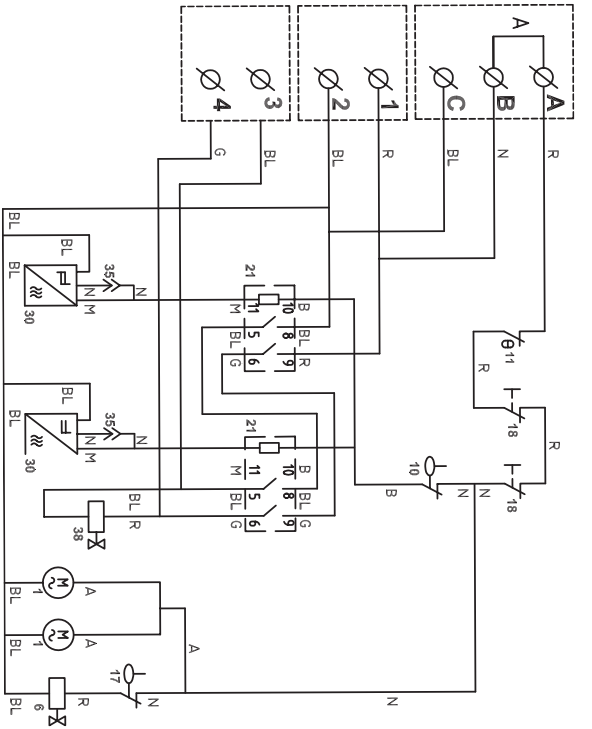
1	Gear Motor
2	Compressor
4	Condenser fan motor (air-cooled only)
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
29	Compressor time delay relay
30	Rotation sensor
35	Compressor time delay by-pass
37	Remote indicator panel terminals
Rc	Compressor crankcase heater
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink
A	Orange

RF2378C/RFS2378C QUIETQUBE HEAD SECTION

Refer to Nameplate for Voltage Rating

Connections

- A, B, & C connect to a remote panel when used - Jumper must be removed when remote panel is used
- 1 & 2 connect to line voltage
- 3 & 4 energize remote condensing unit - 2 Amp max



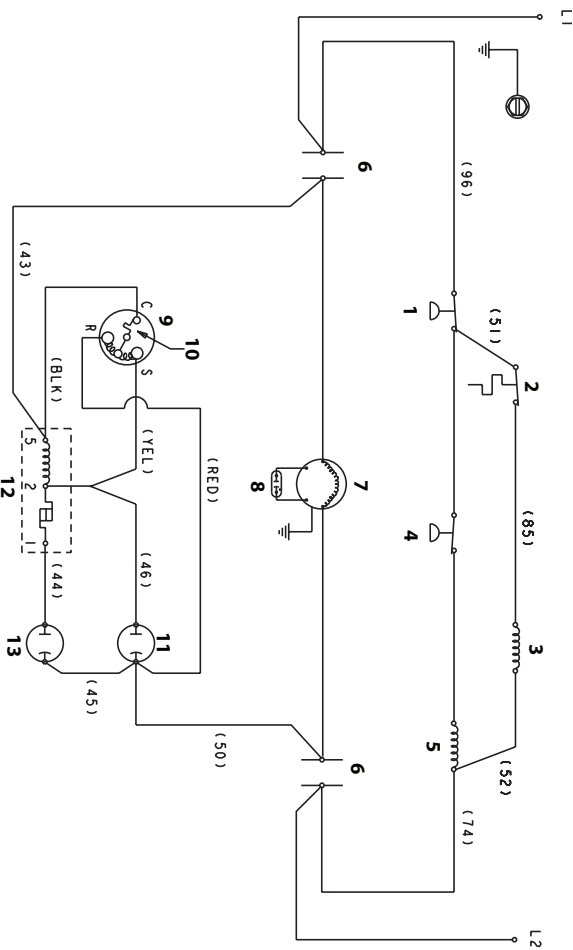
WIRING DIAGRAM LEGEND RF2300C/RFS2300 HEAD SECTION

1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
38	Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
A	Orange

Condensing Units

RCU CONDENSING UNIT 1PH

Refer to Nameplate for Voltage Rating

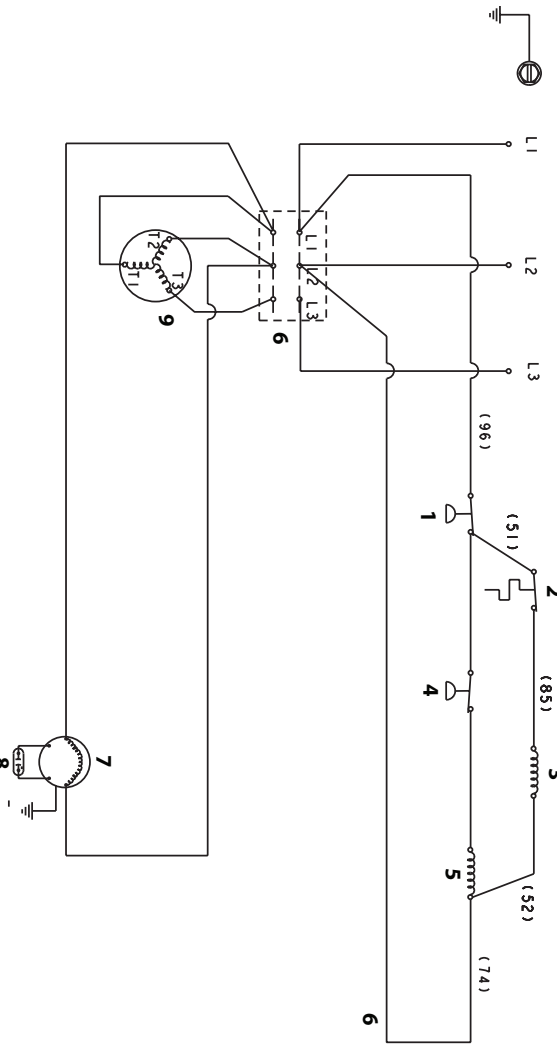


WIRING DIAGRAM LEGEND RCU CONDENSING UNIT

1	High Pressure Cutout Control
2	Thermostat - Receiver Heater
3	Receiver Heater
4	Low Pressure Cutout Control
5	Contactor Coil
6	Contactor Contacts
7	Condenser Fan Motor
8	Condenser Fan Motor Run Capacitor
9	Compressor
10	Compressor Overload
11	Compressor Run Capacitor
12	Compressor Relay
13	Compressor Start Capacitor
Wire Color Designation	
BLK	Black
YEL	Yellow
RED	Red
Compressor Windings	
C	Common Winding
S	Start Winding
R	Run Winding

RCU CONDENSING UNIT 3PH

Refer to Nameplate for Voltage Rating



WIRING DIAGRAM LEGEND RCU CONDENSING UNIT

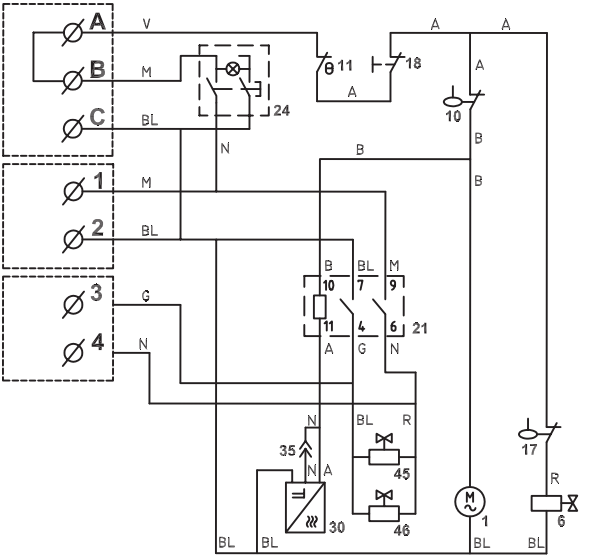
1	High Pressure Cutout Control
2	Thermostat - Receiver Heater
3	Receiver Heater
4	Low Pressure Cutout Control
5	Contactor Coil
6	Contactor Contacts
7	Condenser Fan Motor
8	Condenser Fan Motor Run Capacitor
9	Compressor

Rack Models

RF1279R/RFS1279R HEAD SECTION

Connections

- A, B, & C connect to a remote panel when used - Jumper must be removed when remote panel is used
- 1 & 2 connect to line voltage
- 3 & 4 energizes remote refrigeration - 2 Amp max



WIRING DIAGRAM LEGEND RF1279R

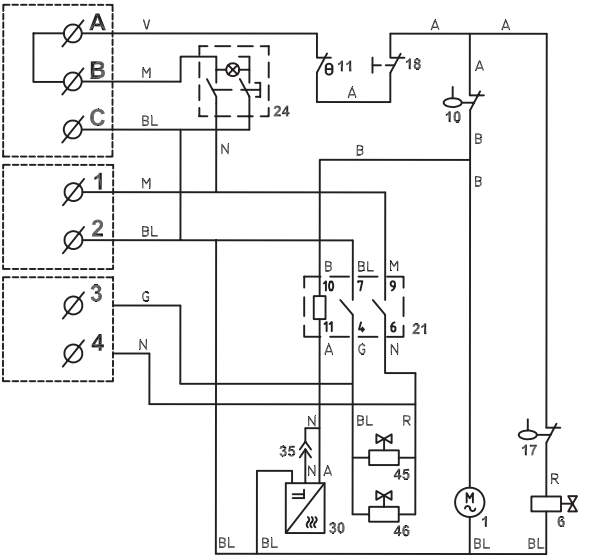
1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
45	Suction Line Solenoid Valve
46	Liquid Line Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

RF2379R/RFS2379R HEAD SECTION

Refer to nameplate for voltage

Connections

- A, B, & C connect to a remote panel when used - Jumper must be removed when remote panel is used
- 1 & 2 connect to line voltage
- 3 & 4 energizes remote refrigeration - 2 Amp max



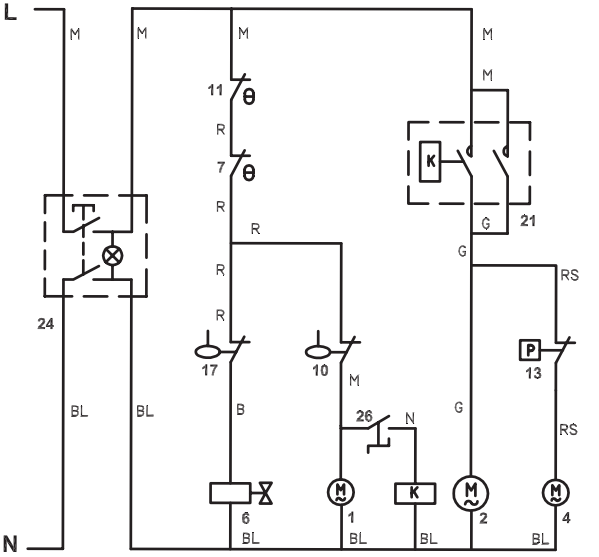
WIRING DIAGRAM LEGEND RF2379R

1	Gear Motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
17	Water level switch
18	Ice chute safety switch
21	Compressor Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass
45	Suction Line Solenoid Valve
46	Liquid Line Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet
A	Orange

Nugget Models

RNS0244/RNS0385 AIR-COOLED

Refer to Nameplate for Voltage Rating



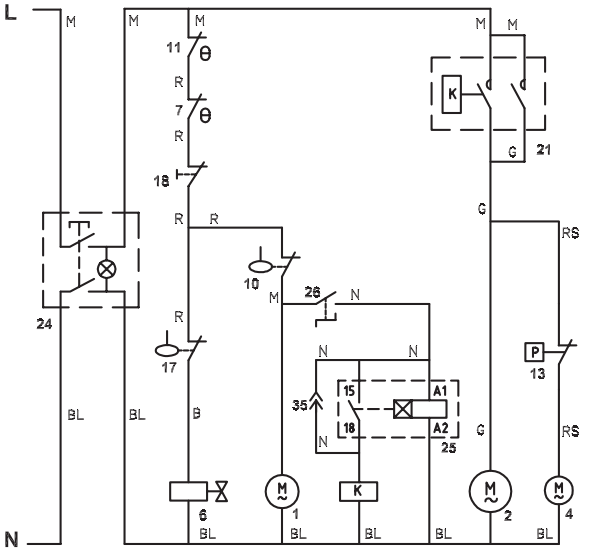
WIRING DIAGRAM LEGEND

RNS0244/RNS0385

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water Inlet valve
7	Evaporator low temperature safety or Low pressure control
10	Low water level safety
11	Bin thermostat
12	High temperature limit (snap disc)
13	Fan cycle control
17	Water level switch
21	Compressor relay
24	On/Off switch
26	Gear motor centrifugal switch
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RNS0308 AIR-COOLED

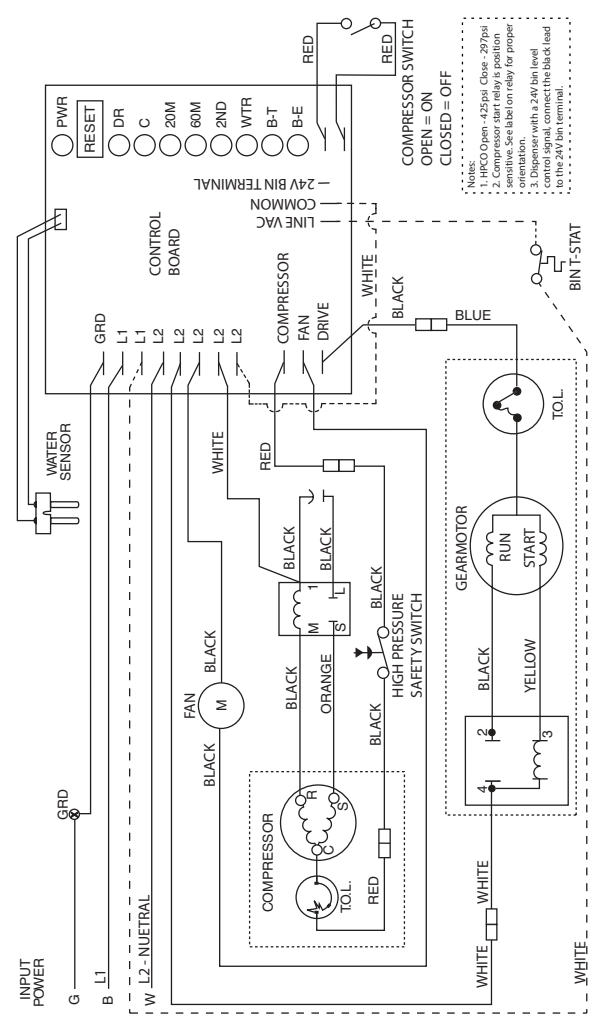
Refer to Nameplate for Voltage Rating



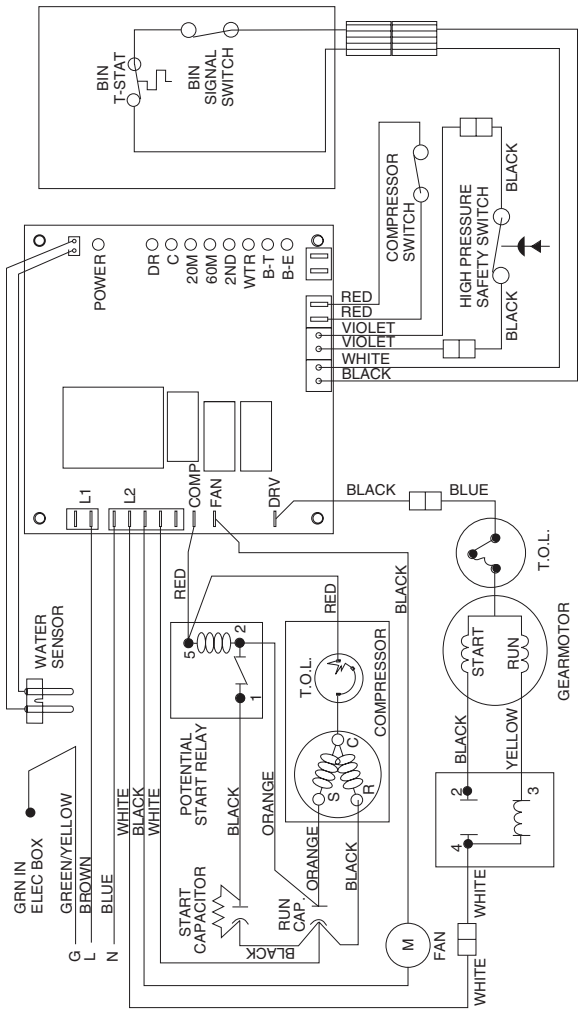
WIRING DIAGRAM LEGEND RNS0308

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
7	Evaporator low temperature safety
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
17	Water level switch
18	Ice chute safety switch
21	Compressor relay
24	On/Off switch
25	Compressor time delay
26	Gear motor centrifugal switch
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RN0400 115V/60HZ/1PH

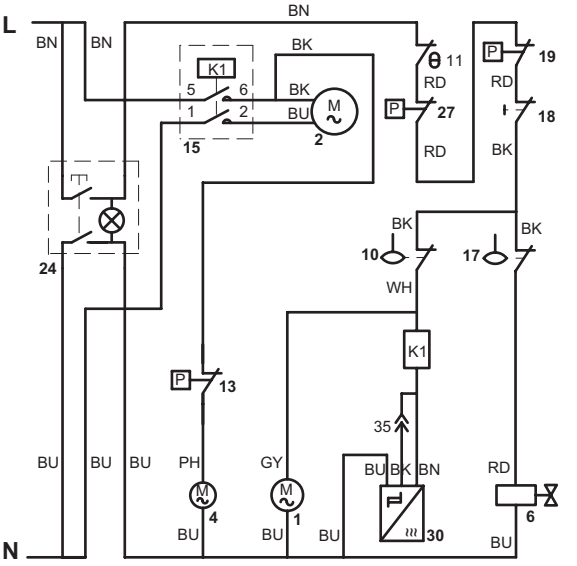


RN0400 230V/60HZ/1PH



RNS0600A AIR-COOLED

Refer to Nameplate for Voltage Rating

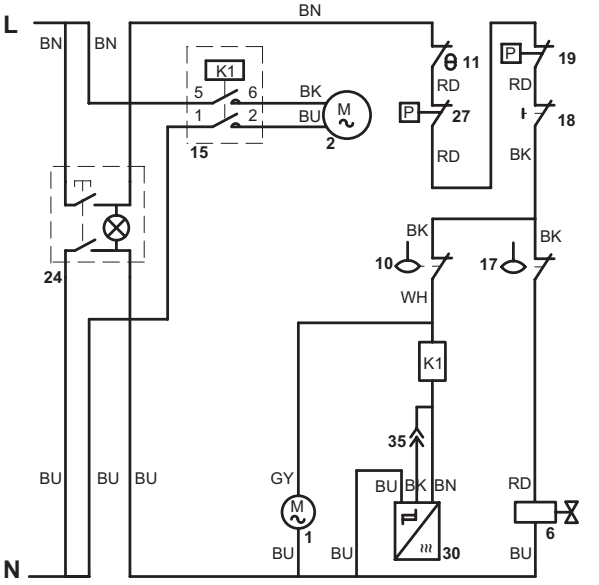


WIRING DIAGRAM LEGEND RNS0600A

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
24	On/Off switch
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
WH	White
BU	Blue
GY	Grey
BN	Brown
BK	Black
RD	Red
PH	Pink

RNS0600W WATER-COOLED

Refer to Nameplate for Voltage Rating

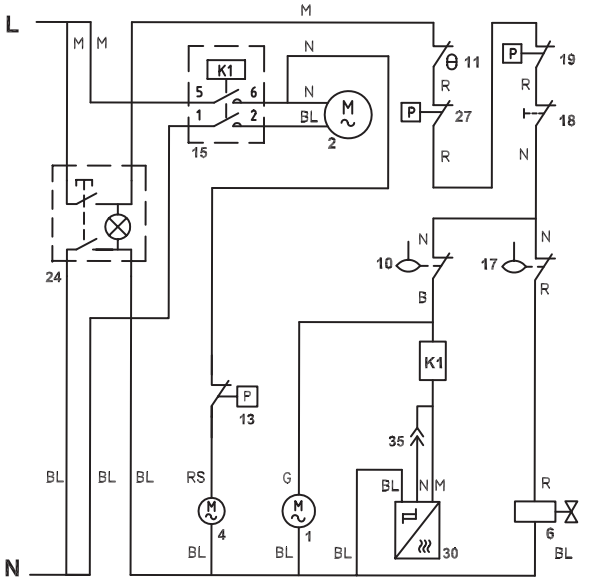


WIRING DIAGRAM LEGEND RNS0600W

1	Gear Motor
2	Compressor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
24	On/Off switch
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
WH	White
BU	Blue
GY	Grey
BN	Brown
BK	Black
RD	Red

RNS1000 AIR-COOLED

Refer to Nameplate for Voltage Rating

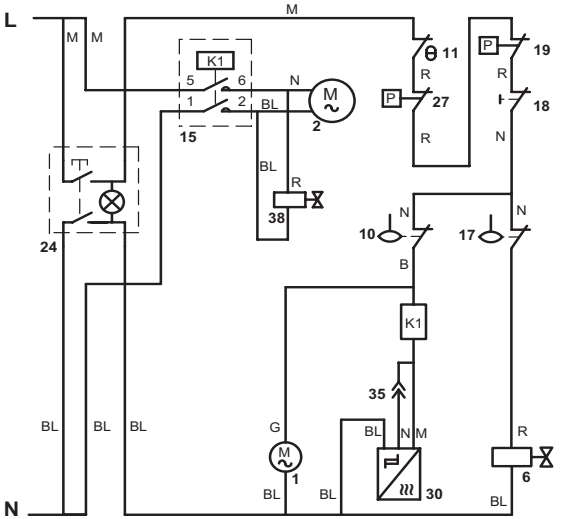


WIRING DIAGRAM LEGEND RNS1000

1	Gear Motor
2	Compressor
4	Condenser fan motor
6	Water inlet valve
10	Low water level safety
11	Bin thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Ice chute safety switch
19	High pressure cut out
21	Compressor relay
24	On/Off switch
25	Compressor time delay
27	Low pressure cut out
30	Rotation sensor
35	Compressor time delay by-pass
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

RNS1009 WATER-COOLED

Refer to Nameplate for Voltage Rating



WIRING DIAGRAM LEGEND RNS1009 WATER-COOLED

1	Gear Motor
2	Compressor
4	Fan Motor
6	Water inlet Valve
10	Low Water Level Switch
11	Bin Thermostat
13	Fan cycle control
15	Contactor
17	Water level switch
18	Chute safety switch
19	High pressure safety switch
24	On/Off switch
27	Low pressure safety switch
30	Rotation sensor
35	Compressor time delay by-pass (Service staff only)
38	Solenoid Valve
Wire Color Designation	
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
RS	Pink

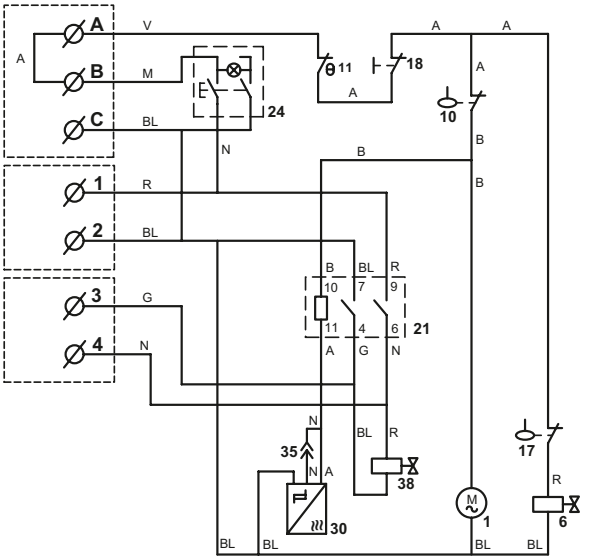
RNS1078C

Refer to Nameplate for Voltage Rating

Connections

- A, B, & C connect to a remote panel when used, or junction block located on top of junction box. Jumper must be removed when remote panel is used
- 1 & 2 connect to line voltage junction box on rear of ice machine - Red wire to L1, Black wire to L2

  3 & 4 energizes remote refrigeration - 2 Amp max

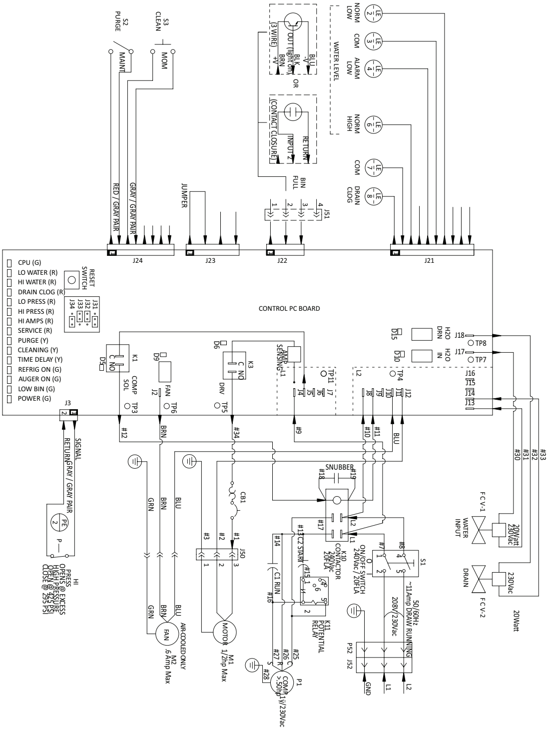


WIRING DIAGRAM LEGEND RNS1078C

1	Gear Motor
6	Water inlet valve
10	Low water level switch
11	Bin thermostat
17	Water level switch
18	Chute safety switch
21	Relay
24	On/Off switch
30	Rotation sensor
35	Compressor time delay by-pass (Service Staff only)
38	Solenoid Valve
Wire Color Designation	
A	Orange
B	White
BL	Blue
G	Grey
M	Brown
N	Black
R	Red
V	Violet

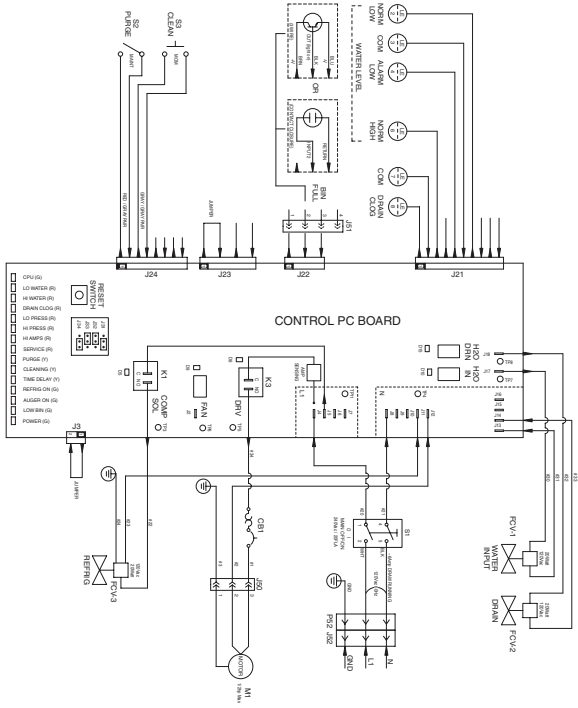
RN1000/RN1400 AIR & WATER COOLED

Refer to Nameplate for Voltage Rating



RN1000C/RN1200C QUIETQUBE HEAD SECTION

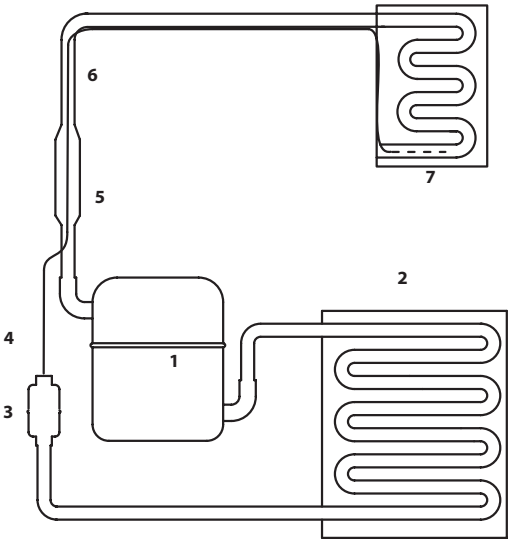
Refer to Nameplate for Voltage Rating



Refrigeration Tubing Schematics

Flake Models

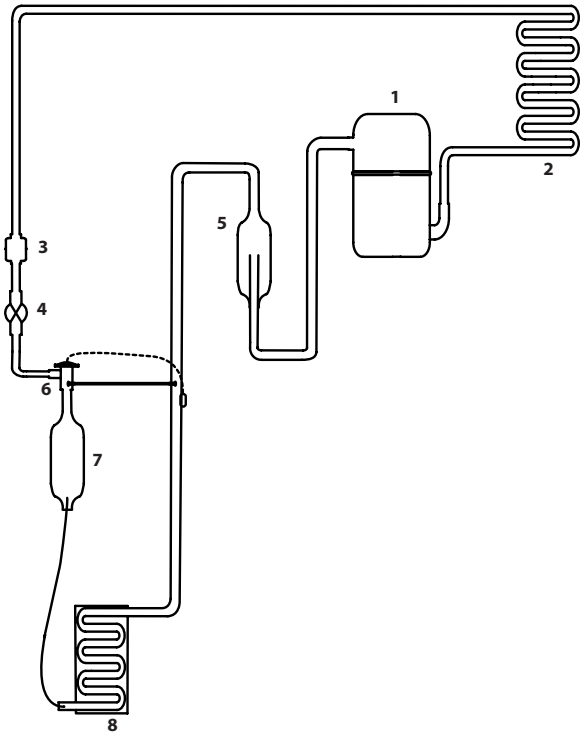
RF0244/RFS0244/RF0266/RF0300/RF0385/RF0388/ RF0399/RF0644/RF0650



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Capillary tube
5	Accumulator
6	Heat Exchanger
7	Evaporator

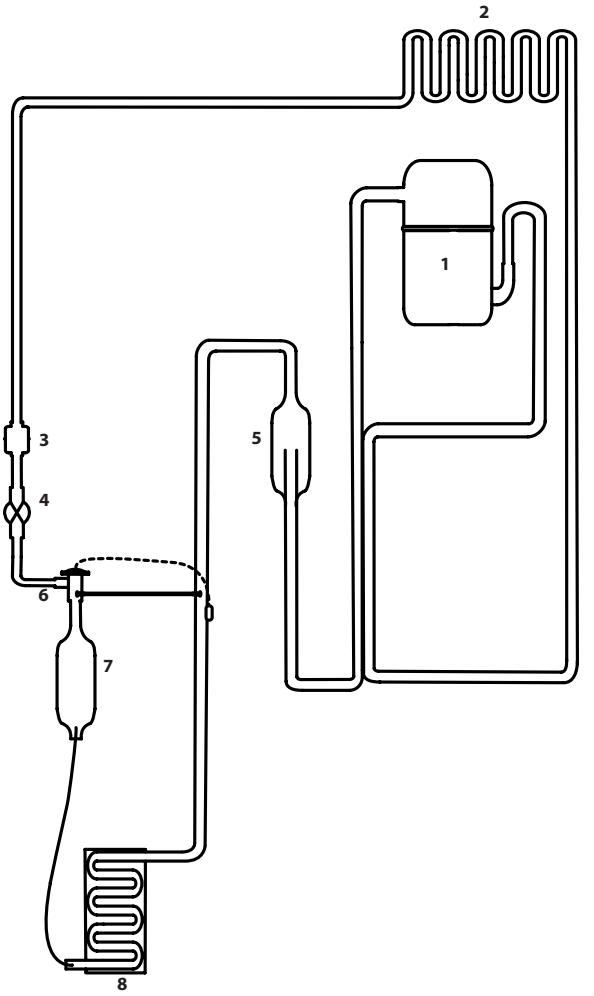
RF1200/RFS1200 AIR-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

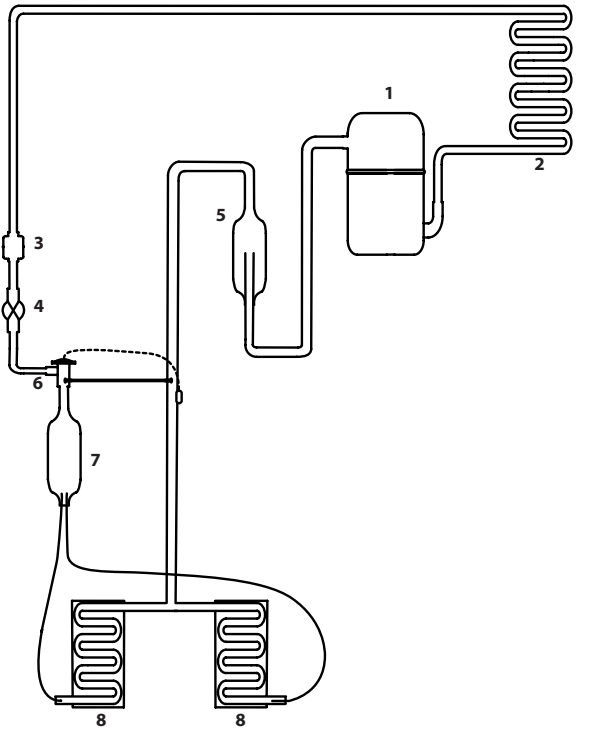
RF1200/RFS1200 WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

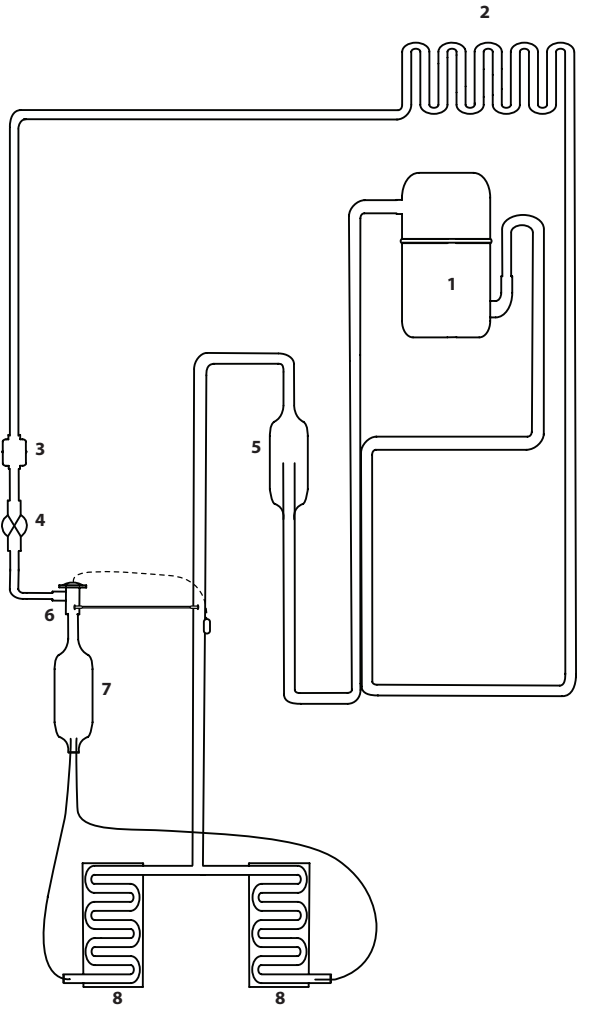
RF2300/RFS2300 AIR-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

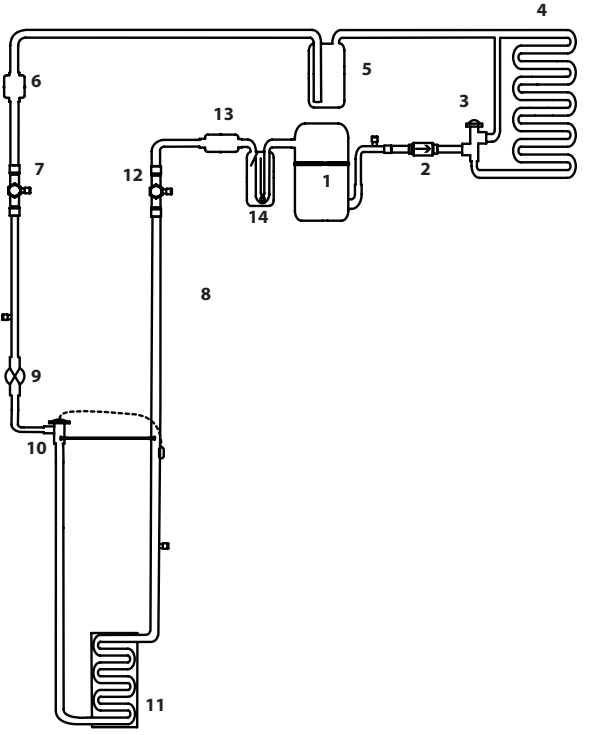
RF2300/RFS2300 WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser
3	Liquid Line Drier
4	Liquid Line Solenoid Valve
5	Suction Accumulator
6	Thermostatic Expansion Valve
7	Liquid Accumulator
8	Evaporator

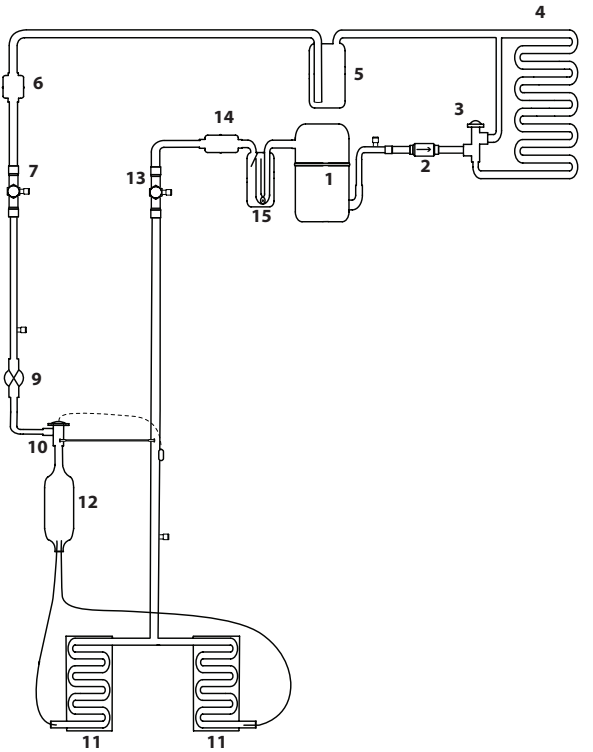
RF1200C/RFS1200C QUIETQUBE HEAD SECTION & RCU1075 CONDENSING UNIT



TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	Suction Line Shut-off Valve
13	Suction Line Filter
14	Suction Accumulator

RF2300C/RFS2300 QUIETQUBE HEAD SECTION & RCU2375 CONDENSING UNIT



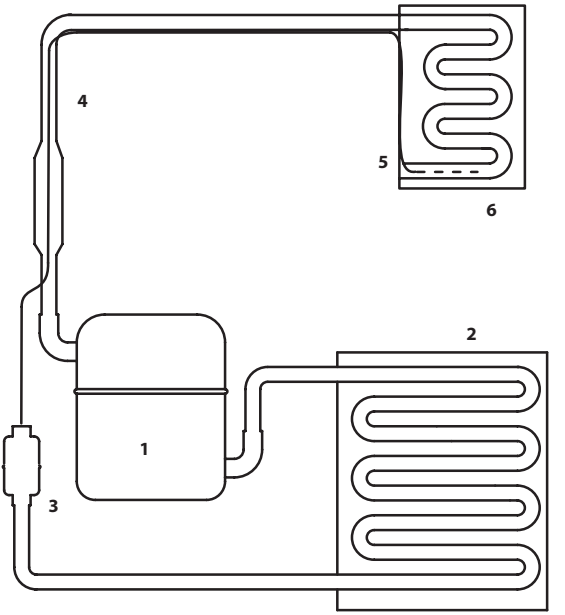
TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	Liquid Accumulator
13	Suction Line Shut-off Valve
14	Suction Line Filter
15	Suction Accumulator

Nugget Models

RN0244/RNS0244/RN0385/RNS0385

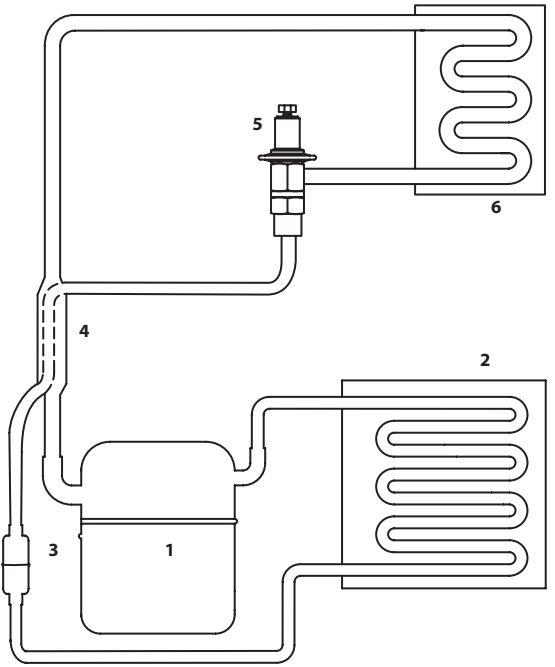
Air & Water-cooled



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser (air or water cooled)
3	Liquid Line Drier
4	Heat Exchanger
5	Capillary Tube
6	Evaporator

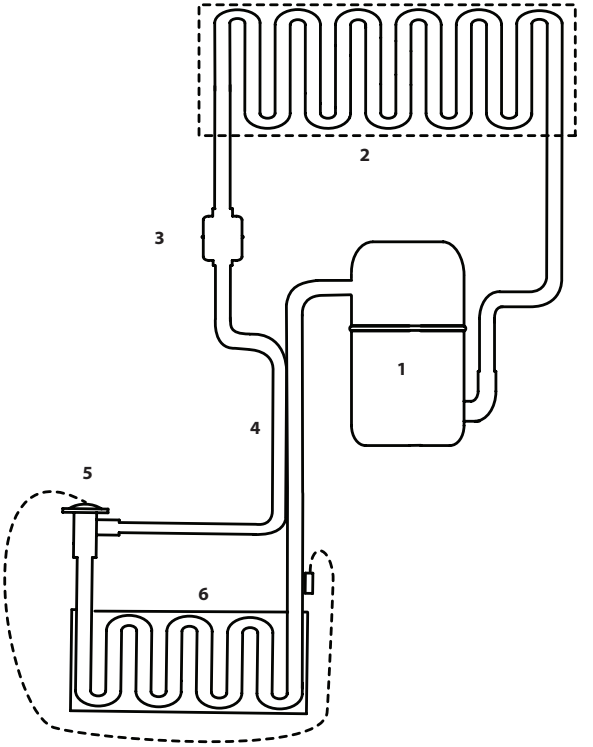
RNS0308



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser (air or water cooled)
3	Liquid Line Drier
4	Heat Exchanger
5	Automatic Expansion Valve
6	Evaporator

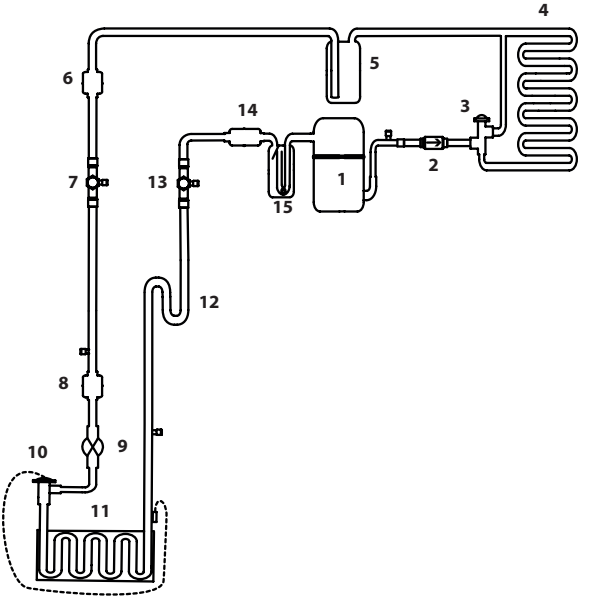
RN0400/RN1000/RN1400 AIR & WATER-COOLED



TUBING DIAGRAM LEGEND

1	Compressor
2	Condenser (air or water cooled)
3	Liquid Line Drier
4	Heat Exchanger
5	Thermostatic Expansion Valve
6	Evaporator

RN1000C/RN1200C QUIETQUBE HEAD SECTION & RCU1075/RCU1275 CONDENSING UNIT



TUBING DIAGRAM LEGEND

1	Compressor
2	Check Valve
3	Head Pressure Control Valve
4	Condenser (air or water cooled)
5	Receiver
6	Condensing unit Liquid Line Drier
7	Liquid Line Shut-off Valve
8	Ice Machine Liquid Line Drier
9	Liquid Line Solenoid Valve
10	Thermostatic Expansion Valve
11	Evaporator
12	S Trap (20′ + Rise Only)
13	Suction Line Shut-off Valve
14	Suction Line Filter
15	Suction Accumulator

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