



True Manufacturing Co., Inc.

2001 East Terra Lane • O'Fallon, Missouri 63366-4434
(636) 240-2400 • FAX: (636)-272-2408

International FAX: (636)-272-7546 • (800)-325-6152

Parts Department: (800)-424-TRUE (424-8783)
Parts Department FAX: (636)-272-9471

TRUE[®]
SERVICE MANUAL
TRUE ICE
Original Instructions

Contact Us:

Warranty Phone +1 855-299-3510

Warranty Email CommercialIceWarrantyInquiries@truemfg.com

Technical Phone +1 888-783-1429

Technical Email CommercialIce@truemfg.com





Contents

Preface

Nomenclature.....3
 Covered Models.....4

Safety Information

Signal & Symbol Definitions.....6
 Basic Safety & Operation Warnings.....7
 Personal Injury Warnings.....8
 Hydrocarbon Refrigerant Warnings.....9
 Ice Machine Disposal Warnings.....10
 Electrical Safety Warnings.....11

Good Refrigeration Practices

R290 Frequently Asked Questions.....13
 System Contamination Clean-Up.....13

Ice Machine Specifications

Clearances.....14
 System Refrigerant Charge.....14
 Heat of Rejection.....14
 Plumbing Connection Requirements.....15
 Drain Requirements.....16
 Plumbing Connection Diagrams.....16
 Electrical Requirements.....17
 Plan Views & Dimensions.....20

Component Identification

30" Top View.....24
 22" Top View.....25
 Water Circuit.....25
 Heat Exchanger/UV Bulb.....26
 Electrical.....26
 Temperature Probe Locations.....28
 Refrigerant System.....29
 Rear View 30".....31
 Rear View 22".....31

Display Modes and Operation

Home Screen.....32
 Manual Screen.....32
 Real Time Screen.....33
 Active Alarm Screen.....33
 Alarm Log Screen.....33
 Status Screen.....33
 Menu Screen.....34
 Info Screen.....34
 Date, Hour, Language Screen.....36

Ice Machine Adjustments

Access Codes.....38
 Function Access Levels.....39

Adjust Ice Thickness.....40
 Adjust Water Quality (purge adjustment).....41
 Adjust Ice Level Sensor (Time of Flight)/Bin Level.....42
 Water Filter Setup.....44
 Reminder Settings.....44

Sequence of Operations.....46

Maintenance & Cleaning

Recommended Maintenance Schedule.....48
 Panel Removal.....49
 Sump Tank Removal.....50
 Recommended Descaling & Sanitizing Procedures.....51
 Exterior Cleaning.....57
 Condenser Coil Cleaning.....57
 Air Filter Cleaning.....59
 TrueZone™ UV Bulb Replacement.....60
 Cleanup Procedure for Accidental UV Lamp Breakage...61
 General Surface Cleaning.....62
 Winterizing.....63

Troubleshooting & Diagnosis

Long Freeze/Long Harvest.....64
 Alarms.....66
 Flow Charts.....68
 Water Level Sensor.....73
 Proximity Switch (Bin Switch).....73
 Temperature Probes.....74
 Transducer Diagnosis.....76
 Compressor Diagnosis.....76
 Water Regulating Valve (Water-Cooled Units Only).....77
 Condenser Fan Speed Control.....77
 TrueZone™ (UV System).....78
 R290 Temperature Pressure Chart.....79

Diagrams

Wiring Diagram & Control Layout.....82
 Refrigeration Freeze Circuit.....84
 Water Circuit.....85

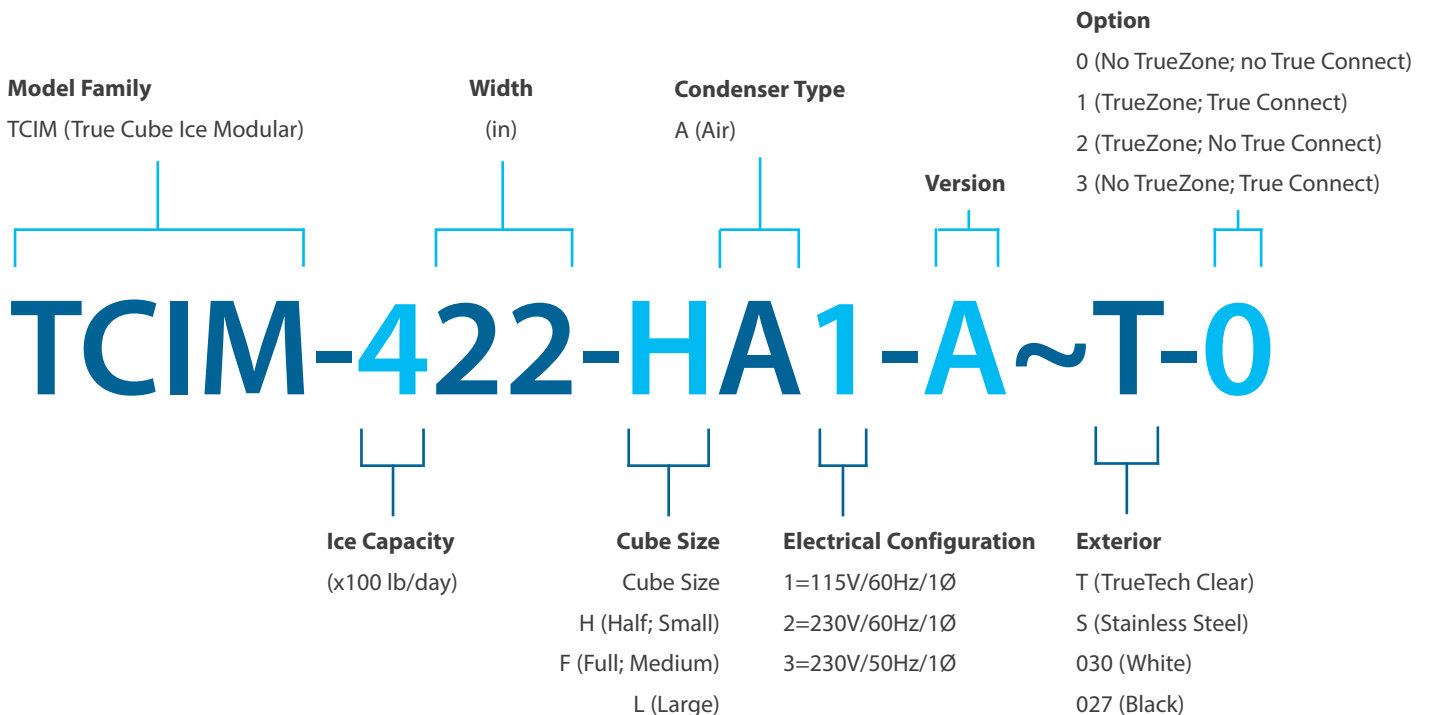
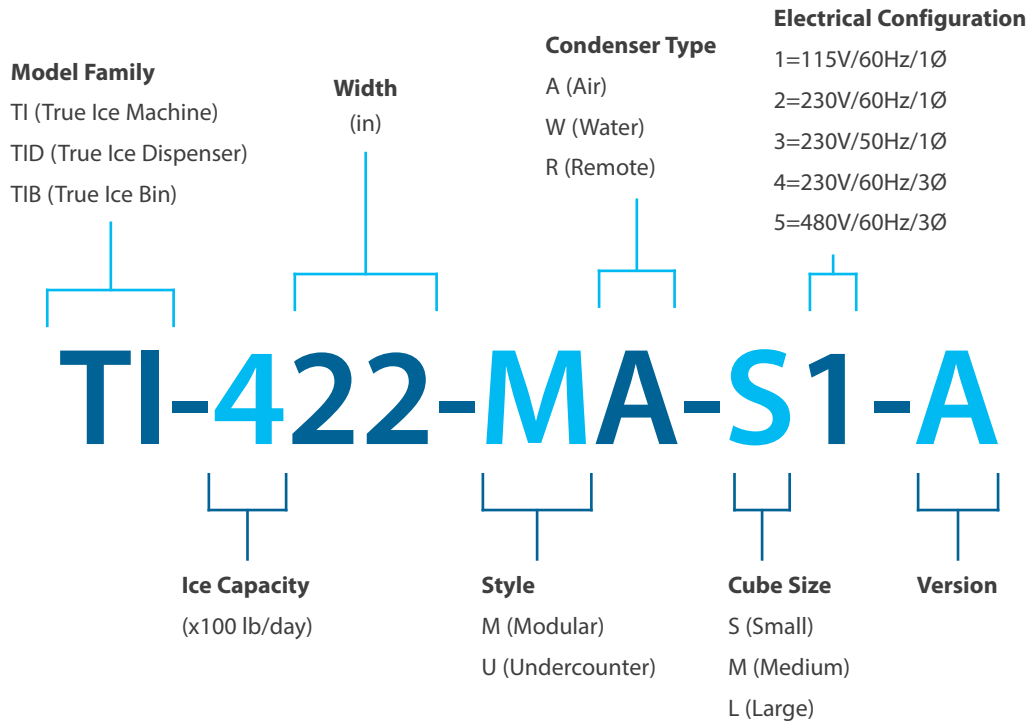
Air Cooled Ice Machine Specifications & Performance Data

TCIM-422-HA1-A/TI-422-MA-S1-A.....87
 TCIM-430-HA1-A/TI-430-MA-S1-A.....88
 TCIM-522-HA1-A/TI-522-MA-S1-A.....89
 TCIM-530-HA1-A/TI-530-MA-S1-A.....90
 TCIM-622-HA1-A/TI-622-MA-S1-A.....91
 TCIM-630-HA1-A/TI-630-MA-S1-A.....92

Warranty.....93

Preface

Nomenclature



Preface

Covered Models



22" Models

TCIM/TI-422

TCIM/TI-522

TCIM/TI-622

Preface



30" Models

TCIM/TI-430
TCIM/TI-530
TCIM/TI-630

Safety Information

Safety Information

The warning, guidelines, and recommendations within this document are meant to prevent appliance damage, injury, or death. Please carefully read all warnings, guidelines, and recommendations before proceeding to ensure the continued safe use and maintenance of your True ice machine.

Signal & Symbol Definitions




Below are symbols you may see in this document. Some symbols may not appear.




Signal Word Definitions	
⚠ DANGER!	An imminently hazardous situation which, if not avoided, will result in serious injury or death.
⚠ WARNING!	A potentially hazardous situation which, if not avoided, can result in serious injury or death.
⚠ CAUTION!	A potentially hazardous situation which, if not avoided, may result in minor or moderate injury; an unsafe practice.
ⓘ USER ACTION!	User action alert, follow all recommendations to avoid appliance or product damage.
ⓘ NOTICE!	Important information not related to hazards or risk of personal injury.

Safety Symbols	
	Safety alert; alerts reader to potential physical injury hazards. Obey all safety messages following this symbol to avoid possible injury or death.
	Flammable material; fire hazard.
	Electrical shock hazard.
	Earth terminal must be grounded.
	Tipping hazard; tip-over hazard.
	Sharp element; cut or sever hazard.

Safety Symbols	
	Crush or cut hazard.
	Slippery surface hazard.
	Optical radiation hazard; risk of eye and skin injury.
	Corrosive substance hazard.
	Toxic material hazard.
	Moving parts hazard.




Safety Information (cont.)

Additional Symbols	
	Mandatory action alert symbol; alerts reader to required or recommended actions. Obey all messages and recommendations following this symbol to avoid appliance or product damage.
	Important information not related to hazards or risk of personal injury.
	Review and understand the installation manual before installing, operating, or servicing.

Additional Symbols	
	Wear eye protection .
	Wear protective gloves .
	DO NOT dispose of with other household waste.

Basic Safety & Operation Warnings

Follow basic safety precautions, including the following, to reduce risk of personal injury, electric shock, fire, or death.

 WARNING!	
<div style="text-align: center; margin-bottom: 20px;"></div> <div style="text-align: center;"></div>	<p>Be sure to read and fully understand this document before installing, operating, maintaining, or servicing this ice machine. Failure to do so can result in appliance DAMAGE OR failure, property damage, LOSS OF WARRANTY, serious injury, or death. Appliance failure, personal injury, or property damage due to improper installation is not covered by warranty.</p> <ul style="list-style-type: none"> Failure to install, operate, and maintain the ice machine as detailed in this document will negatively affect safety, appliance performance, component life, and warranty coverage. The ice machine must be installed in accordance with all applicable laws, codes, and regulations. All utility connections and fixtures must be maintained in accordance with all applicable laws, codes, and regulations. The manufacturer cannot be held responsible for injury or damage resulting from improper, incorrect, and unreasonable use. This appliance is not to be used, cleaned, or maintained by persons (including children) with reduced physical, sensory, or mental capabilities or lack of experience and knowledge, without proper supervision or instruction. DO NOT install or operate equipment that has been misused, abused, neglected, damaged, or altered/modified from original manufactured specifications. DO NOT modify or alter the ice machine. Improper alterations can result in electric shock, personal injury, fire, or death. The appliance owner is responsible for performing a Personal Protective Equipment (PPE) Hazard Assessment and to ensure adequate protection during maintenance and cleaning procedures. Use appropriate tools, safety equipment, and PPE during installation and servicing. Only use the appliance for its intended purpose as described in this document. Failure to do so may result in equipment damage, personal injury, or death. Keep the area surrounding the appliance clean to avoid appliance damage from debris or pests. All covers, and access panels must be in place and properly secured when operating the ice machine. Maintain all minimum clearances. See "Clearances" (pg. 14). DO NOT obstruct vents or openings.

Safety Information (cont.)

Personal Injury Warnings

Only qualified technicians should install and service the appliance. For assistance finding a qualified technician, please visit our Service Company Locator at truemfg.com/support/service-locator/. True is solely the appliance manufacturer and is not responsible for installation.







⚠ DANGER!

	DO NOT allow children to play with or in the appliance. Child entrapment or personal injury can occur.
 	Flammable refrigerant and high voltage electricity. Installations and repairs must be performed by qualified technicians aware of the dangers associated with refrigerant under pressure and high voltage electricity. Follow all lockout and tag out procedures when working on this equipment.
	DO NOT store or use the following in the vicinity of this or any other appliance: <ul style="list-style-type: none"> • Gasoline or other flammable vapors and liquids • Combustible or explosive substances, such as aerosol cans with a flammable propellant • Flammable oil-soaked cloths or combustible cleaning solutions for cleaning • Other volatile or flammable substances • Open flame source

⚠ WARNING!


	<ul style="list-style-type: none"> • Only qualified technicians should install and service your ice machine. • Turn off and lockout all utilities (gas, electric, water) according to approved practices during maintenance or servicing. • Use appropriate tools, safety equipment, and personal protective equipment (PPE) during installation and servicing. • DO NOT touch the cold surfaces in the evaporator compartment when hands are damp or wet. Skin may stick to extremely cold surfaces. • Choke Hazard! Ensure all components and fasteners are securely in place after installation. Be sure no objects have fallen into any dispenser unit or ice storage bin; immediately remove any objects.
	This product can expose you to chemicals including Di-(2-Ethyl hexyl) Phthalate (DEHP), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to P65warnings.ca.gov .
	Slippery Surfaces! Moisture from improper drainage can create slippery surfaces near the ice machine. It is your duty to immediately warn your customers of, and dry, the slippery surface. All wet floor areas must be marked with a wet floor sign.

Safety Information (cont.)

⚠ WARNING! (cont.)	
	<p>Sharp edges! Take care when moving, installing, cleaning, servicing, and maintaining the ice machine to avoid cuts. Be sure to take care when reaching under the appliance or handling metal components.</p> <ul style="list-style-type: none"> Stay clear of pinch point areas, such as the space between appliance doors and surrounding cabinetry. Take care closing doors with children nearby.
	<p>Crush or cut hazard! Keep clear of moving components. Components can move without warning unless power is disconnected.</p>
	<p>Optical radiation hazard! UV light! Invisible laser radiation. Do not look directly at light. Always disconnect power before servicing the lamp.</p>
	<p>Tip over hazard! Appliance may pose a tipping hazard when uncrating, installing, or moving the appliance. Take appropriate safety precautions. Use of tip over restraints may only reduce (not eliminate) the tipping hazard. Never allow children to climb or hang on drawers, doors, or shelves.</p>
	<p>Risk of electric shock or burn! See "Electrical Safety Warnings" for more information.</p>
	<p>Moving parts hazard! Moving parts can cut. Keep hands clear when panels are removed.</p>

Hydrocarbon Refrigerant Warnings

TRUE appliances use hydrocarbon refrigerant (R-290/513A/600a). Check the nameplate or rating label to identify the ice machine's refrigerant.

⚠ DANGER!	
	<p>Risk of fire or explosion! Flammable refrigerant used.</p> <ul style="list-style-type: none"> Models may contain up to 150 grams of R290 (propane) refrigerant. R290 (propane) is flammable in concentrations of air between approximately 2.1% and 9.5% by volume (LEL lower explosion limit and UEL upper explosion limit). An ignition source at the temperature higher than 878°F (470°C) is needed for a combustion to occur. All servicing and maintenance must be performed by qualified technicians. This is to minimize the risk of fire or personal injury due to incorrect parts or improper service. DO NOT damage the refrigeration system during transportation, installation, maintenance, and servicing. If the ice machine is damaged, verify the refrigeration system's integrity is not compromised before proceeding. Never use sharp objects or tools to remove ice or frost. DO NOT use mechanical devices to accelerate defrost. Dispose of in accordance with all applicable laws, codes, and regulations. Follow all safety precautions associated with handling flammable refrigerant.

Safety Information (cont.)

Ice Machine Disposal Warnings

⚠ DANGER!








Risk of fire or explosion!

- Flammable refrigerant and insulation used. Dispose of in accordance with all applicable laws, codes, and regulations. Follow all safety precautions associated with handling flammable refrigerant and insulation.
- **DO NOT** dispose of your appliance with household waste.


Safety Information (cont.)

Electrical Safety Warnings

⚠ WARNING!

	<p>High Voltage Inside! Open circuit voltage and voltage to ground 600v.</p>
	<p>Risk of electric shock, burn, or fire!</p> <ul style="list-style-type: none"> It is the appliance owner's responsibility to ensure the electrical connection meets all applicable building codes. Failure to meet these code requirements can result in appliance damage, fire, electric shock or burns, serious personal injury, or death. All field wiring must conform to all applicable codes of the authority having jurisdiction. It is the responsibility of the end user to provide the disconnect means to satisfy local codes Before connecting your Ice machine to the power supply, verify the supply voltage and circuit rating match the nameplate and rating labels. Correct improper supply voltage or circuit size immediately. Before connecting your ice machine to the power supply, verify the power supply is correctly grounded. If the power supply is not grounded, correct immediately. True recommends hiring a qualified electrician to inspect your electrical circuit to ensure they are properly grounded. For personal safety, your ice machine must be properly grounded. The ice machine should receive power from its own individual dedicated electrical circuit. This provides the best performance and prevents overloading the power supply. Toggling the rocker switch does not remove power from all components. Unplug the ice machine or turn off the power supply before installation or servicing. This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., circuit breaker or disconnect switch) are provided Check all wire connections, including factory terminals, before operation. Connections can become loose during shipment and installation. DO NOT clean appliance with a pressure washer or hose. DO NOT immerse power cord in water. Never use a damaged power supply. DO NOT operate any appliance with a damaged power supply. Repair a damaged power supply immediately. All repairs must be performed by a qualified service company.
	
	
	

ⓘ NOTICE!

	<p>True will not warranty the following:</p> <ul style="list-style-type: none"> Compressor failures due to improper incoming voltage. <p>For more details, see True's full warranty statement. Find a copy of the wiring diagram with our Serial Number Lookup at truemfg.com/support/serial-number-lookup.</p>
---	--

Good Refrigeration Practices

Good Refrigeration Practices

Good refrigeration practices will always start with good detective work to find out what caused the failure so we can eliminate the possibility of a repeat failure. Below is a step by step set of procedures we would recommend is followed when repairing a refrigeration system.

- Before opening the refrigeration system remember that the POE oil is very hygroscopic and absorbs moisture very quickly. You should not leave the system open to the atmosphere for more than 15 minutes. Any vacuum that exists before any repair should be broken with nitrogen to avoid moisture being pulled into the system.
- When accessing the system do not remove process tube ends. Use Temporary bolt on access valves for diagnosing and repair.
- When repair is complete valves need to be removed.
- For your manifold gauges, use as short as hose as possible. We recommend a maximum length of 12".
- The introduction to the refrigeration system of anything other than a flushing agent, nitrogen, refrigerant, or oil is prohibited.
- If you are changing a component keep the system closed up with plugs or caps to reduce moisture contamination.
- Recover the refrigerant from the system. Note R-290 can be vented in a well ventilated area with no source of ignition.
- Remove the faulty refrigeration component and filter drier by cutting them out with a tubing cutter.
- Take a look at the filter drier and the components that have been removed for signs of oil breakdown, foreign objects like desiccant from drier, metal pieces from valves, etc.
- Be sure and test the oil from the refrigeration system for contamination using the proper test kit for the type of oil.
- When replacing a compressor make sure to also remove all the old oil from the system.
- If the oil shows signs of contamination. Flush the system.
- While purging nitrogen through the system drill (approximately 1/8") (3.18 mm) hole in the bottom of the accumulator (IF EQUIPPED) so we do not leave contaminated oil in the system. After blowing this out with nitrogen, be sure to braze the hole closed.
- Always replace the drier with the exact OEM size.
- When brazing on R-290 system always purge nitrogen through the system.
- Place a nitrogen charge in the system to check for any leaks.
- Release the nitrogen down to 2 PSI.
- Change vacuum pump oil regularly to ensure the deepest vacuum your pump is capable of.
- Start pulling a vacuum as soon as possible to help remove moisture.
- Using a micron gauge pull down to 500 microns.
- See if the system will hold this micron with the gauges closed and the pump switched off to test for leaks of moisture.
- Once the system is evacuated, weigh in the listed refrigerant charge located on the serial tag inside the cabinet. R-290 can be added as a liquid or vapor. Refrigerant 134a/404A charge as a liquid only. Refrigerant should be charged through the high side.
- Test run unit and check for proper operation.
- Remove access valves.

ANY NITROGEN ADDED TO THE SYSTEM SHOULD NOT EXCEED 200 PSI (13.8 BAR).

Good Refrigeration Practices (cont.)

R290 Frequently Asked Questions

1. Do you need specialized training to service R-290?

No. The Environmental Protection Agency (EPA) has ruled specialized training is not required to service R-290, but it is recommended. (North America)

2. Where do I go for training?

TRUE offers the R-290/600a Service manual at truemfg.com/support/manuals, as well as training videos on our YouTube channel True Manufacturing Technical Service.

3. What tools are needed to service HC appliances? Are any specialized tools required?

Standard refrigeration tools are required (pinch-off tool, nitrogen, vacuum pump, micron gauge, torches, soap bubbles, manifold set, tube cutter, etc.) Only two (2) specialized tools are required for servicing HC appliances:

- Combustible gas meter or HC leak detector.
- Available through most HVAC supply houses or through True Parts. Order P#965087.
- Safety placard advising of no smoking or open flames.

True offers the Hydrocarbon Service Kit P#830699 (pictured below)



4. Is there a maximum charge amount for applicants with R-290?

Yes, The maximum charge is 5.3 oz (150 g) per refrigerant system. For example, a GDM-10 has a 1.9 oz (53.9 g).

5. How do I tell if the system I am working on is built with R-290? Are there special markings?

Yes, there are special indicators the appliance is built with R-290.

- Serial label indicates refrigerant type
- Multiple labels stating the appliance is built with HC refrigerant
- Red sleeves on the process tubes (North America)

6. Will I need different gauges for an R-290 system?

No, you can use a R-134a manifold set. Due to the small system charge amounts, TRUE recommends using the shortest hoses possible. True provides 12" (304.8 mm) hoses in the Hydrocarbon Service Kit.

7. Do I have to recover R-290 refrigerant?

No, you do not have to recover HC refrigerant.

8. How do I leak check an R-290 system?

You mostly leak check an R-290 system the same way you would an R-134a/404A system. You can still use a bubble solution or an ultrasonic leak detector as well. True recommends using oxygen-free dry nitrogen with a trace gas not exceeding 200 psi (13.8 bar).

- Exception #1: You cannot use a halide leak detector on an R-290 system
- Exception #2: Your electronic leak detector must be designed specifically for combustible gas

9. Where can I get R-290 refrigerant?

For True warranty repairs, you can get refrigerant directly from True Parts. You can also source the refrigerant from an HVAC supply house or a company that sells gasses and welding supplies.

NOTE: If you are getting refrigerant somewhere besides True, be sure to purchase refrigerant grade.

10. What is the difference between R-290 and standard propane from a hardware store?

R-290 is a much higher purity than standard propane; this level is greater than 97.5%. R-290 has a low moisture content; moisture damages the refrigeration system and components. Also, R-290 is odorless, unlike standard propane.

11. Can I retrofit older appliances to R-290?

No, retrofitting existing equipment is prohibited.

12. Can I use the same parts to service HC appliances that I use for R-134a/404A appliances?

Not necessarily. True recommends using original equipment manufacturer (OEM) parts by specific model number. Parts used on HC appliances must meet specific UL certifications for non-incendive or non-sparking components.

System Contamination Clean-Up

1. Remove refrigerant from the ice machine.
2. Remove compressor from the refrigeration system.
3. Check the odor and appearance of the oil.
4. If no signs of contamination are present, perform an acid oil test to determine the type of cleanup required.

Ice Machine Specifications

Ice Machine Specifications

See specifications by model and model performance data starting on pg. 86.

Clearances

Air-cooled ice machine clearances			
MODEL	TOP	SIDES	BACK
TCIM/TI-422	6" (152.4mm)	6" (152.4 mm)	6" (152.4 mm)
TCIM/TI-430	3" (76.2 mm)	6" (152.4 mm)	6" (152.4 mm)
TCIM/TI-522	6" (152.4mm)	6" (152.4mm)	6" (152.4mm)
TCIM/TI-530	3" (76.2 mm)	6" (152.4mm)	6" (152.4mm)
TCIM/TI-622	3" (76.2 mm)	12" (304.8 mm)	6" (152.4mm)
TCIM/TI-630	3" (76.2 mm)	6" (152.4mm)	6" (152.4mm)

System Refrigerant Charge

See Specification & Performance Data starting on pg. 86.


Heat of Rejection

See Specification & Performance Data starting on pg. 86.


Ice Machine Specifications (cont.)

Plumbing Connection Requirements


⚠ WARNING!

	<p>Only connect your ice machine to a potable water supply.</p>
---	---

ⓘ USER ACTION!

	<p>DO NOT connect the ice machine to a hot water supply. Insulate the water line from sources of heat for greater operating efficiency. Supply water temperatures higher than the recommended maximum will cause reduced capacities.</p>
	<p>Inlet air gap included; no back-flow device required for the potable water inlet.</p>
	<p>This UL listed model has greater than a 1" (25.4 mm) anti-back flow air gap between the water inlet tube end and the highest possible sump water level.</p>
	<p>For further information, please see ul.com/database.</p>
	<p>Water filters recommended!</p> <p>TRUE recommends water filters for all ice machines. Water filters help remove particulate that reduces operating efficiency and equipment life. Regularly changing water filters is essential for optimum-quality ice, reduced maintenance, and prolonged equipment operation.</p>

ⓘ NOTICE!

	<p>Warranty does not cover issues caused by improper installation, lack of basic preventative maintenance, or harm caused to the ice machine by improper use of cleaners/sanitizers or by use of reverse osmosis water that does not have a neutral pH.</p>
---	---

Plumbing Connection Requirements

Plumbing connections	
Water Supply	1/2" Female NPT Fitting
Drain Connection	3/4" Female NPT Fitting

Min./Max. Temperature & Pressures

Temperature and pressure		
	Minimum	Maximum
Air Temperature	35°F (1.7°C)	110°F (43.3°C)
Water Temperature	35°F (1.7°C)	110°F (43.3°C)
Water Pressure	20 psig (138 kPa)	100 psig (689 kPa)

Ice Machine Specifications (cont.)

Drain Requirements

Always install drain lines with a 2" (50.8 mm) vertical air gap between the floor and the line's end. See fig. 1; figure is not to scale.

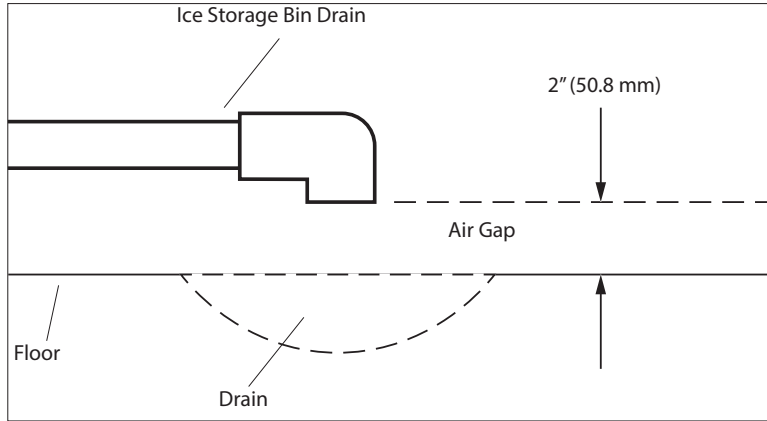
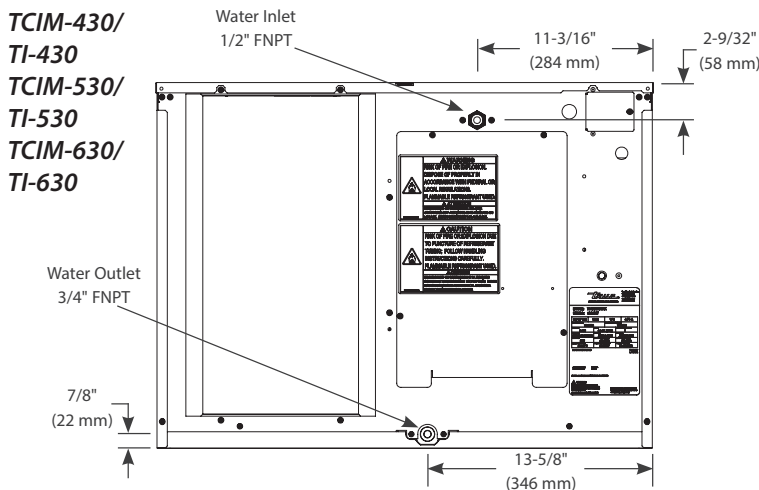
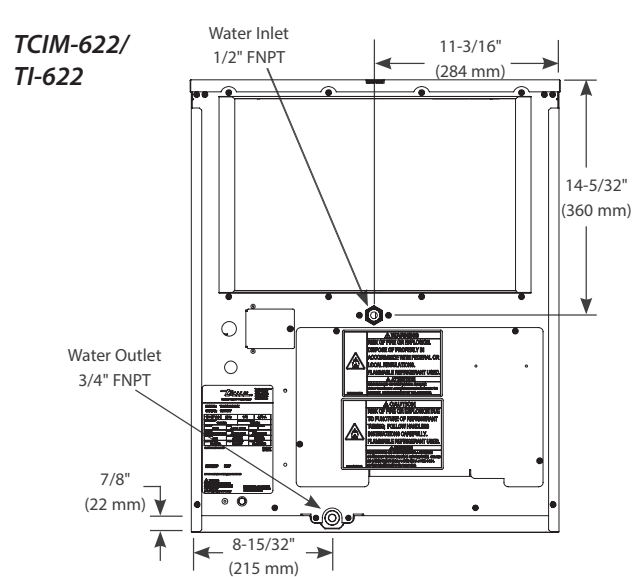
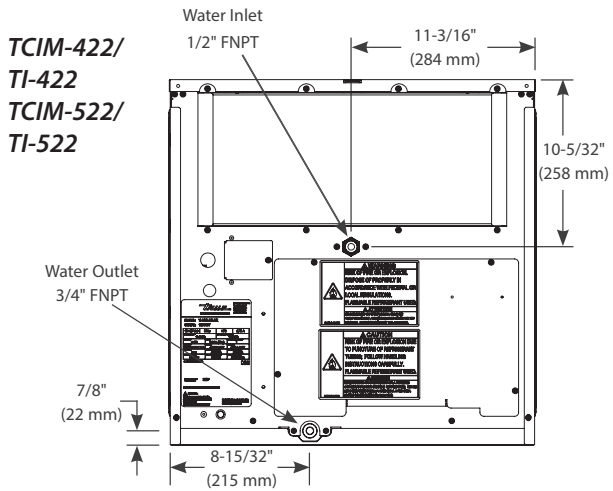


Fig. 1. Drain vertical air gap diagram.

Plumbing Connection Diagrams

Ice machine rear views shown.



Ice Machine Specifications (cont.)

Electrical Requirements

! NOTICE!

!

NOTE: Stinger, Wild or Hot legs should not be used in single phase application units. If present in a three-phase unit, it should be wired so that the stinger or hot leg phase of voltage is fed directly to the compressor.

NOTE: It is not recommended to use a Ground Fault Circuit Interrupter (GFCI/GFI) receptacle with commercial equipment. If a GFCI/GFI is required by code, use a GFCI/GFI breaker in the electrical panel, not an outlet, as outlet GFCI/GFI breakers are more prone to intermittent nuisance trips than panel circuit breakers.

Min. Circuit Ampacity & Max. Breaker/Fuse Size

Min./Max. circuit ampacity & fuse size			
Model	Minimum Circuit Ampacity	Maximum Overload Protection	Breaker/fuse size
TCIM/TI-422	15 Amps	15 Amps	15 Amps
TCIM/TI-430	15 Amps	15 Amps	15 Amps
TCIM/TI-522	15 Amps	15 Amps	15 Amps
TCIM/TI-530	15 Amps	15 Amps	15 Amps
TCIM/TI-622	15 Amps	20 Amps	20 Amps
TCIM/TI-630	15 Amps	20 Amps	20 Amps

Min./Max. Voltage Supply

Min./Max. voltage supply		
Nominal Voltage	Minimum No Load	Maximum No Load
115 Volts	104 Volts	127 Volts
230 Volts	208 Volts	254 Volts

Ice Machine Specifications (cont.)

Min./Max. Voltage Supply

The opening for the power supply connection is 7/8" diameter to fit a 1/2" trade size conduit.

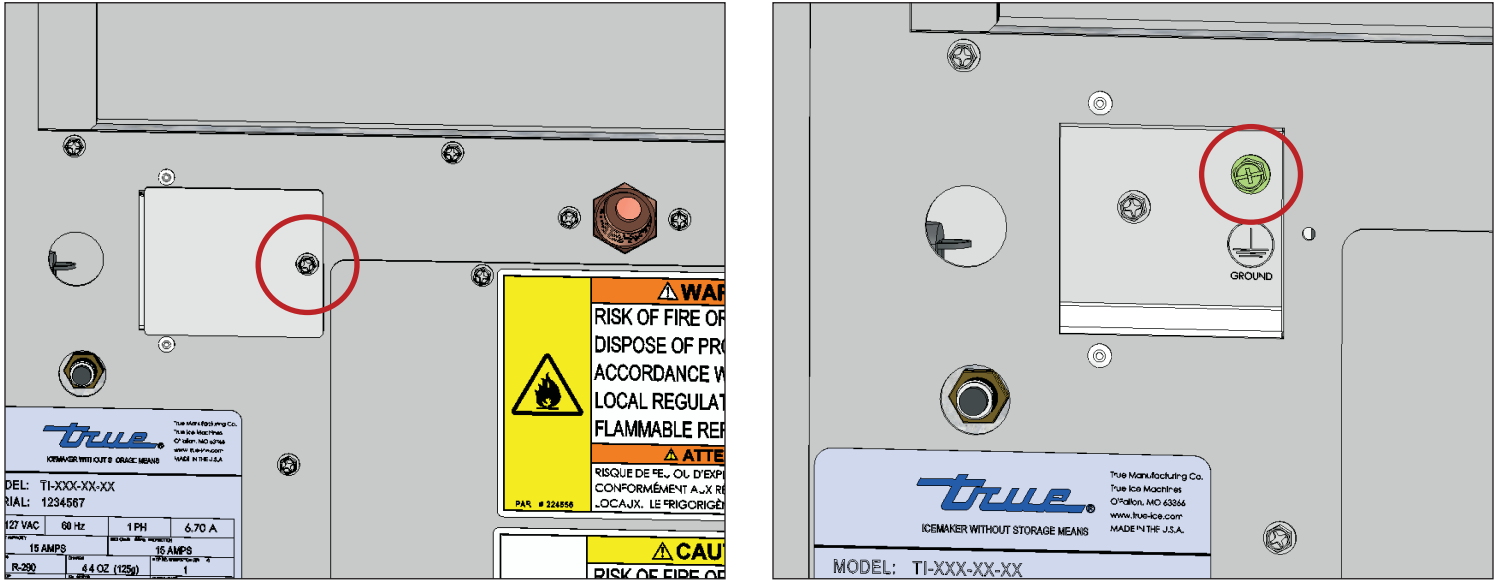


Fig. 1. Make the electrical connections inside the ice machine's junction box. Be sure to use strain reliefs. Always use the green grounding screw when making electrical connections.

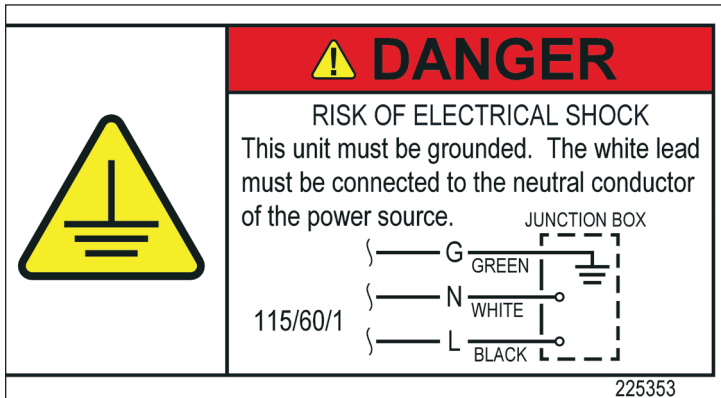


Fig. 2. Junction box electrical label.

Ice Machine Specifications (cont.)

Wire Gauge Chart

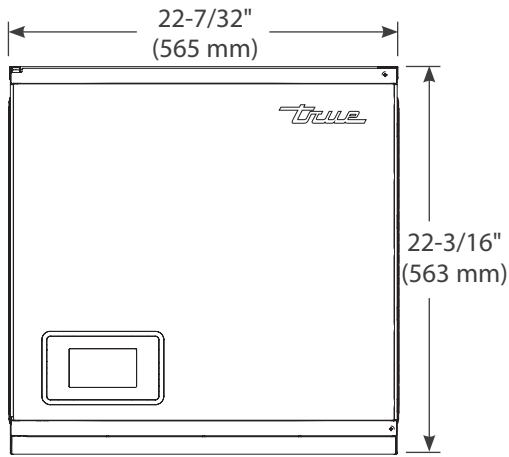
Wire gauge chart (115V)												
115 Volts	Distance in Feet to Center of Load											
AMPS	20	30	40	50	60	70	80	90	100	120	140	160
2	14	14	14	14	14	14	14	14	14	14	14	14
3	14	14	14	14	14	14	14	14	14	14	14	12
4	14	14	14	14	14	14	14	14	14	12	12	12
5	14	14	14	14	14	14	14	12	12	12	10	10
6	14	14	14	14	14	14	12	12	12	10	10	10
7	14	14	14	14	14	12	12	12	10	10	10	8
8	14	14	14	14	12	12	12	10	10	10	8	8
9	14	14	14	12	12	12	10	10	10	8	8	8
10	14	14	14	12	12	10	10	10	10	8	8	8
12	14	14	12	12	10	10	10	8	8	8	8	6
14	12	12	12	10	10	10	8	8	8	6	6	6
16	12	12	12	10	10	8	8	8	8	6	6	6
18	12	12	10	10	8	8	8	8	8	8	8	5
20	12	12	10	10	8	8	8	6	6	6	5	5
25	10	10	10	8	8	6	6	6	6	5	4	4
30	10	10	8	8	6	6	6	6	5	4	4	3

Wire gauge chart (230V)												
230 Volts	Distance in Feet to Center of Load											
AMPS	20	30	40	50	60	70	80	90	100	120	140	160
5	14	14	14	14	14	14	14	14	14	14	14	14
6	14	14	14	14	14	14	14	14	14	14	14	12
7	14	14	14	14	14	14	14	14	14	14	14	12
8	14	14	14	14	14	14	14	14	14	14	12	12
9	14	14	14	14	14	14	14	14	12	12	12	10
10	14	14	14	14	14	14	14	12	12	12	10	10
12	14	14	14	14	14	14	12	12	12	10	10	10
14	12	12	12	12	12	12	12	12	10	10	10	8
16	12	12	12	12	12	12	12	10	10	10	8	8
18	12	12	12	12	12	12	10	10	10	8	8	8
20	12	12	12	12	10	10	10	10	10	8	8	8
25	10	10	10	10	10	10	10	10	8	8	6	6
30	10	10	10	10	10	10	8	8	8	6	6	6

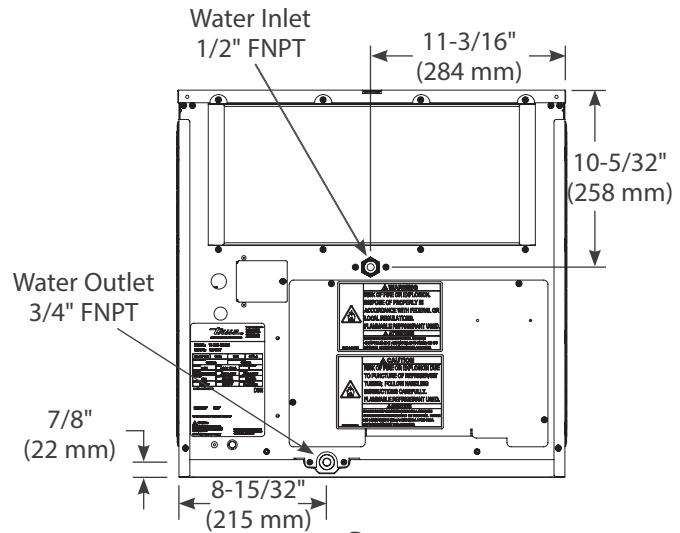
Ice Machine Specifications (cont.)

Plan Views & Dimensions

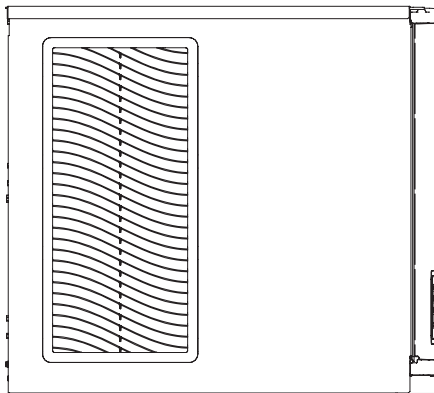
TCIM/TI-422/522



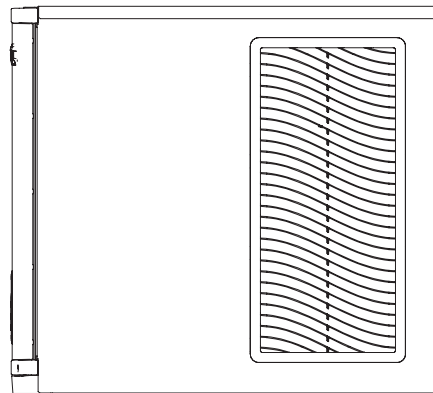
Front



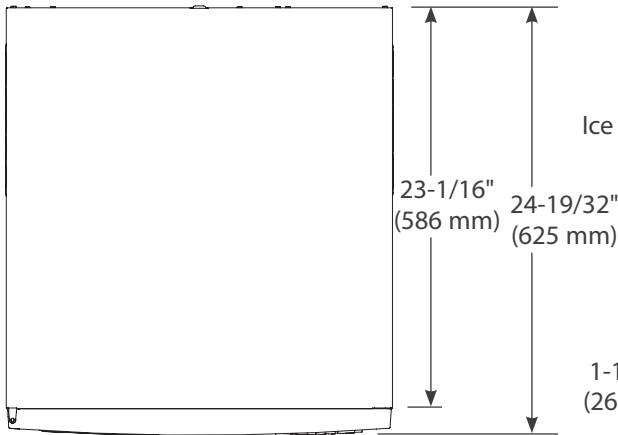
Rear



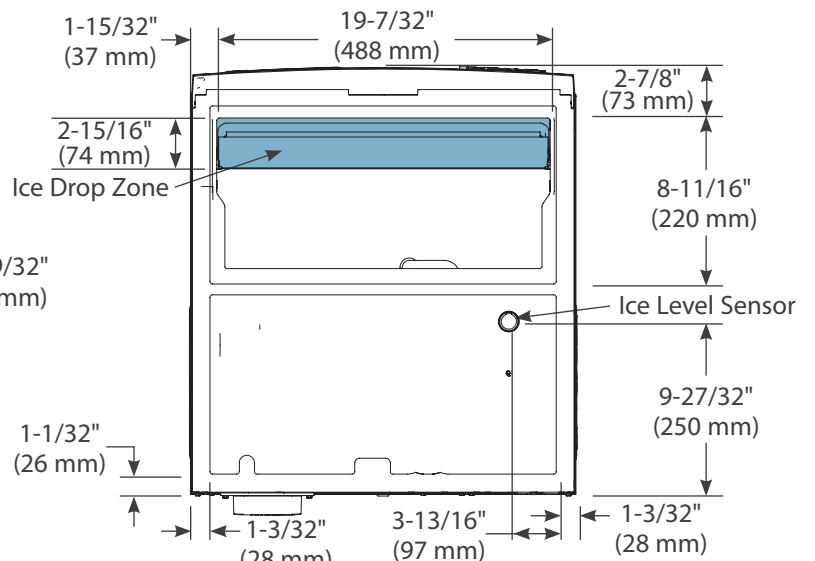
Left



Right



Top

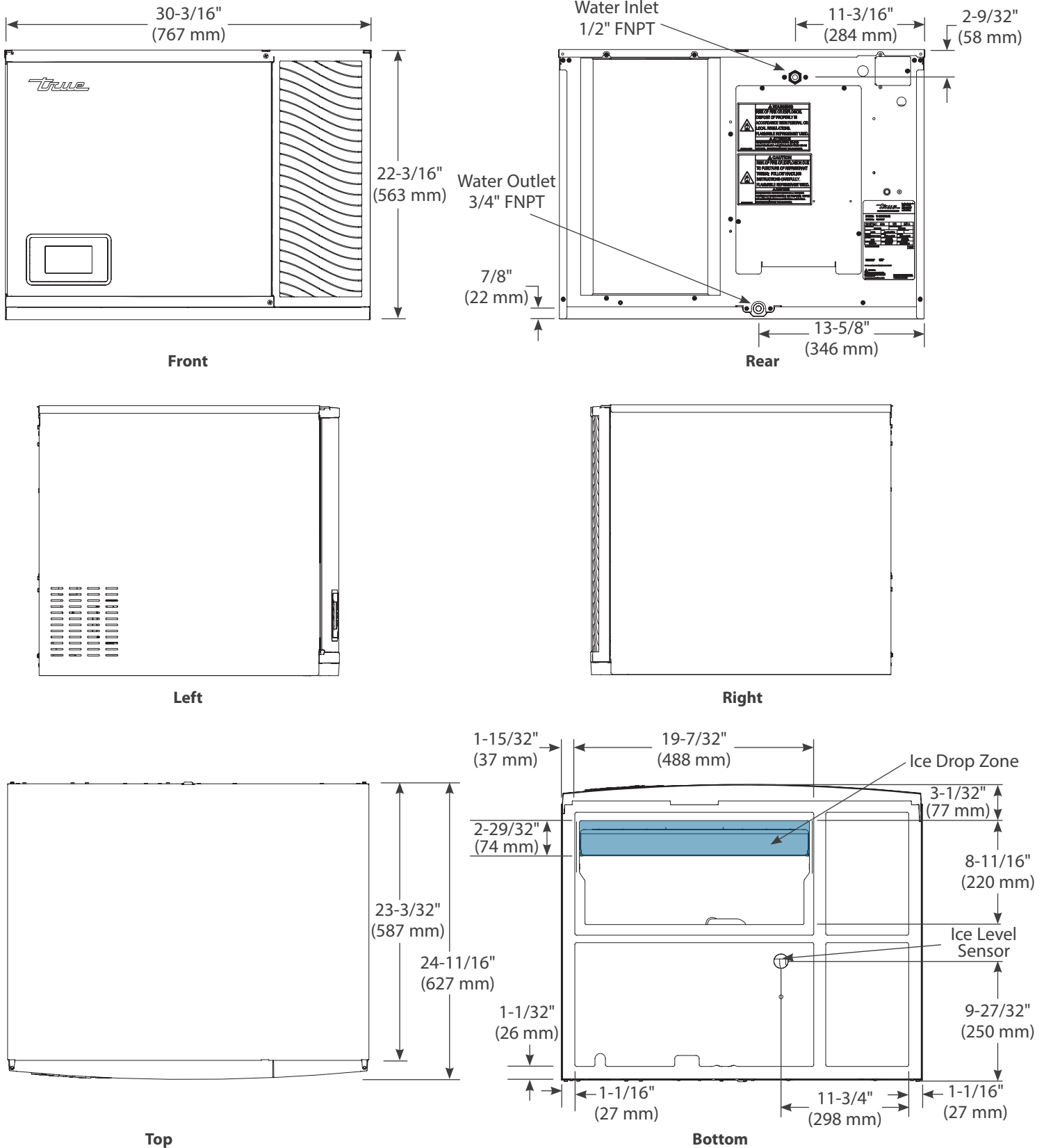


Bottom

Dimensions may vary by $\pm 1/8"$ (3.2 mm)

Ice Machine Specifications (cont.)

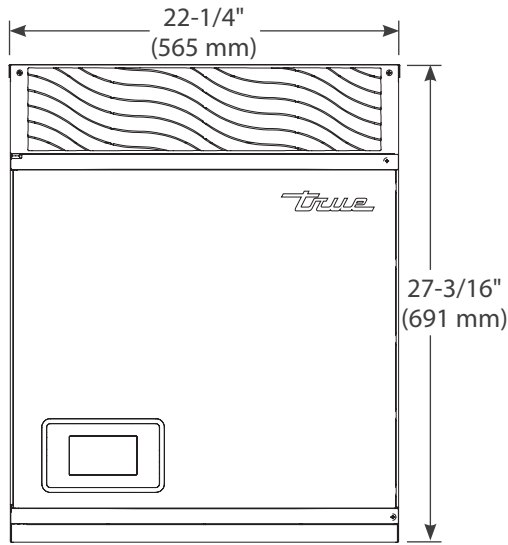
TCIM/TI-430/530/630



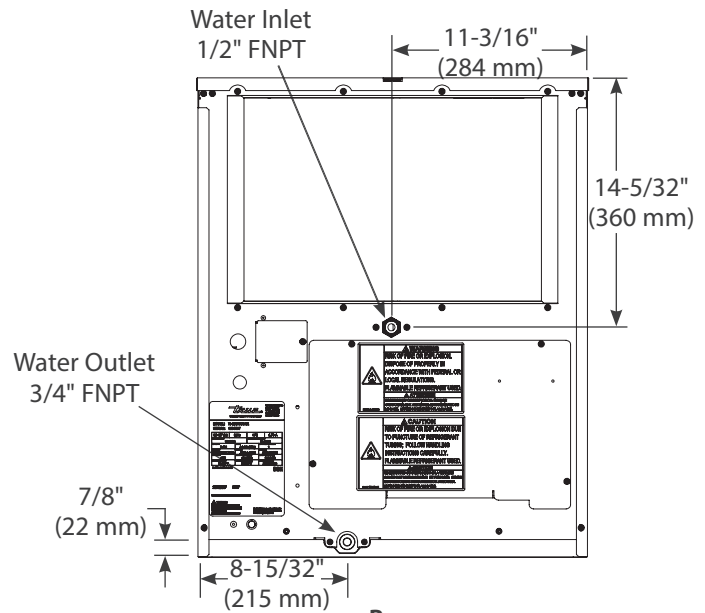
Dimensions may vary by ± 1/8" (3.2 mm)

Ice Machine Specifications (cont.)

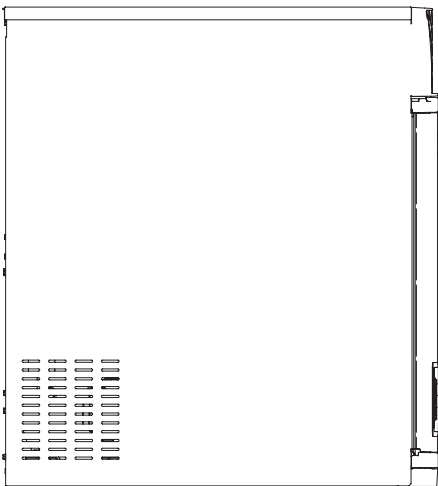
TCIM/TI-622



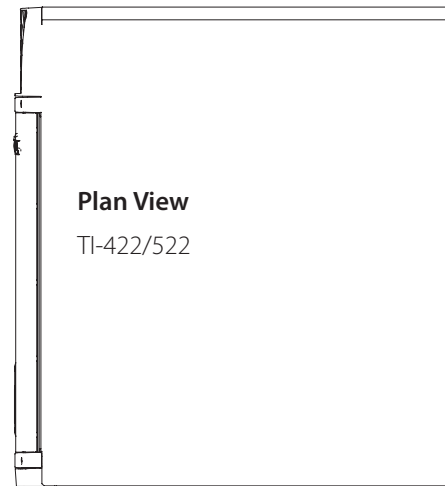
Front



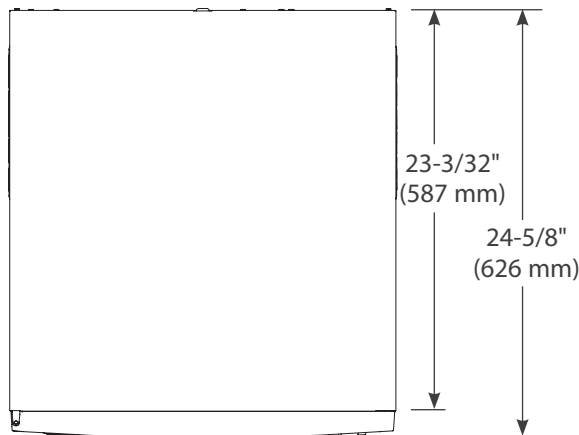
Rear



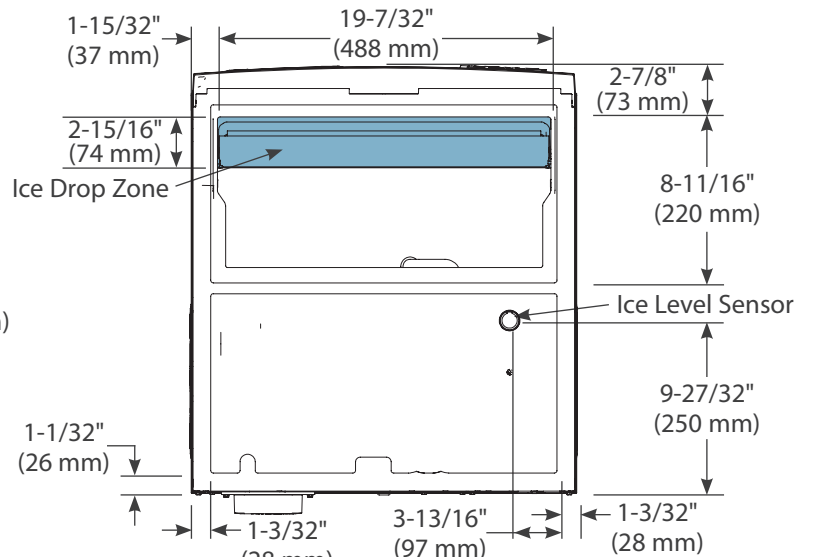
Left



Right



Top



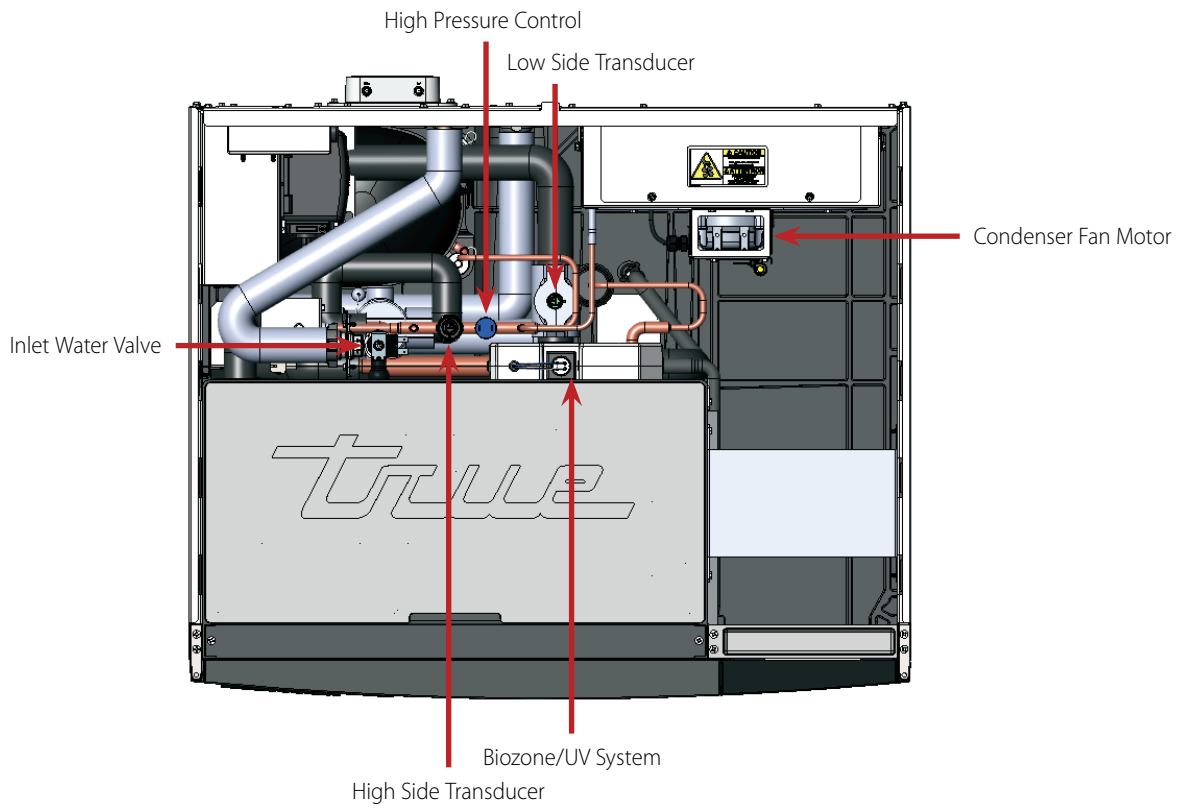
Bottom

Dimensions may vary by ± 1/8" (3.2 mm)

Component Identification

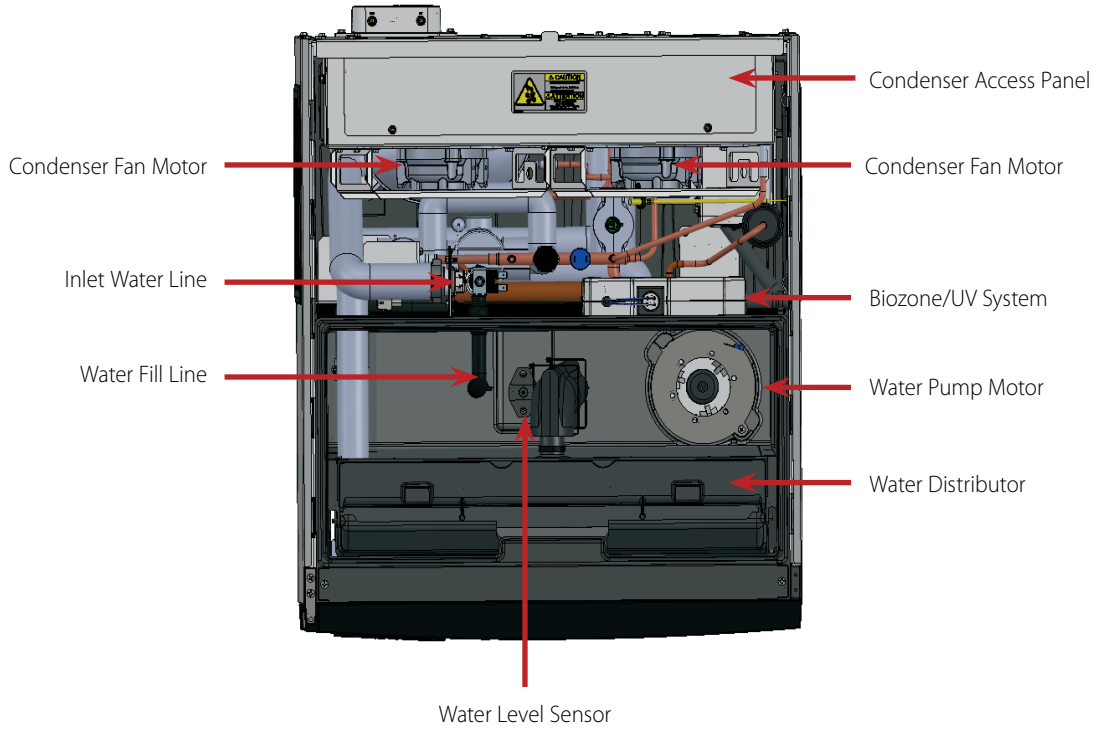
Component Identification

30" Top View

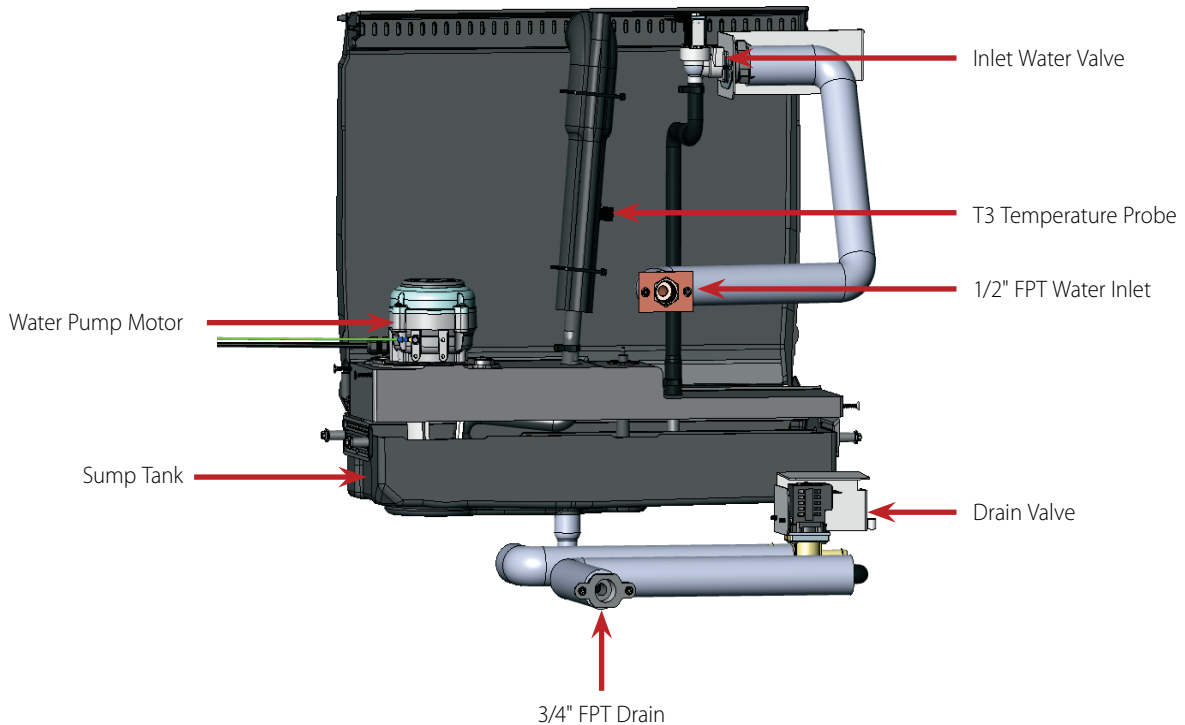


Component Identification (cont.)

22" Top View

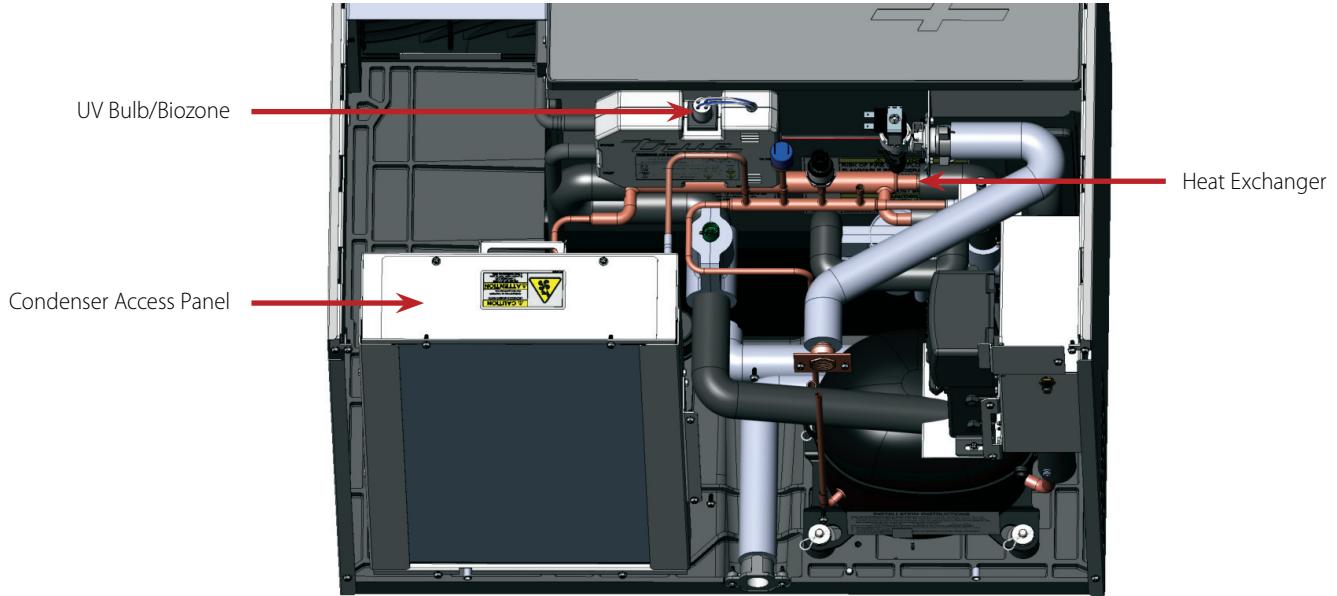


Water Circuit



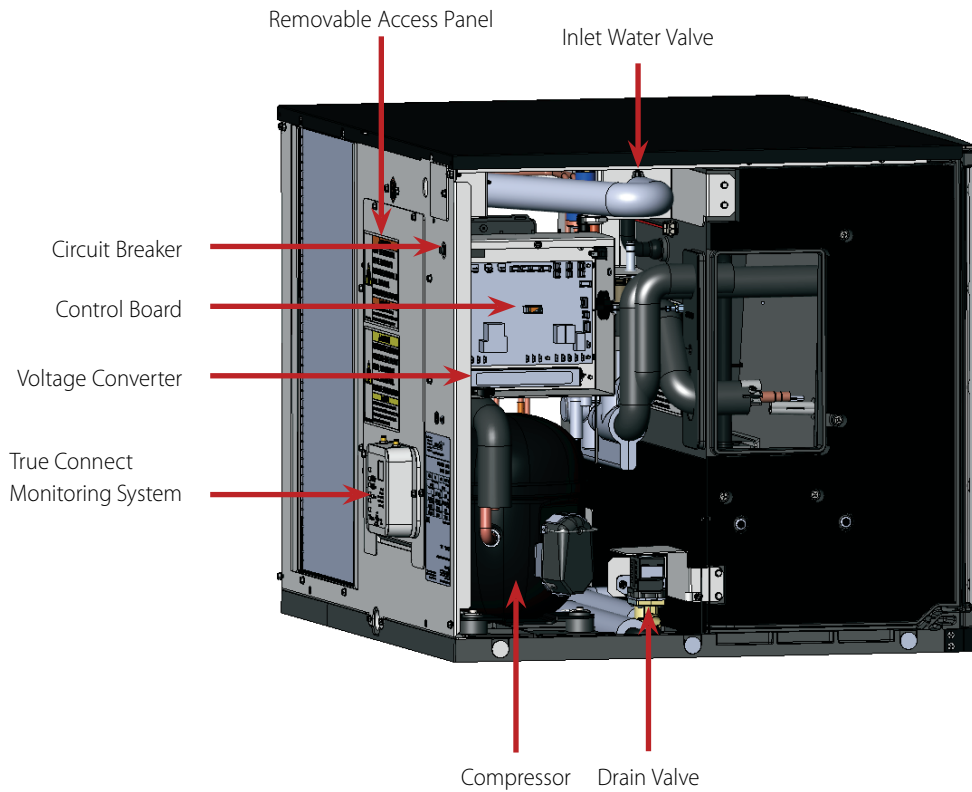
Component Identification

Heat Exchanger/UV Bulb



Electrical

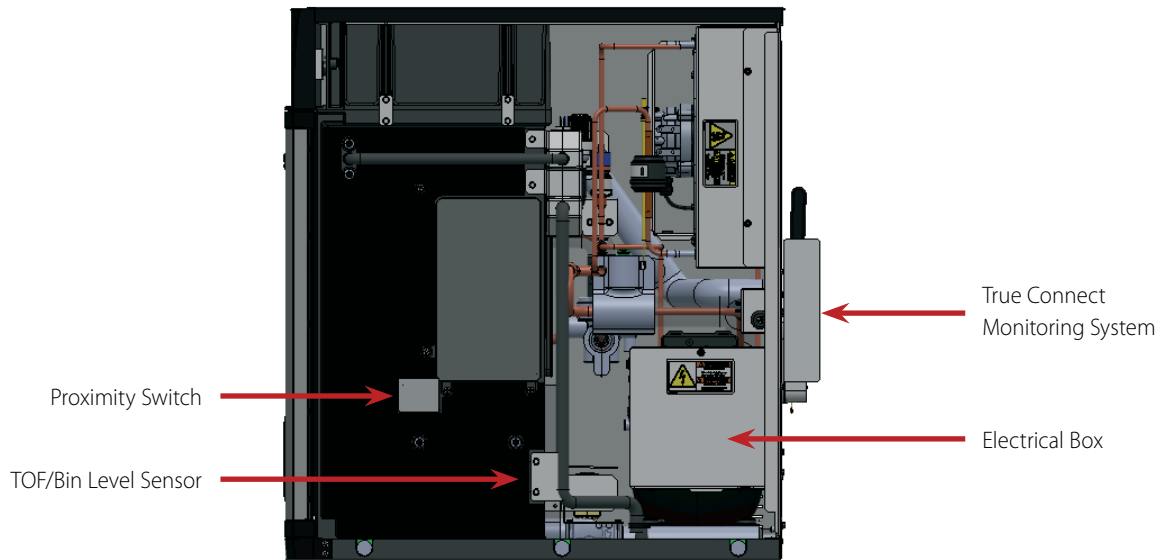
30" Electrical



Component Identification (cont.)

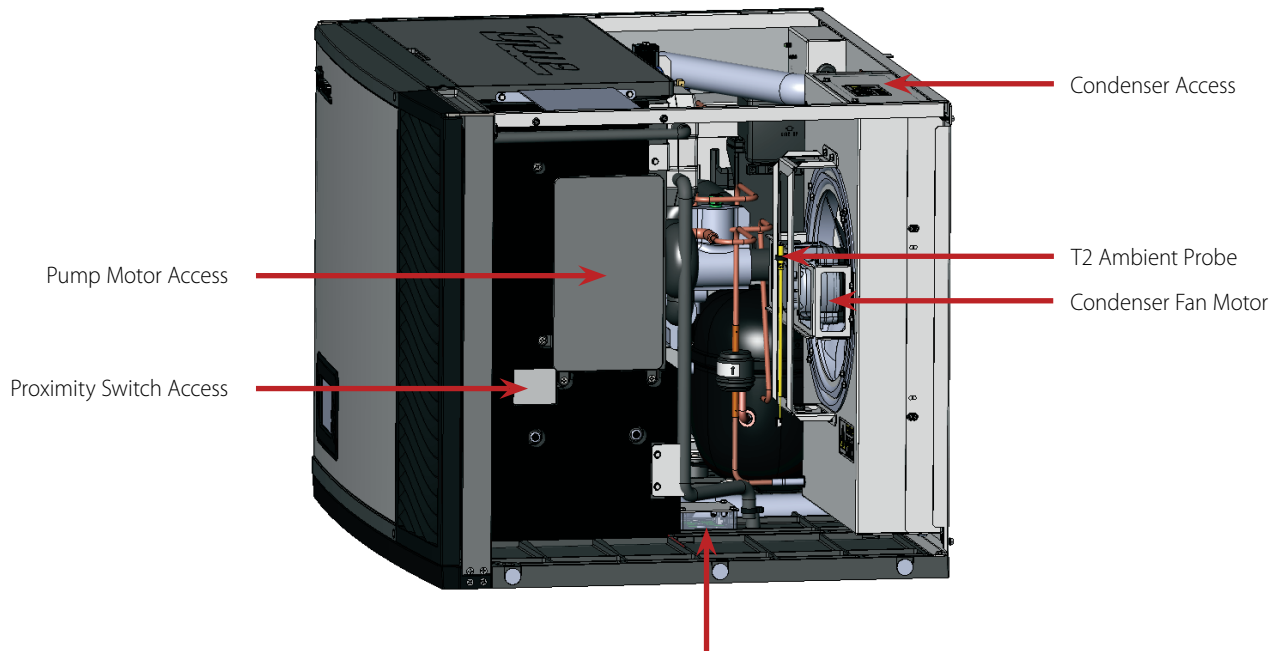
Electrical (cont.)

22" Electrical



Right Side View

Misc. Electrical

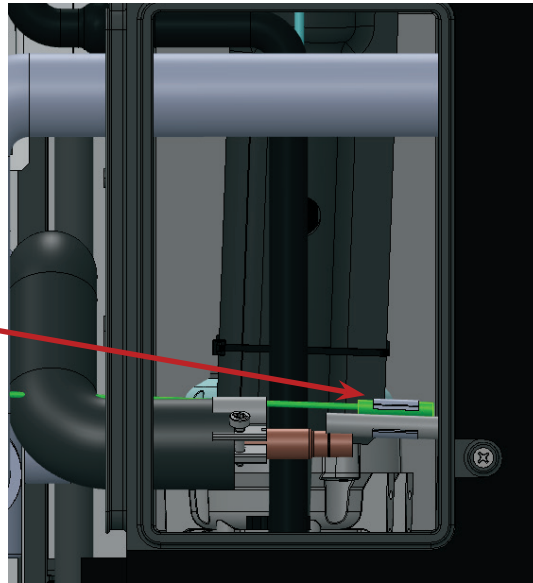


TOF/Bin Level Control

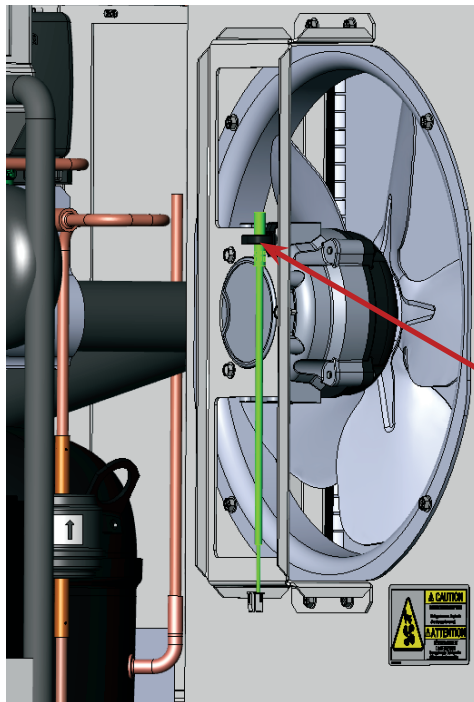
Component Identification

Temperature Probe Locations

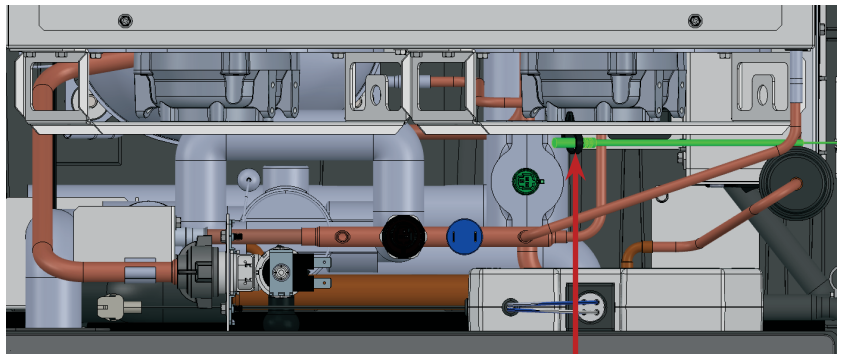
T-1 Temperature Probe
Located on the evaporator outlet



Left Side View



Right Side View



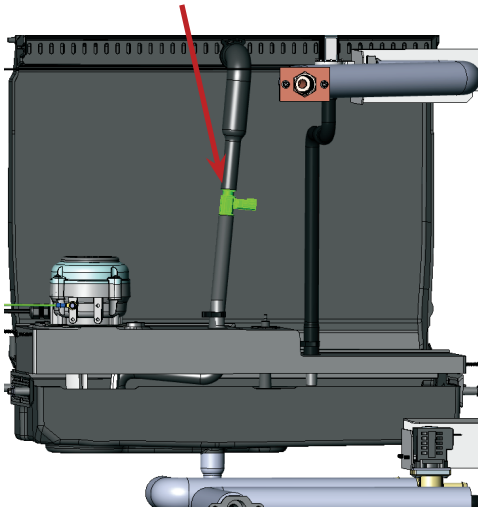
Top View

T-2 Temperature Probe
Located on the Condenser Fan Mounting Bracket
Reads ambient temperatures

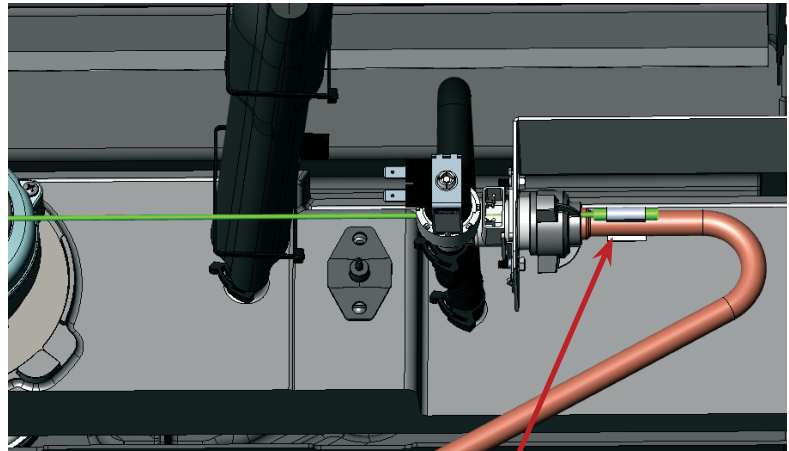
Component Identification (cont.)

Temperature Probe Locations (cont.)

T-3 Temperature Probe
 Located in the Distributer Water Supply Line.
 Used to measure Sump Tank water temps.



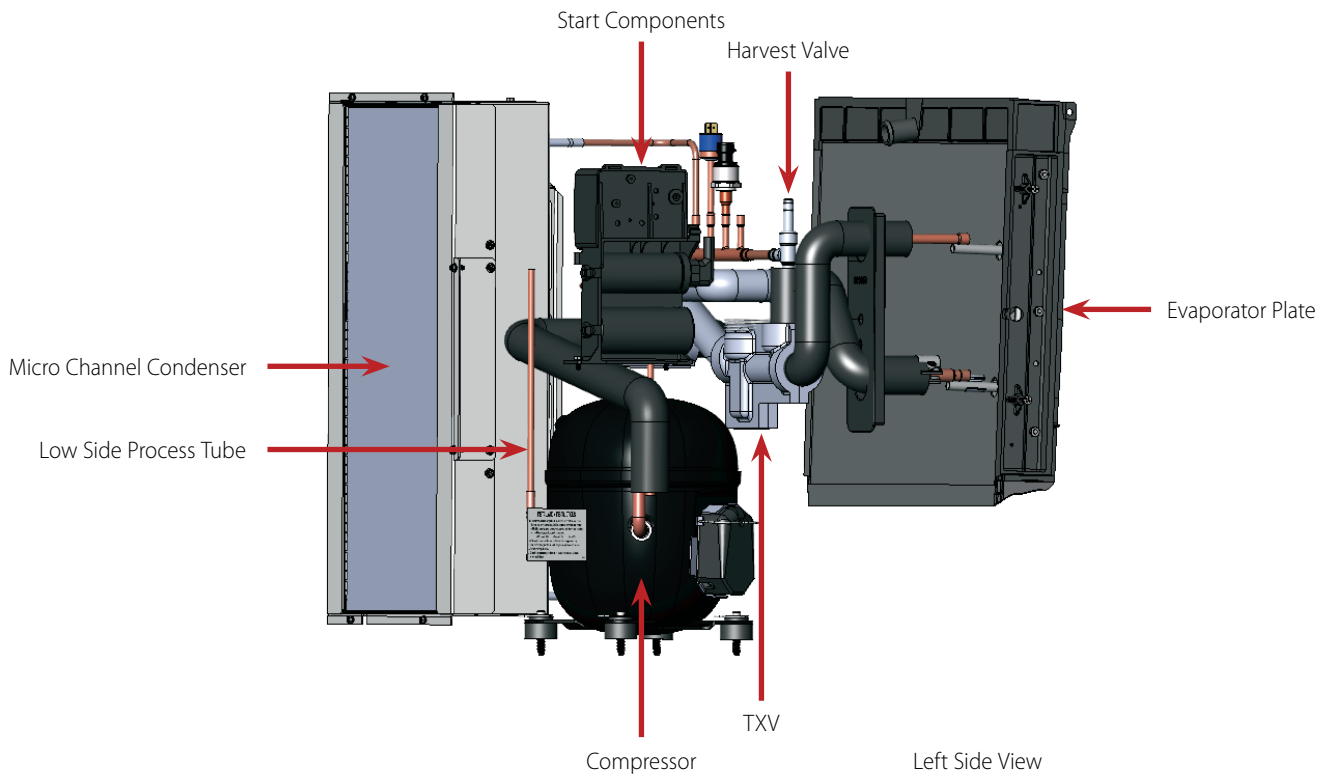
Rear View



Top View

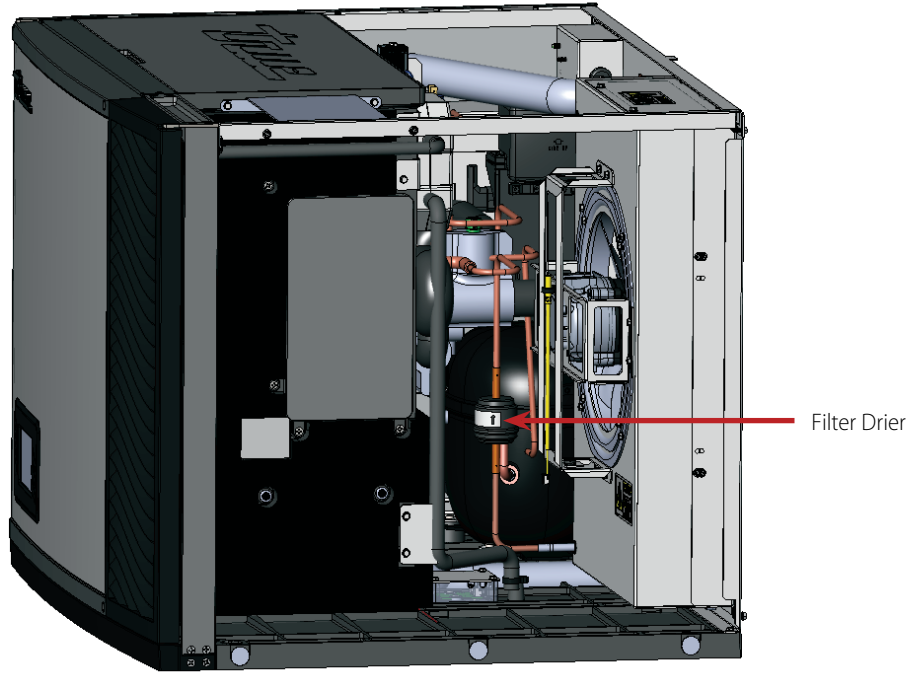
T-4 Temperature Probe
 Located on the Water Inlet Line.
 Used to measure incoming water temps.

Refrigeration System



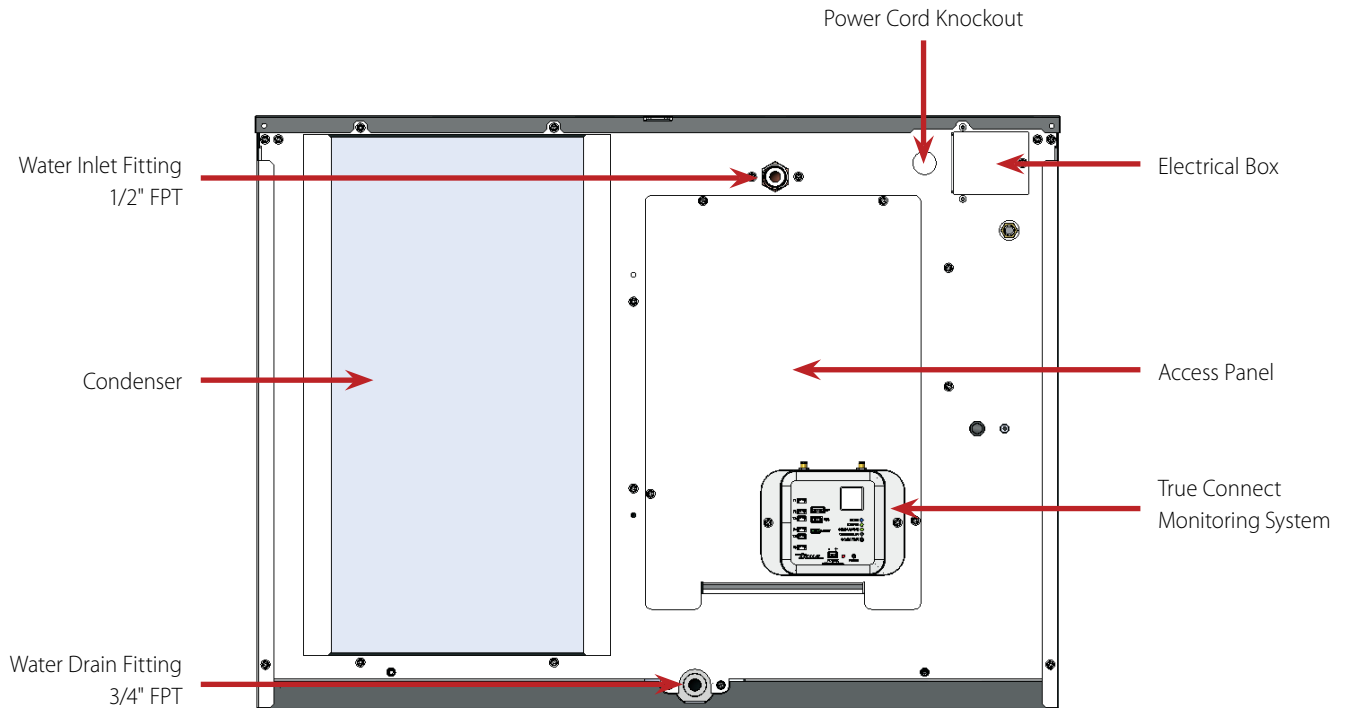
Component Identification

Refrigeration System (cont.)

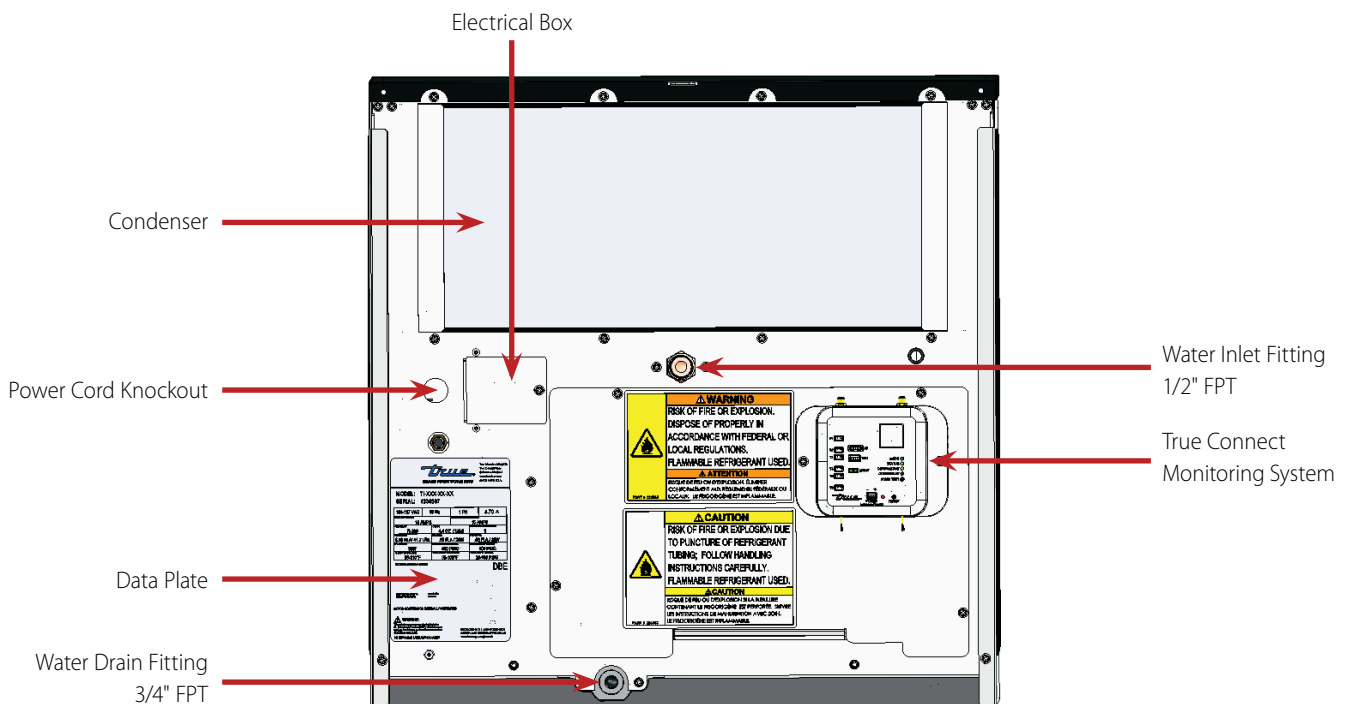


Component Identification (cont.)

Rear View 30"



Rear View 22"

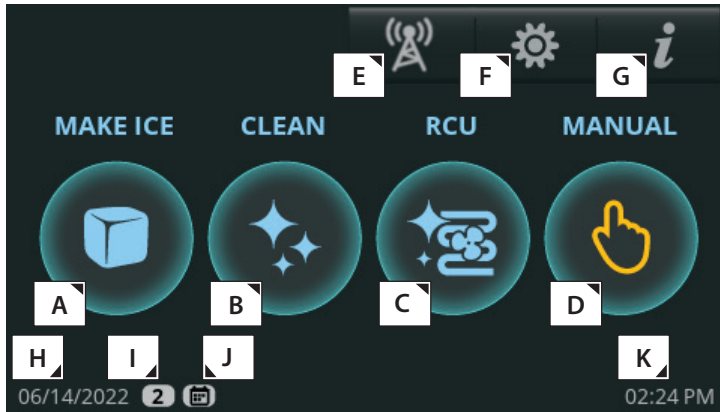


Display Modes and Operation

Display Modes and Operation

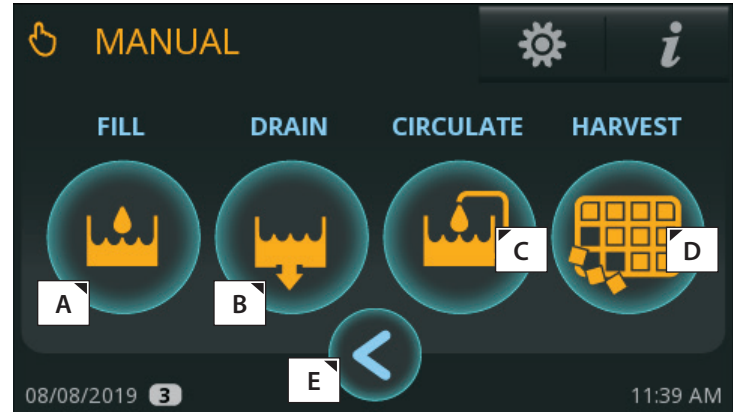
Home Screen

The default display screen.



Manual Screen

Allows for manual operation of the four modes pictured.



Parts of the main screen

A	Make Ice; Starts the Ice Making Sequence
B	Clean; Starts the Cleaning Sequence
C	RCU; Reverses Condenser Fan Motor(s)
D	Manual Options; Opens "Manual" Screen
E	Remote Monitoring; Displays Remote Monitoring QR Code
F	Menu; Opens "Menu" Screen
G	Info; Opens "Real Time" Screen
H	Current date
I	Indicates Setting Access Level. See Function Access Levels (pg. 39)
J	Scheduling is enabled
K	Current time

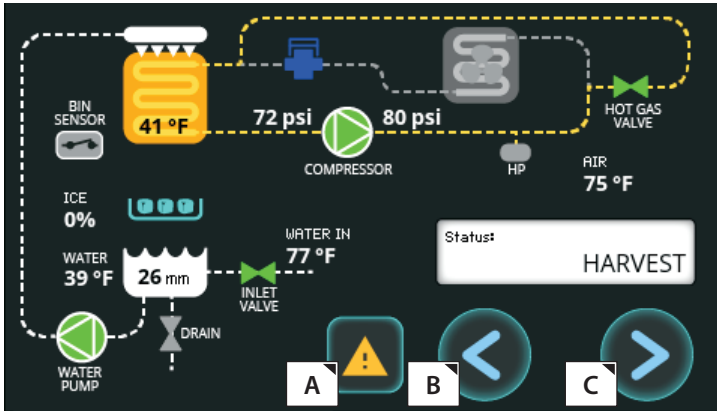
Parts of the manual screen

A	Fill; Allows for Manual Fill of Sump
B	Drain; Allows for Manual Drain of Sump
C	Circulate; Allows for Manual Water Circulation
D	Harvest; Allows for Manual Harvest
E	Back; Goes Back to Previous Screen

Display Modes and Operation (cont.)

Real Time Screen

Displays current status of ice machine sensors and components. Green indicates component is energized.

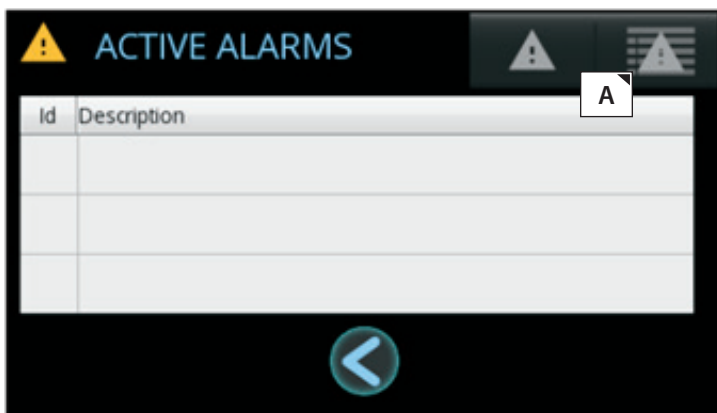


Parts of the REAL TIME screen

A	Access to Alarms
B	Back; Goes Back to Previous Screen
C	Forward; Access to Info Screen

Active Alarm Screen

Shows any alarms that are currently active.

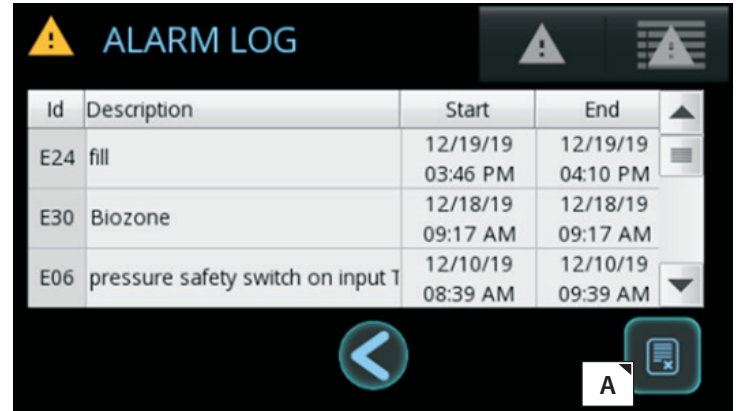


Parts of the ACTIVE ALARM screen

A	Access to Alarm Log
---	---------------------

Alarm Log Screen

Shows previous recorded alarms.

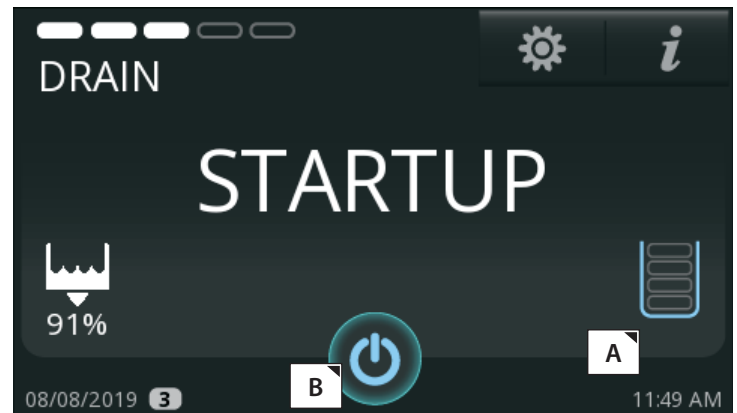


Parts of the ALARM LOG screen

A	Clears the Alarm Log
---	----------------------

Status Screen

Shows current mode of operation once the "Make Ice" icon is pressed.



Parts of the STATUS screen

A	Only Used with Bin Level Management Sensor (ToF)
B	Turns Ice Machine Off

Display Modes and Operation (cont.)

Menu Screen

The default display screen.



Info Screen



Parts of the menu screen

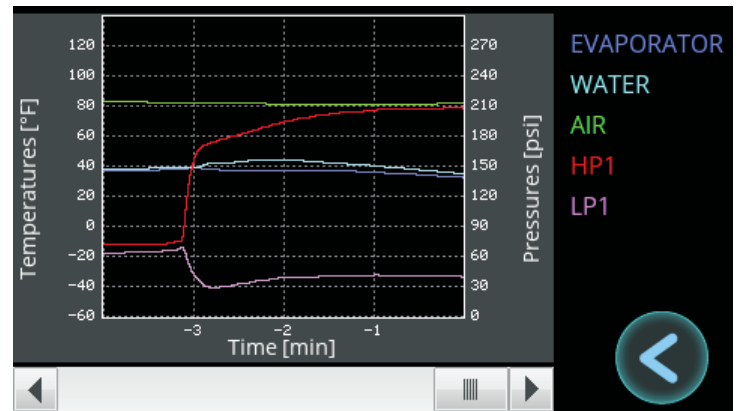
A	Password Protected Access Level Login
B	Set Language, Temperature Format, Time Format and Date Format
C	Set Schedule to Turn Ice Machine On and Off
D	Service Settings Screen; Parameter settings
E	Ice Thickness Adjustment
F	Set "Level of Water Hardness or Scale [SCA]"
G	Enable Use of Bin Level Sensor (ToF)
H	N/A
I	TrueZone™ Status (if so equipped)
J	Water Filter Selection
K	Preventative Maintenance Timers

Parts of the info screen

A	Real Time Graph
B	Daily Ice Level
C	Weekly Ice Level
D	Runtime Statistics
E	Cycle History
F	Ice Machine Information

Real Time Graph

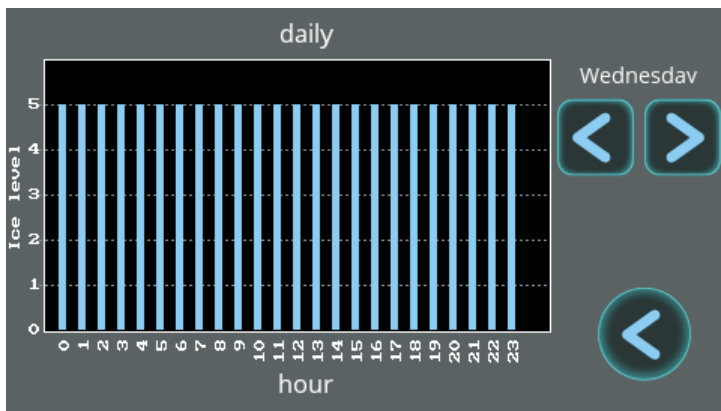
Graphs various temperatures and pressures over the last 24 min.



Display Modes and Operation (cont.)

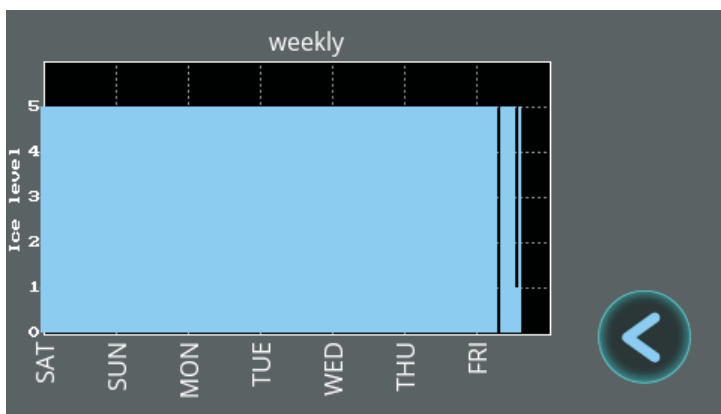
Daily Ice Level

Graphs the ice level over a 24-hour period.



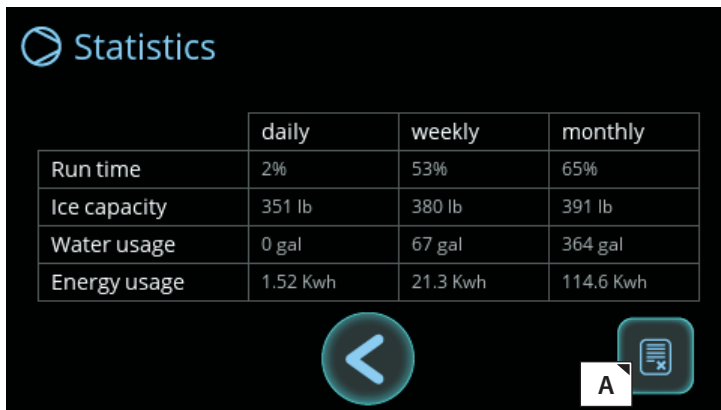
Weekly Ice Level

Graphs the ice level over the past seven days.



Runtime Statistics

Displays runtime percentage, ice capacity, and utility consumption over different periods of time.



Parts of the runtime statistics screen

A	Reset Statistics
---	------------------

Cycle History

Displays the last 5 freeze and harvest times.

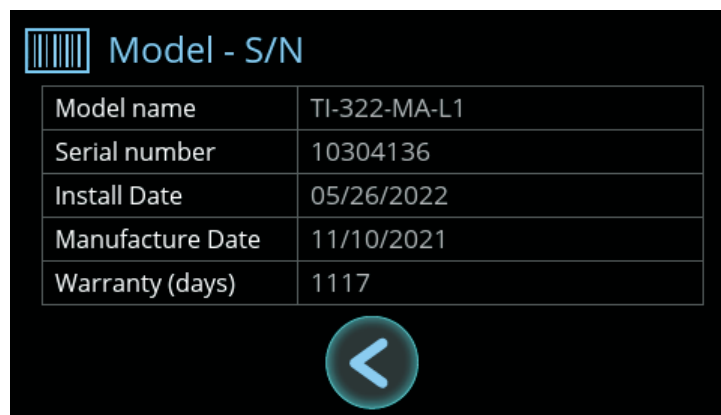


Parts of the cycle history screen

A	Reset Cycle History
---	---------------------

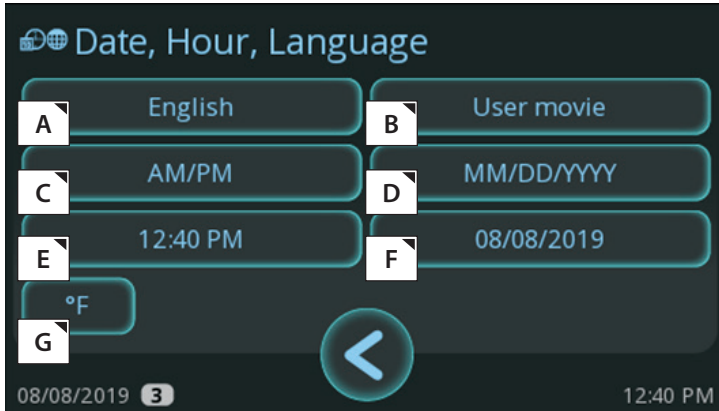
Ice Machine Information

Displays model name, serial number, install date, manufactured date, and warranty days remaining.



Display Modes and Operation (cont.)

Date, Hour, Language Screen



Parts of the date, hour, language screen

A	Change the language
B	Download an advertisement to be shown after inactivity
C	Change between 12-hour and 24-hour format
D	Change the date
E	Change the time
F	Change between MM/DD/YYYY and DD/MM/YYYY
G	Change between Fahrenheit and Celsius

Ice Machine Adjustments

Ice Machine Adjustments

Access Codes

There are four access levels: USER (0), ADMIN (1), ADMIN (2), and ADMIN (3). The USER (0) level is designed with your customer in mind. It allows them to see the mode of operation and screen saver but restricts any function that would affect the ice machine. The ADMIN (1) level is for the ice machine owner. ADMIN (2) is for qualified service technicians and ADMIN (3) is restricted to the manufacturer.

Ice Machine Adjustments (cont.)

Function Access Levels

Function access levels				
Functions	Sub-Functions	USER (0)	ADMIN (1)	ADMIN (2)
MAKE ICE	Turning the ice machine ON or OFF		X	X
CLEAN			X	X
RCU	Reverse Condenser Fan		X	X
MANUAL	FILL		X	X
	DRAIN		X	X
	CIRCULATE		X	X
	HARVEST		X	X
MENU	Date, Hour, Language		X	X
	SCHEDULING		X	X
	Parameters			Limited
	Ice Thickness [BIG]		X	X
	Levels of water hardness or scale [SCA]		X	X
	Ice Level Sensor [TOF]			X
	Light (N/A)			
	UV info			X
	Water Filter			X
	Counters/Reminders			X
Information Screen	Temperature and Pressure Graph			X
	ACTIVE ALARMS			X
	ALARM LOG			X
	Statistics			X
Touching Screen to Hide Screen Saver		X	X	X
Touching Screen to Silence Alerts		X	X	X

Ice Machine Adjustments (cont.)

Adjust Ice Thickness

Watch at least three cycles and confirm that the bridge thickness is correct, (approximately 1/8" (3.18 mm) as shown in fig. 1). The bridge thickness is set at the factory. To adjust, please see instructions below.

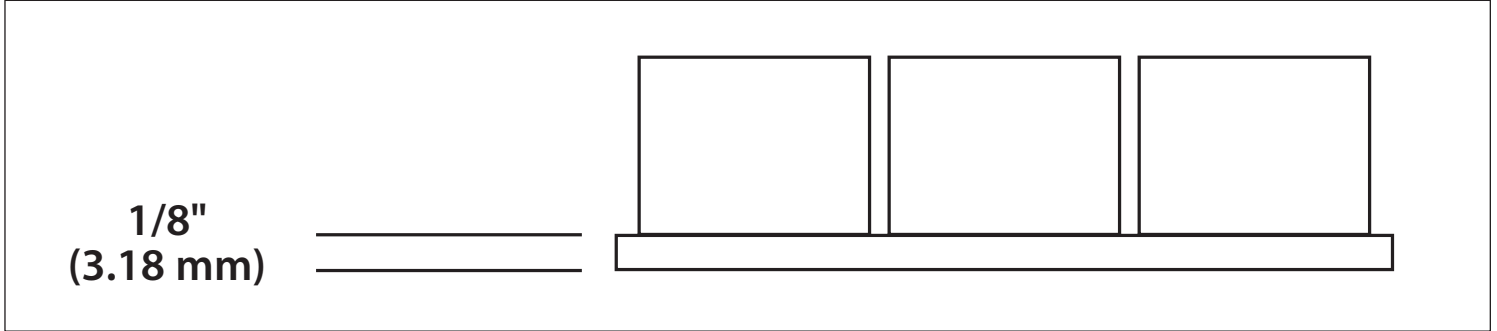


Fig. 1. The ice bridge holds the ice cubes together.

1. In the upper right corner of the screen, press Menu



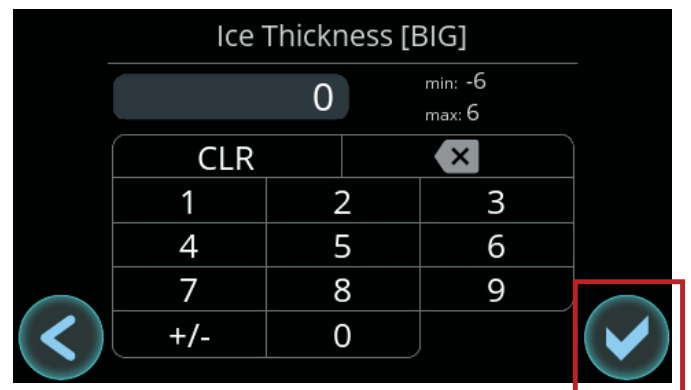
2. In the Menu screen, press Ice Thickness



3. In the **Ice Thickness** screen, adjust the ice size as needed. The ice machine is factory-set at 0 for the optimal production of pounds of ice per day.
 - For thinner ice, press the +/- key and enter a number 1-6. -6 is the thinnest setting.
 - For thicker ice, enter a number 1-6. 6 is the thickest setting.



4. After setting the ice size, press okay. The display will return to the **MENU** screen.



Ice Machine Adjustments (cont.)

Adjust Water Quality (purge adjustment)

The water quality setting allows your ice machine to easily accommodate different levels of water quality/hardness/scale.

The available settings range from 0 (soft water/low scale) to 5 (hard water/high scale). See fig. 1.

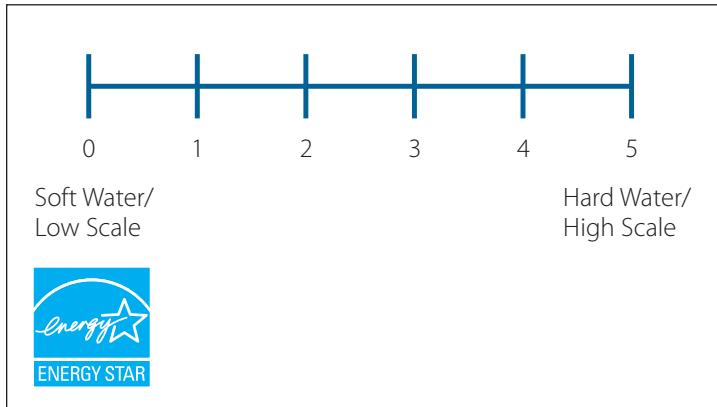


Fig.1. Water quality setting range.

The unit default setting is 0 to maintain energy star operation. If you are unsure of your water quality, check your water with a water quality test kit (not provided by True).

Increasing the “levels of water hardness or scale” setting increases the amount of water flushed during harvest. It also decreases the number of continuous cycles needed before the unit returns to startup, which allows the unit to drain the heavily mineralized water and replaces it with fresh water.

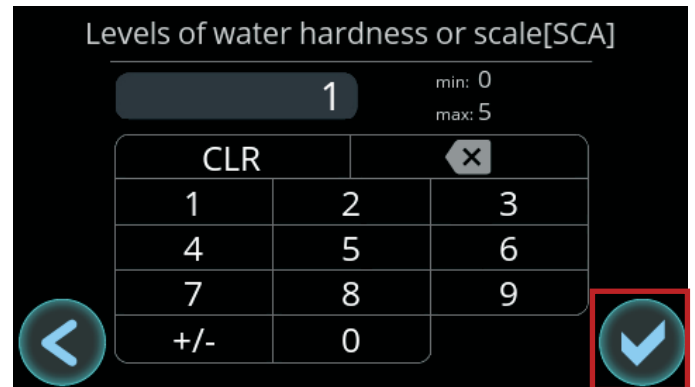
1. In the upper right corner of the screen (where it appears), press Menu



2. In the **Menu** screen, press Set Water Hardness or Scale



3. In the **Levels of water hardness or scale** screen, enter the desired setting, and then press okay



Ice Machine Adjustments (cont.)

Adjust Ice Level Sensor (Time of Flight)/Bin Level

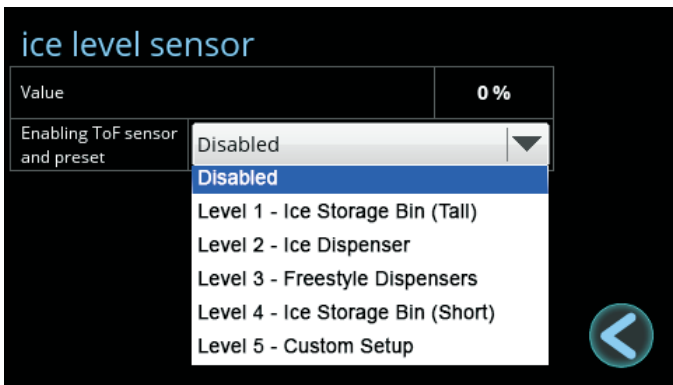
1. In the upper right corner of the screen, press Menu .



2. In the **Menu** screen, press TOF.



3. In the **Ice level sensor** screen, select the appropriate preset value for your ice storage unit. Select custom if no preset value meets your application needs. See preset values in the ice level sensor presets table.



Ice Machine Adjustments (cont.)

Adjust Ice Level Sensor (Time of Flight)/Bin Level (Cont.)

Ice level sensor presets

	Full Bin Distance (FBD)	Empty Bin Distance (EBD)	Full Bin Ice Threshold (PBD)	PBH*
Level 1 - Ice Storage Bin (Tall)	15 cm	120 cm	100	10
Level 2 - Ice Dispenser	20 cm	60 cm	90	10
Level 3 - Freestyle Dispensers	25 cm	75 cm	85	10
Level 4 - Ice Storage Bin (Short)	30 cm	85 cm	100	10
Level 5 - Custom Setup (default settings)	20 cm	95 cm	100	10

*Hysteresis; a percentage of how much above or below the set point before an activation. Default value is 10%.

Custom Setup

Press the values to open the number pad. Enter the desired setting and press OK.

- Full Bin Distance (FBD) is the distance in centimeters between the sensor and the ice when the machine enters the FULL BIN state with the damper held down. See fig. 1.
- Empty Bin Distance (EBD) is the distance in centimeters between the sensor and the bottom of the ice storage unit. See fig. 1.

NOTICE > True recommends only adjusting EBD.

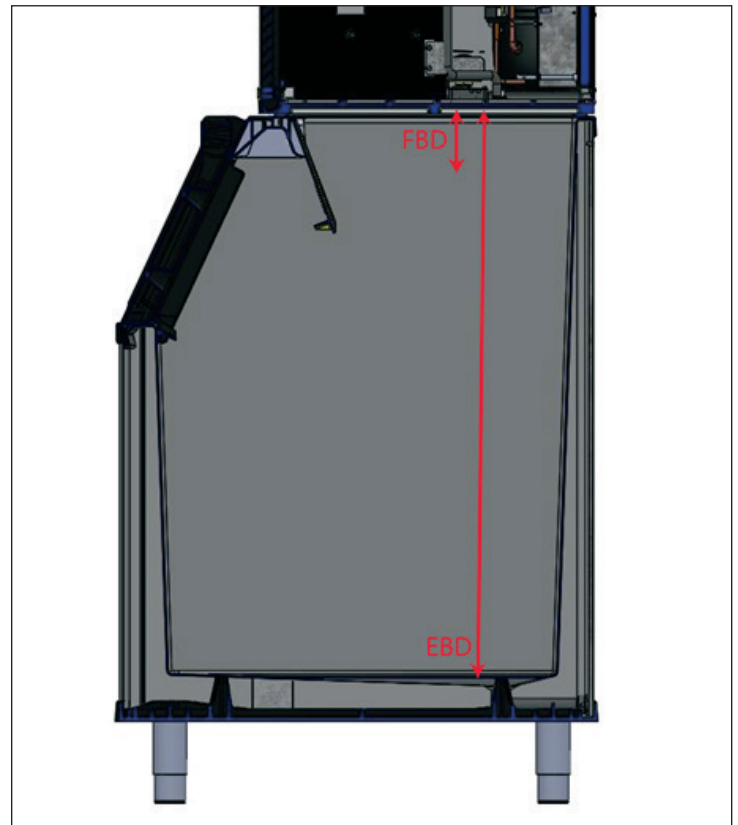
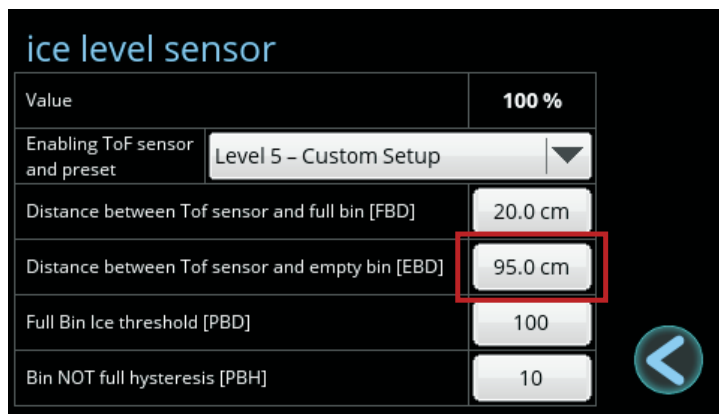


Fig. 1. FBD vs. EBD.

Ice Machine Adjustments (cont.)

Water Filter Setup

True recommends water filters for all ice machines. Water filters help remove particulate that reduces operating efficiency and equipment life. Regularly changing water filters is essential for optimum-quality ice, reduced maintenance, and prolonged equipment operation.

To set up your water filter, see the following instructions.

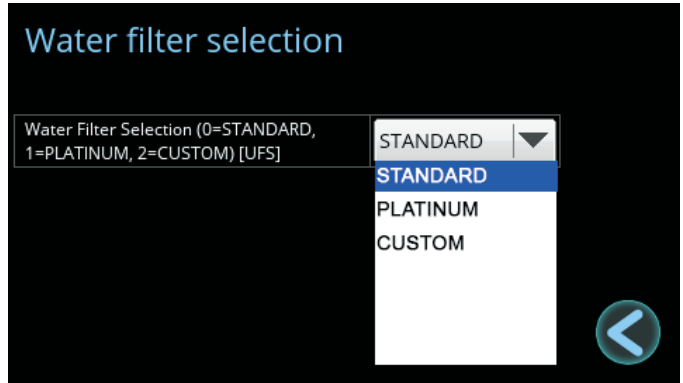
1. In the upper right corner of the screen, press Menu .



2. In the **Menu** screen, press **Water Filter**.



3. In the **Water Filter** screen, select the appropriate water filter for your application. True offers Standard and Platinum water filtration systems. If using a non-True water filter, enter the water capacity under **CUSTOM**. See filter capacities in the water filter capacities table.



Filter Type	Capacity
Standard	14,000 gal (52,996 L)
Platinum	35,000 gal (132,490 L)
Custom (default)	10,000 gal (3,7854 L; adjustable)

Reminder Settings

There are three reminders that can be adjusted:

- Evaporator cleaning (Descale/Sanitize)
- Air filter/condenser cleaning
- Water filter (also see "Water Filter Setup", pg. 44)

1. In the upper right corner of the screen, press Menu .



Ice Machine Adjustments (cont.)

2. In the **Menu** screen, press Parameter Settings 



3. With the scroll bar, scroll to the desired parameter:

- #17: Evaporator cleaning reminder
- #21: Air filter/condenser cleaning reminder
- #24: Water filter reminder

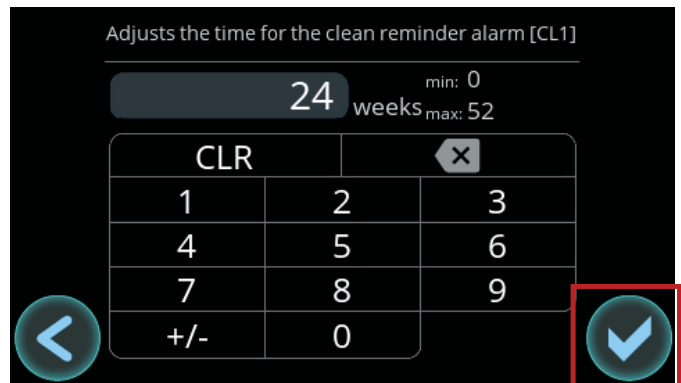
Description	Value
16 Toggles the Cleaning Reminder (0=OFF, 1=ON) [CLN]	1
17 Adjusts the time for the clean reminder alarm [CL1]	24 weeks
18 Resets clean reminder counter (0=OFF, 1=ON) [CL2]	0
19 Toggle option to turn Reverse Fan Condenser Cleaning (0=OFF, 1=ON) [RCU]	1
20 Toggles the Filter Reminder (0=OFF, 1=ON) [FLT]	1

Description	Value
21 Adjusts the time for the filter reminder alarm [FL1]	3 months
22 Resets filter reminder counter (0=OFF, 1=ON) [FL2]	0
23 Toggles the Water Filter Reminder (0=OFF, 1=ON) [UFL]	1
24 Adjusts the ice quantity for the Water Filter reminder alarm [UF1]	10000 gallons
25 Resets Water Filter reminder counter (0=OFF, 1=ON) [UF2]	0

4. Press anywhere on the desired parameter's row. Then, with the number pad, enter the desired setting.

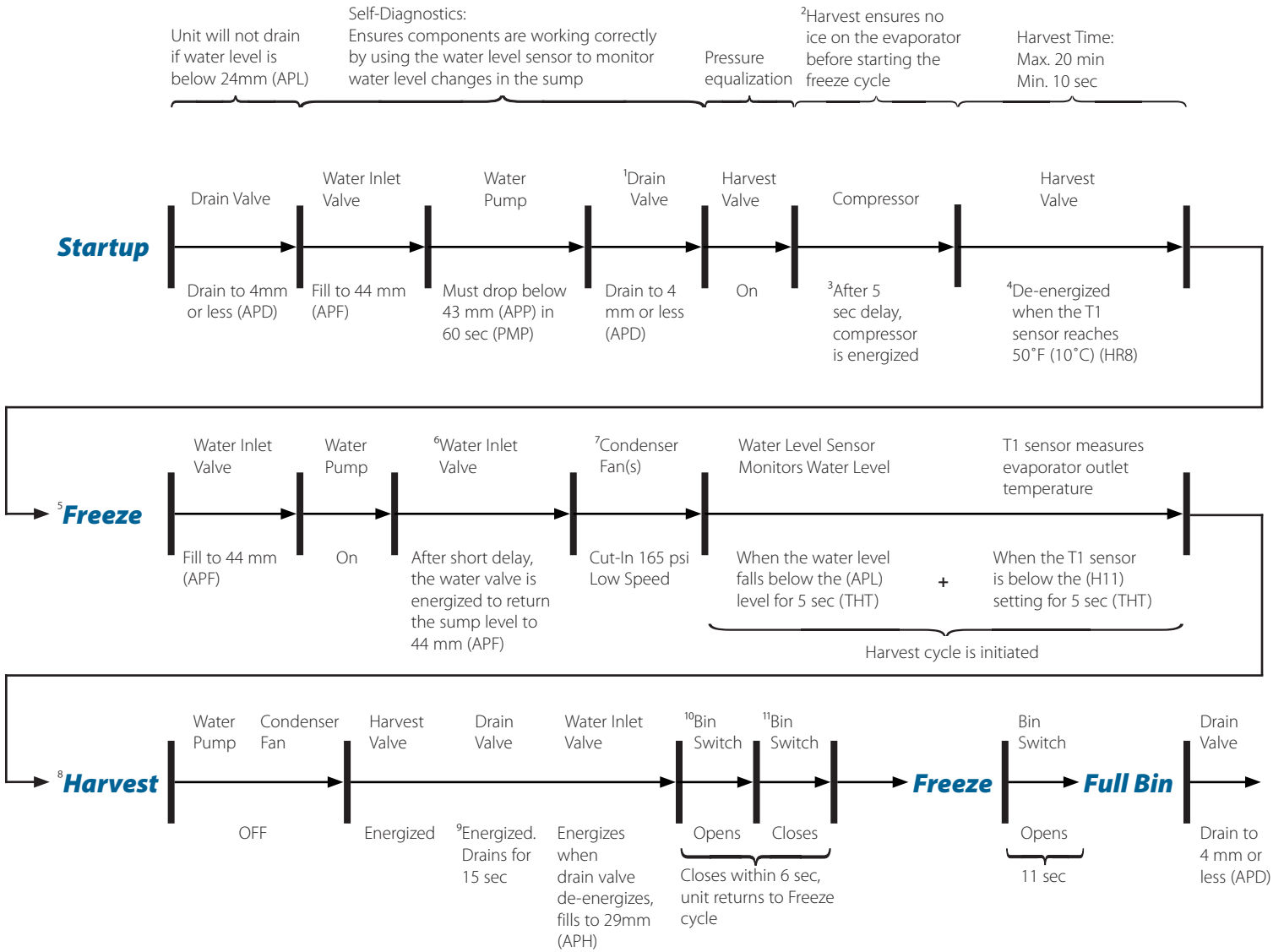


5. Press okay.



Sequence of Operations

Sequence of Operations



¹For low ambient protection. If T2, T3, or T4 are less than 30°F (-1.1°C) (HL1), the unit will not drain at this point.

²Start up Mode Only. Max Harvest Time: 20 min, Min Harvest Time: 10 sec.

³Compressor is energized until the bin is full or 30 consecutive cycles (Factory setting, level of water hardness set to 0). After 30 consecutive cycles, the unit will return to the Startup Cycle.

⁴T1= Evaporator outlet, T2= Ambient air temperature, T3= Pump outlet water temperature, T4= Incoming water temperature

⁵Max. Freeze Time = 30 min, Min. Freeze Time = 5 min

⁶Water Inlet Valve will fill an additional time after the pump motor has started. Will fill to 46 mm (APF)

⁷Condenser Fan(s)
PS1 = 160psi Low Ambient (No Condenser Fan)
PS2 = 165psi Normal/Low Speed
PS3 = 230psi High Speed

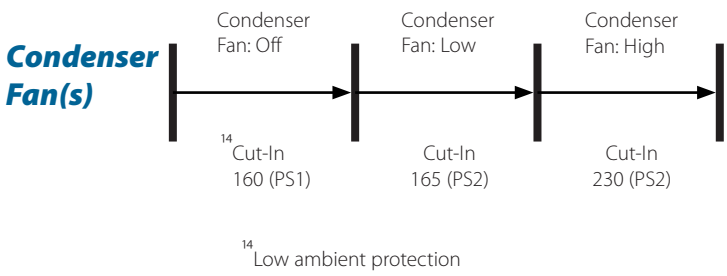
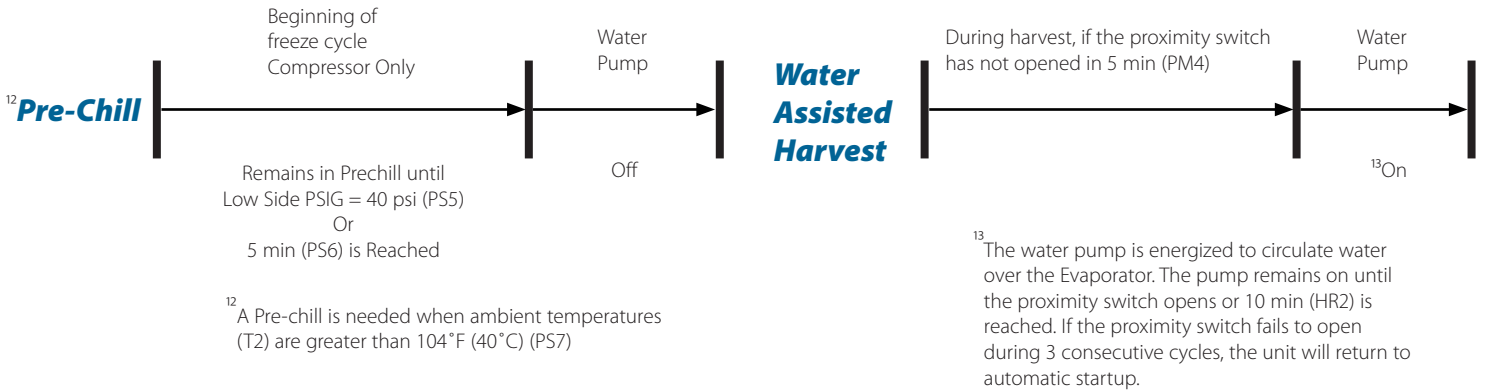
⁸Max. Harvest Time = 10 min, Min. Harvest Time = 30 sec

⁹Drain time can be increased by adjusting the "Level of Water Hardness" in the menu. Each increment increases drain time by 15 sec.

¹⁰Low Ambient Harvest. If T2 or T4 sense a temperature < 30°F (-1.1°C), when the Bin Flap closes this will not terminate Harvest. Fill valve and water pump will run until the sump is filled to the (APF) setting. This will terminate harvest (water pump will remain on).

¹¹If the Harvest time reaches 5 min and the bin switch has not opened, the water pump will be energized to circulate water of the ice until the sheet falls. **Note:** Max harvest is 10 min.

Sequence of Operations (cont.)




Maintenance & Cleaning

Maintenance & Cleaning

Recommended Maintenance Schedule

The maintenance schedule below is a guideline. More frequent maintenance may be required depending on water quality, environment, and local sanitation regulations.

Recommended cleaning schedule		
Recommended Maintenance Schedule		
Frequency	Component	Task
Daily	Ice Scoop	Clean with sanitizer or neutral cleaner and rinse thoroughly.
Monthly	Air Filter	Inspect and wash with warm water and neutral cleaner if dirty.
	Water Filter	<ul style="list-style-type: none"> • Check the "Water Filter Usage" counter in the "Counters"  section in the "MENU" screen. • Check for proper outlet pressure and change if less than 20 psig (138 kPa)
	Ice Machine and Bin Exterior (or dispenser, if applicable)	<ul style="list-style-type: none"> • Wipe surfaces with a damp cloth rinsed in water to remove dust and dirt from the outside of the ice machine and bin. For greasy residue use a damp cloth rinsed in a mild dish soap and water solution. Wipe dry with clean, soft cloth. • The exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels.
Quarterly	Ice Machine	Preventative Maintenance Descaling and Sanitizing Procedure.
Bi-Annually	Ice Machine and Bin (or dispenser, if applicable)	Descaling and Sanitizing Procedure.
As Directed by Service Professional	Air Cooled Condenser	In areas with airborne contaminants (i.e. grease), chemical cleaning of the condenser will be required. This should only be done by a service professional. See "Condenser Coil Cleaning" (pg. 57).

Maintenance & Cleaning (cont.)

Panel Removal

1. Remove the front panel screws. Then, open the front panels. See fig. 1.

NOTICE > Panels cannot be removed without opening the front panels.

2. Carefully lift the front of the top panel. Then, slide the top panel towards the ice machine's rear and lift the panel. See fig. 2.
3. Remove the side panel's rear screw. See fig. 3.
4. Unfasten the side panel's bottom fasteners. Then, lift the side panel. See fig. 4.



Fig. 1. Front panel screw locations.

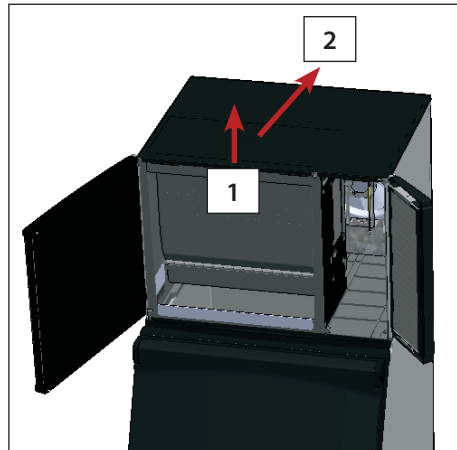


Fig. 2. Lift the front edge, slide the top panel back, then lift to remove.

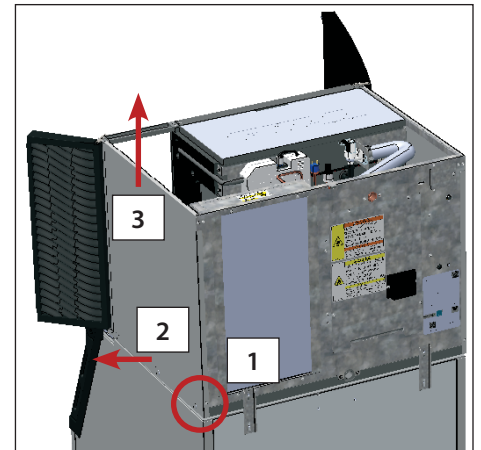


Fig. 3. Remove the screw, pull panel from adhering tabs, then lift to remove.

Maintenance & Cleaning

Sump Tank Removal

1. Open the front panel. See "Panel Removal" (pg. 49).
2. Remove the water curtain and the damper. See fig. 1.
3. Remove the drain fitting under the sump tank. See fig. 2.
4. Remove the sump tank.

NOTICE > DO NOT damage the water level sensor (see fig. 3) when removing the sump tank.

- a. Pull the sump tank's center forward (see fig. 4). The tank will flex away from the walls.
- b. Push the sump tank's center down.
- c. Tilt the sump tank's front upward and the back downward. See fig. 5.
- d. Pull the sump tank free from the appliance.

NOTICE > To reinstall the sump tank, follow the above procedure in reverse. Always remember to reinstall the drain fitting under the sump tank. See fig. 2.

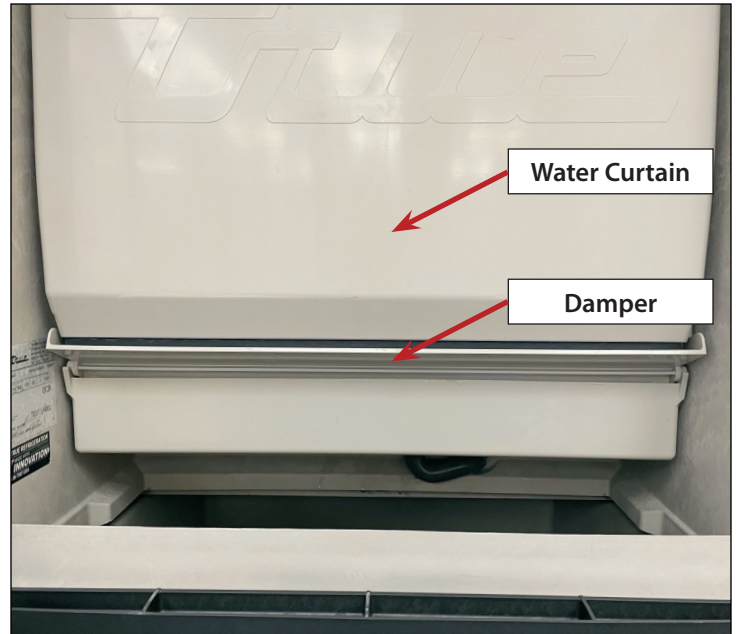


Fig. 1. Water curtain and damper locations.



Fig. 2. Sump drain fitting locations.

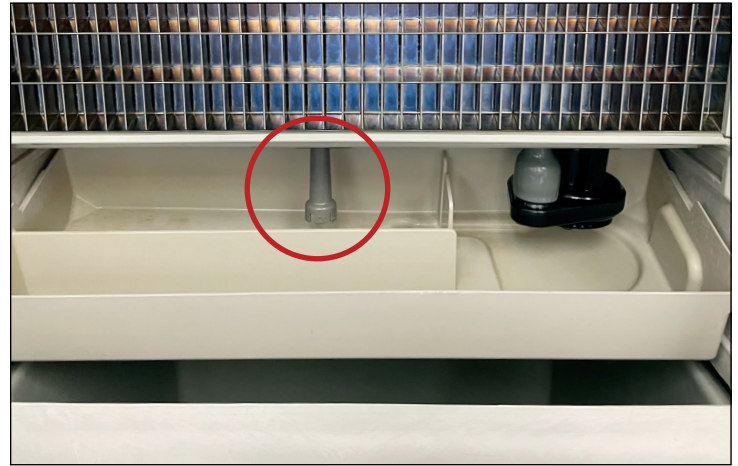


Fig. 3. Water level sensor location



Fig. 4. Pull the sump tank forward and push down.

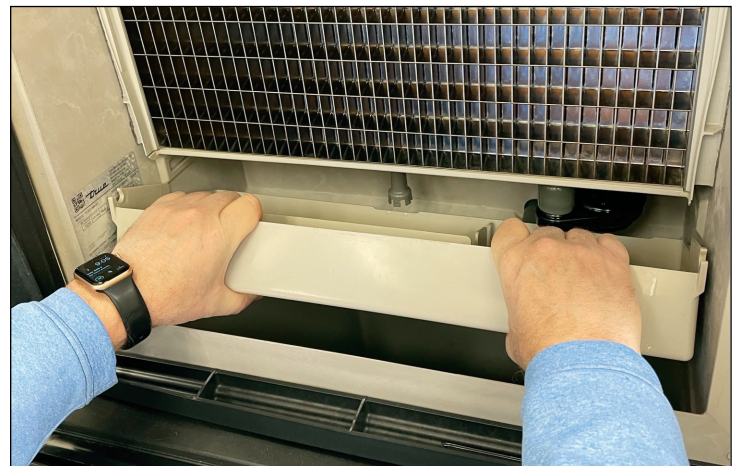





Fig. 5. Tilt the sump tank and then remove it.



Maintenance & Cleaning (cont.)


Recommended Descaling and Sanitizing Procedures

⚠ DANGER!


  	<p>HIGHLY CORROSIVE CLEANING CHEMICALS.</p> <p>AVOID CONTACT WITH EYES AND SKIN. WEAR EYE PROTECTION AND RUBBER GLOVES WHEN HANDLING.</p>
---	--

⚠ WARNING!

	<p>Toxic material hazard!</p> <p>DO NOT MIX DESCALER WITH SANITIZER. Harmful fumes may be generated.</p>
	<p>Optical radiation hazard! UV light!</p> <p>Invisible laser radiation. Do not look directly at light. Always disconnect power before servicing the lamp.</p>

	<p>⚠ CAUTION</p> <p>CLASS 1 LASER PRODUCT Invisible Laser Radiation When Opened. Disconnect Power Before Servicing</p>
	<p>⚠ ATTENTION</p> <p>PRODUIT LASER DE CLASSE 1 Rayonnement Laser Invisible à l'ouverture. Couper l'alimentation avant entretien.</p>
<p>PART # 819871</p>	

ⓘ USER ACTION!

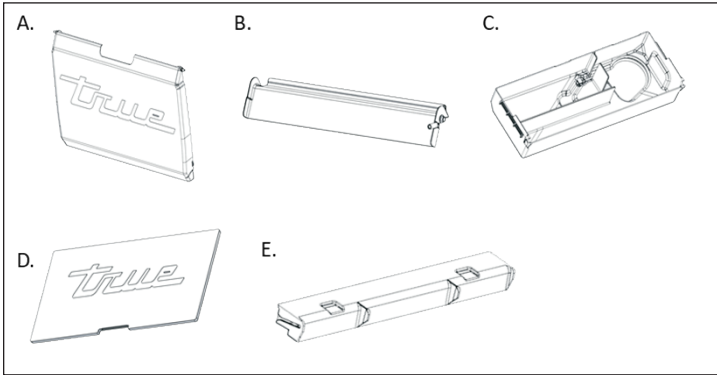
	<p>TRUE recommends using TRUE Ice Machine Descaler. To purchase, contact TRUE Parts Department at 800-424-8783 or PartsInquiries@TrueMFG.com.</p> <p>If using a non-True descaler (Nickel-safe) recommended dilution for soaking parts is 3 fl oz (88.7 mL) per 1 gal (3.78 L) and recommended amount for evaporator cleaning is 6-8 fl oz (177.4-236.6 mL).</p> <p>Use of non-recommended descaler may void warranty.</p>
---	--

There are three descale and sanitize cycles.

Cycle	Time
Preventative Maintenance	10 min
Standard	20 min
Heavy	30 min

Maintenance & Cleaning

Parts Removal



A. Water Curtain: Remove by placing one hand over the top lip of the curtain and the other hand on the side of the curtain. Gently flex the curtain on the side toward the center while gently pulling the top outward.

B. Damper: Remove by pushing the damper down until horizontal, pull forward gently until it stops and then push down until it stops and pull forward.

C. Sump: Reach under the sump and pull off the drain hose. Then place fingers between the left or right bulkhead wall and the side of the sump. Place the other hand over the lip of the sump. Push the sump with your fingers toward the opposite bulkhead wall while pulling the sump in the same direction with your hand until it comes out of the snap bracket. Repeat the process on the other side and remove the sump.

D. Evaporator Area Cover: Remove by pushing up from the inside of evaporator section.

E. Water Distributor: Remove by grabbing the two distributor tabs and lifting up slightly then pull forward.

Descaling

If necessary, cancel the descaling or sanitizing sequences by pressing cancel . However, the sequences cannot be cancelled after cleaner or sanitizer has been added to the sump and **OK** has been pressed.

1. Remove all ice from the bin (or dispenser if applicable).
2. Loosen the front panel screws and open the front panel.
3. In the home screen press **CLEAN** .



4. Press **DESCALE**.



Maintenance & Cleaning (cont.)

5. Choose between the options.

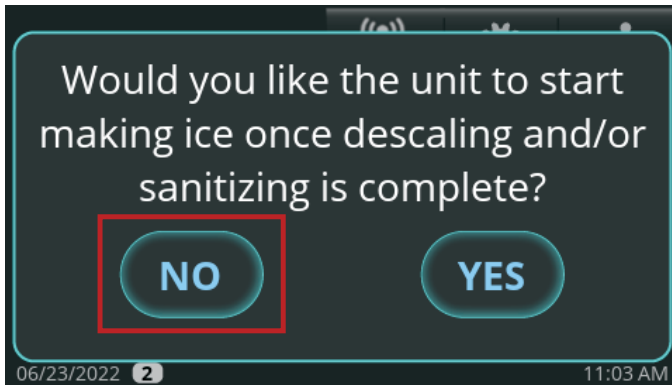
PREVENTATIVE MAINT.: Shorter cycles; use between bi-annual maintenance.

STANDARD: Normal cycle times; use when performing regular bi-annual maintenance.

HEAVY: Longer cycle times; use when heavy scaling on parts is obvious.

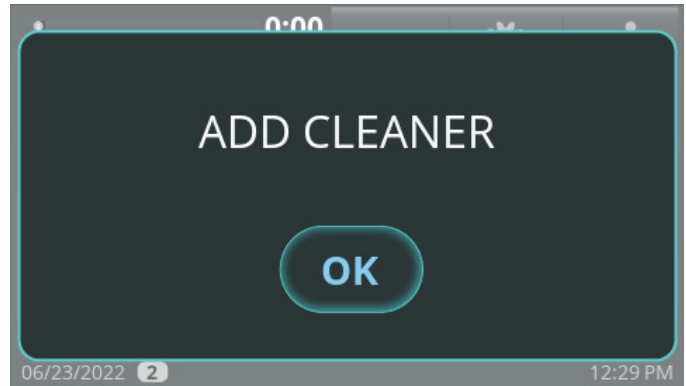


6. When "Would you like the unit to start making ice once descaling and/or sanitizing is complete?" appears, press **NO**.



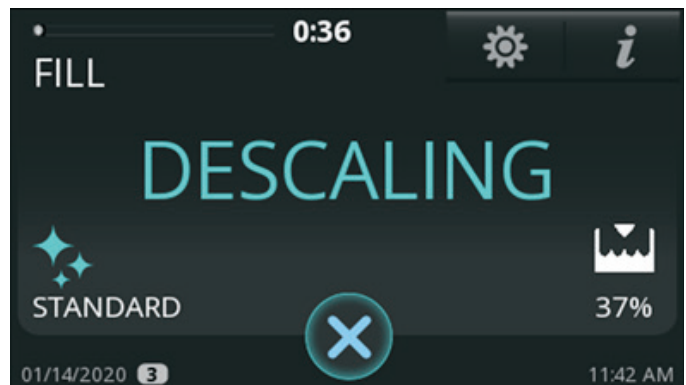
7. Wait for the ice machine to run through the PRE-CLEANING sequence (FILL, PUMP, DRAIN, and HARVEST). If there is enough water in the sump at the start of CLEAN, it will go through a DRAIN sequence before FILL. The compressor will start during the HARVEST sequence to ensure there is no ice on the evaporator and will shut off before the cleaning sequence continues.

8. When **ADD CLEANER** appears, open the water curtain and pour 10 oz (296 mL) of TRUE ice machine descaler between the evaporator and the damper.

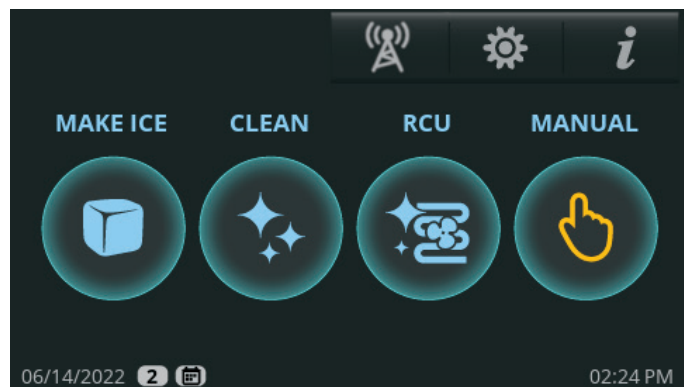


9. After adding descaler, press **OK**. The display will then show the sequence status.

NOTICE > The sequence will not proceed from this point unless OK is pressed after adding the descaler.



10. Wait for the ice machine to complete the cleaning cycle and return to the home screen.



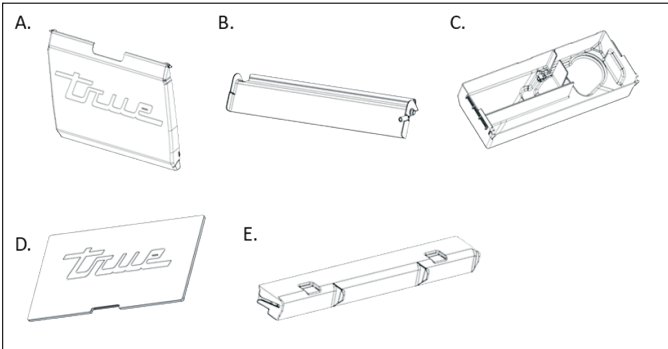
11. Prepare a solution of 10 fl oz (296 mL) TRUE ice machine descaler to 1 gal (3.8 L) of warm water.

NOTICE > In cases where scale build up is particularly heavy, substitute equal amounts ice machine descaler and warm water.

Maintenance & Cleaning

Descaling (cont.)

12. Remove parts for cleaning. See below.



A. Water Curtain: Remove by placing one hand over the top lip of the curtain and the other hand on the side of the curtain. Gently flex the curtain on the side toward the center while gently pulling the top outward.

B. Damper: Remove by pushing the damper down until horizontal, pull forward gently until it stops and then push down until it stops and pull forward.

C. Sump: Reach under the sump and pull off the drain hose. Then place fingers between the left or right bulkhead wall and the side of the sump. Push the sump with your fingers toward the opposite bulkhead wall while pulling the sump in the same direction with your hand until it comes out of the snap bracket. Repeat the process on the other side and remove the sump.

D. Evaporator Area Cover: Remove by pushing up from the inside of evaporator section.

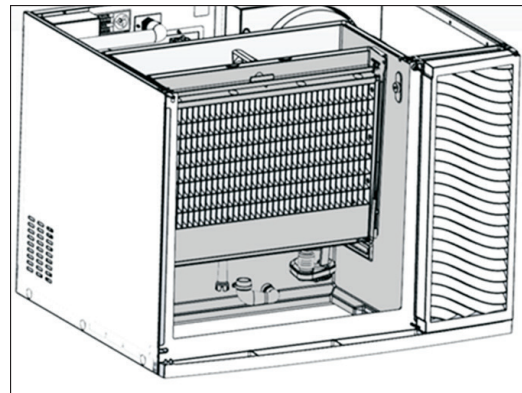
E. Water Distributor: Remove by grabbing the two distributor tabs and pull up slightly then forward.

13. With half of the solution, soak the parts for 5-10 minutes (if heavily scaled, 15-20 minutes). Then with a soft nylon bristle brush, cloth, or sponge, thoroughly clean the parts.

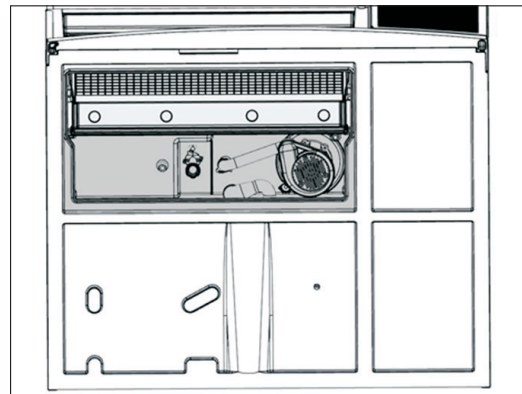
14. Thoroughly rinse the parts with clean water.

15. With the remaining solution and a soft nylon bristle brush, cloth, or sponge, thoroughly clean all food zone areas (shaded components) of the ice machine. These areas include the following:

- Side walls
- Plastic evaporator top frame (where distributor is installed)
- Plastic evaporator sides and bottom
- Water pump base
- Water pump tubing
- Sump drain tubing
- Water level air column
- Base (area above the sump, under the evaporator)



Front View



Bottom View

16. Thoroughly clean all food zone areas of the ice bin (or dispenser, if applicable).

Maintenance & Cleaning (cont.)

Sanitizing

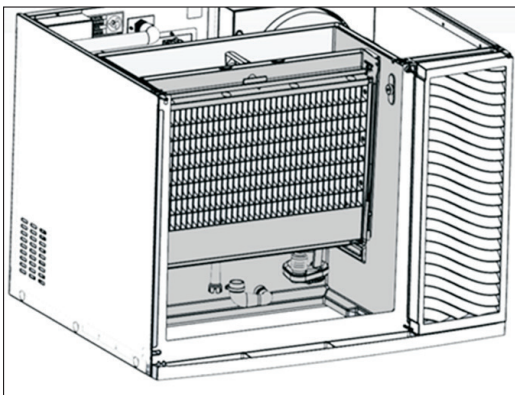
1. Prepare a solution of 1.5 fl oz (44mL) chlorine bleach (5.25% sodium hypochlorite) to 3 gal. (11.4 L) of warm water. Use half of the solution to sanitize all the removed parts from the cleaning procedure.
2. Soak all the parts in the solution for one minute and then allow them to air dry.

⚠ **WARNING!**

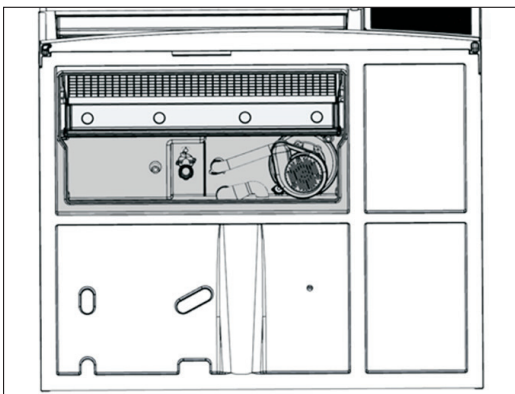
!

Do not rinse the parts with clean water after sanitizing. Let them air dry.

3. With a spray bottle, heavily spray all food zone areas with the sanitizing solution. These areas include the following:
 - Side walls
 - Plastic evaporator top frame (where distributor is installed)
 - Plastic evaporator sides and bottom
 - Water pump base
 - Water pump tubing
 - Sump drain tubing
 - Water level air column
 - Base (area above the sump, under the evaporator)



Front View

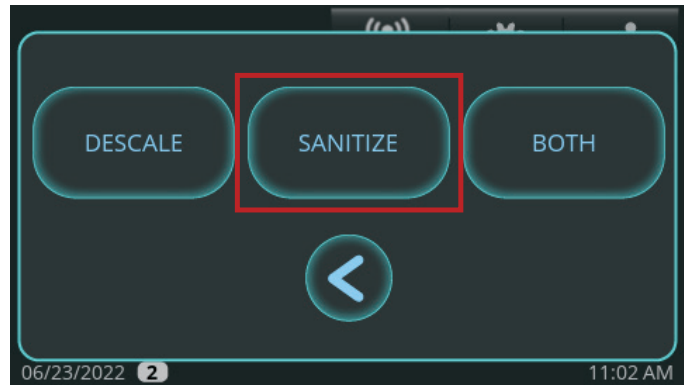


Bottom View

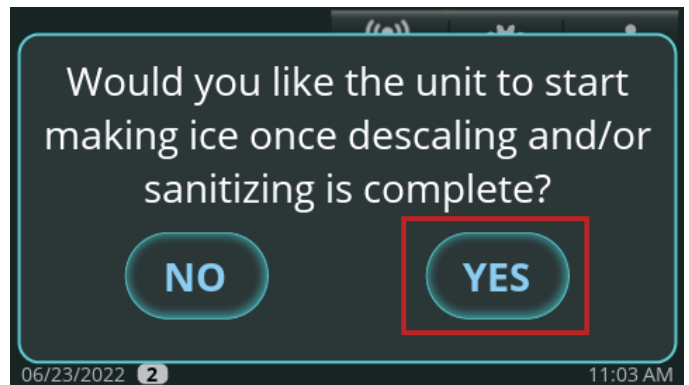
4. Reinstall the sanitized components and wait 10 minutes.
5. In the home screen, press **CLEAN**



6. Press **SANITIZE**.

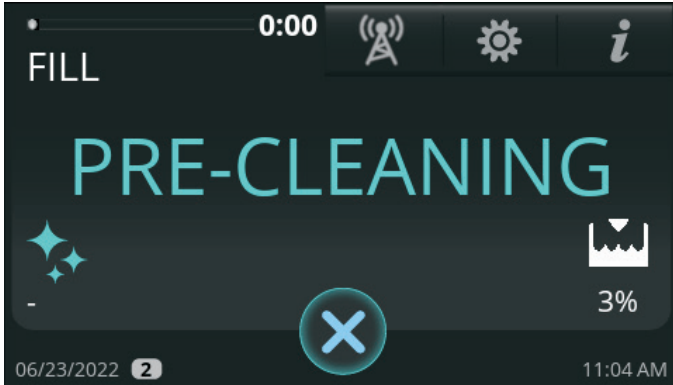


7. When "Would you like the unit to start making ice once descaling and/or sanitizing is complete?" appears, press either **NO** or **YES**. The ice machine will go into PRE-CLEANING.

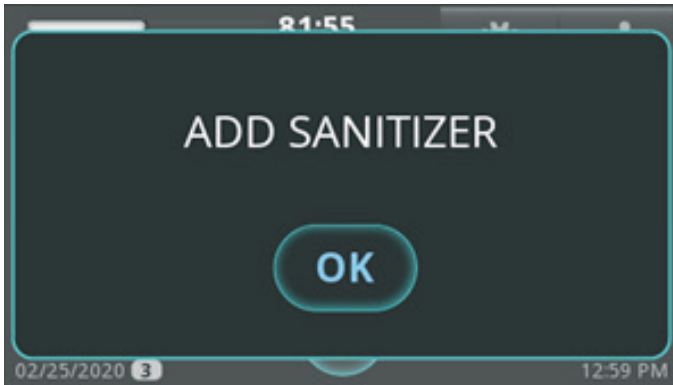


Maintenance & Cleaning

8. Wait for the ice machine to run through the PRE-CLEANING sequence (FILL, PUMP, DRAIN, and HARVEST). If there is enough water in the sump at the start of CLEAN, it will go through a DRAIN sequence before FILL. The compressor will start during the HARVEST sequence to ensure there is no ice on the evaporator and will shut off before the cleaning sequence continues.

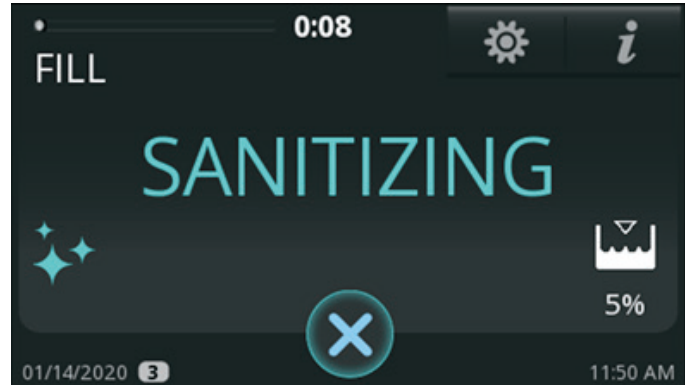


9. When **ADD SANITIZER** appears, open the water curtain and pour in 10 oz (296 mL) chlorine bleach (5.25% sodium hypochlorite) between the evaporator and the damper.



10. After adding chlorine bleach (5.25% sodium hypochlorite), press **OK**. The display will then show the sequence status.

NOTICE > The sequence will not proceed from this point unless OK is pressed after adding chlorine bleach (5.25% sodium hypochlorite).




11. When the sanitizing sequence finishes, the ice machine will either go into STANDBY mode or return to MAKE ICE mode based on the choice made in step 7.


Maintenance & Cleaning (cont.)

Exterior Cleaning

ⓘ USER ACTION!

	If a greasy residue remains on the surface, use a mild dish soap and water solution with a damp cloth. Wipe dry with a clean, soft cloth.
---	---







ⓘ NOTICE!

	<p>The exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels.</p> <ul style="list-style-type: none"> • Never use steel wool or abrasive pads. • Never use chlorinated, citrus based or abrasive cleaners on exterior panels and plastic trim pieces.
---	---


- Clean the area around the ice machine as needed to maintain cleanliness and efficient operation.
- Wipe surfaces with a damp cloth rinsed in water to remove dust and dirt from the ice machine's exterior.

Condenser Coil Cleaning

⚠ WARNING!

  	<p>The appliance owner is responsible for performing a Personal Protective Equipment (PPE) Hazard Assessment and ensuring adequate protection during maintenance and cleaning procedures.</p> <p>Use appropriate tools, safety equipment, and PPE during installation and servicing.</p>
	<p>Risk of electric shock or burn!</p> <ul style="list-style-type: none"> • Unplug the appliance or turn off the power supply before installation or servicing. • DO NOT clean appliance with a pressure washer or hose.
	<p>Sharp edges! Coil fins are sharp and metal components can have sharp edges. Take care when moving, installing, cleaning, servicing, and maintaining the appliance to avoid cuts.</p>
	<p>Risk of eye injury! Airborne dust and debris can cause eye injury. Eye protection recommended.</p>

ⓘ USER ACTION!

	Only use chemical cleaners or detergents when absolutely necessary and water alone cannot clean the condenser coil. If necessary, use a pH neutral degreaser (alkaline degreaser no higher than 8 pH or acidic degreaser no lower than 6 pH) that does not contain hydrofluoric acids.
---	--

Maintenance & Cleaning

Condenser Coil Cleaning (cont.)

1. Disconnect power to the ice machine or turn off the power supply.
2. Remove the front, top, and side panels. See "Panel Removal" (pg. 49).
3. Remove the top condenser plate. See fig. 1.
4. With soft-bristled brush, carefully clean accumulated dirt from the condenser coil fins.

NOTICE Take care to not damage the micro-channel condenser. Never brush across coil fins.

5. With dirt removed from the coil surface, use a flashlight to verify there are no blockages inside the coil.
6. If there are blockages, gently blow compressed air through the coil until blockages have been removed.
7. Reinstall removed components.
8. Restore power and verify operation.

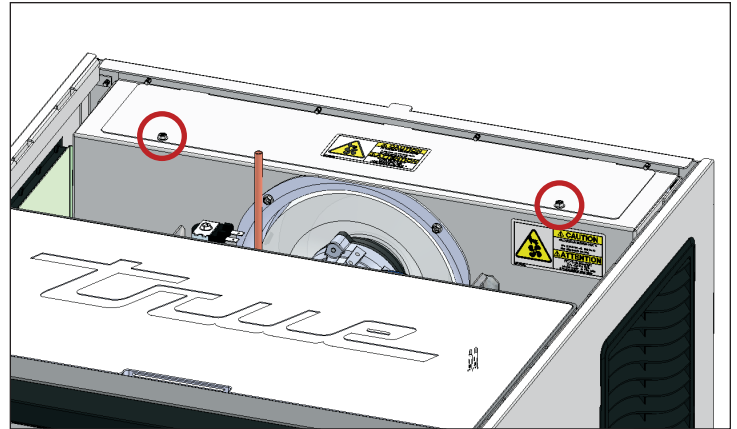


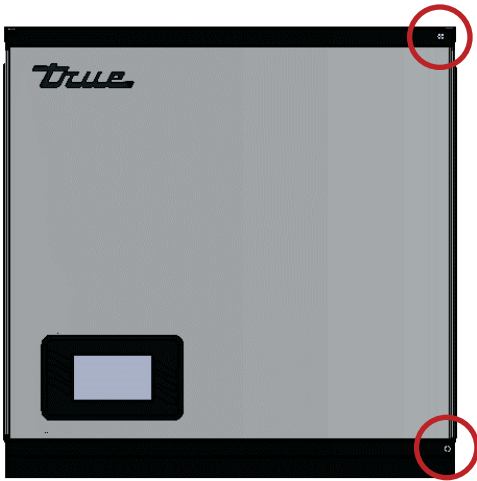
Fig. 1. Condenser plate screw locations.

Maintenance & Cleaning (cont.)

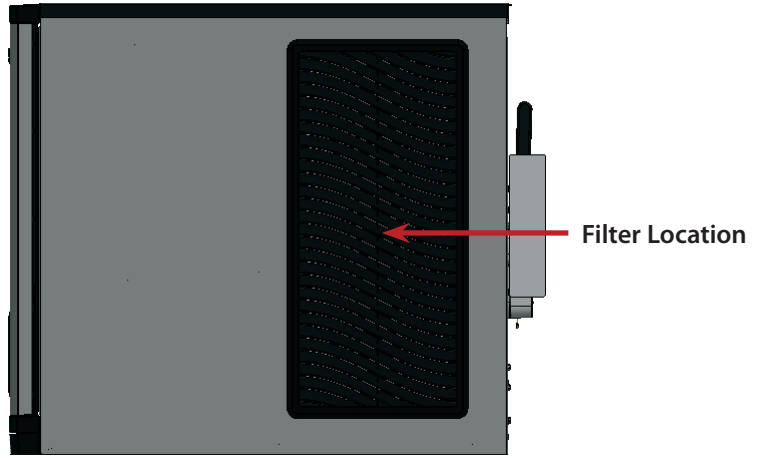
Air Filter Cleaning

Clean with compressed air, water, or degreaser. See filter locations and screw locations in the figures below.

22" Air Filter Location

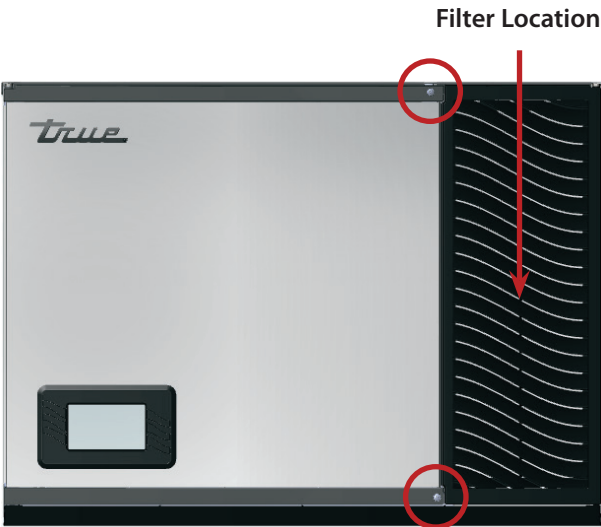


22" Front View

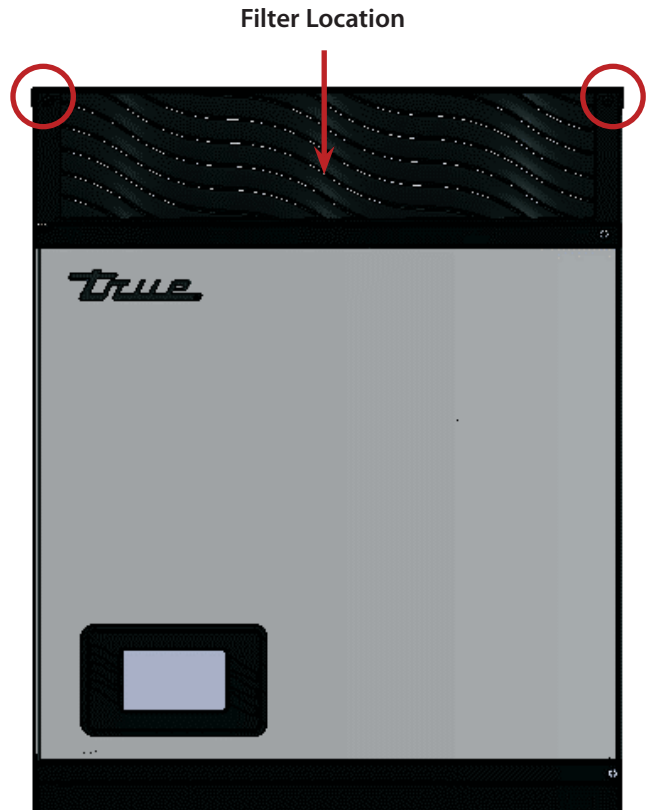


22" Side View

30" Air Filter Locations



30" Front View



30" Front View

Maintenance & Cleaning

TrueZone™ UV Bulb Replacement

⚠ WARNING!

	<p>Optical radiation Hazard! UV light! Invisible laser radiation. Do not look directly at light. Always disconnect power before servicing the lamp.</p>
	<p>Electrical shock or burn hazard! High Voltage Inside!</p> <ul style="list-style-type: none"> • Toggling the rocker switch does not remove power from all components. Unplug the ice machine or turn off the power supply before servicing. • Open circuit voltage and voltage to ground 600V.
	<p>Sharp edges! Take care when installing, cleaning, servicing, and maintaining the ice machine to avoid cuts. Be sure to take care when reaching under the appliance or handling metal components.</p>
	<p>Do not dispose of lamps with household waste. Lamps contain mercury. Recycle the lamps so the mercury, metal and glass can be reclaimed, and they do not enter our water system. Visit search.earth911.com and search for a local recycling solution.</p>

ⓘ NOTICE!

	<p>The bulb counter automatically resets/recalculates when replaced. Any errors/alarms automatically clear.</p>
--	---

1. Disconnect power to the ice machine or turn off the power supply.
 - NOTICE >** Let the bulb cool at least two minutes before proceeding.
2. Open the front panel. See fig. 1.
3. Remove the top panel or right panel to access the UV bulb.
4. Locate the TRUEZONE UV system. See figs. 2 and 3.
5. RIGHT ACCESS ONLY: Remove the TRUEZONE bracket screws and slide the TRUEZONE UV system towards you. See fig. 3
6. Remove the bulb assembly from the TRUEZONE UV system.
7. Disconnect the electrical harness from the bulb assembly.
8. Connect the replacement bulb to the electrical harness.
9. Install the replacement bulb assembly.
 - NOTICE >** Be sure the notch in the rubber seal faces the TRUEZONE's outlet air tube. See fig. 4.
10. Restore power and verify operation.
11. If applicable, reinstall the TrueZone™ UV system. See fig. 4.
12. Reinstall all covers and panels removed to access the bulb.

Maintenance & Cleaning (cont.)



Fig. 1. Front panel screw locations.

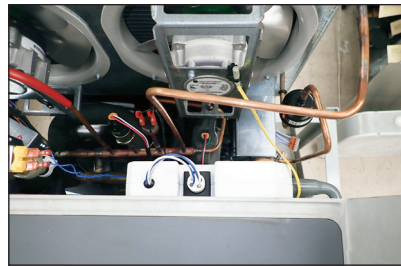


Fig. 2. TRUEZONE UV system top view.



Fig. 3. TRUEZONE UV system side view. TRUEZONE bracket screw locations.

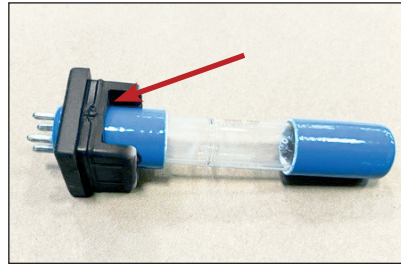





Fig. 4. Rubber seal notch.

Cleanup Procedure for Accidental Lamp Breakage

⚠ WARNING!

  	<p>The appliance owner is responsible for performing a Personal Protective Equipment (PPE) Hazard Assessment and ensuring adequate protection during maintenance and cleaning procedures.</p> <p>Use appropriate tools, safety equipment, and PPE during installation and servicing.</p>
---	---

These lamps contain a small amount of mercury sealed within the glass tubing. When a lamp breaks, some of this mercury is released as mercury vapor. The broken lamp can continue to release mercury vapor until it is cleaned and removed from the area. These lamps fall under the same category as compact fluorescent light (CFL). To minimize exposure to mercury vapor, the EPA recommends that residents follow the cleanup and disposal steps described below.

This cleanup guidance represents the minimum actions recommended to clean up a broken CFL. For more detailed instructions and information, please see U.S. Environmental Protection Agency (EPA) website at epa.gov.

The most important steps to reduce exposure to mercury vapor from a broken lamp include the following:

Before Cleanup...

1. Have people and pets leave the room
2. Air out the room 5-10 min by opening a window or door to the outdoor environment.
3. Shut off any central forced air heating/air-conditioning systems.

Collect materials needed to clean up broken lamp

- Stiff paper or cardboard
- Sticky tape
- Damp paper towels or disposable wet wipes (for hard surfaces)
- A glass jar with a metal lid or a sealable plastic bag

Maintenance & Cleaning

During Cleanup...

1. Thoroughly collect broken glass and visible powder.

WARNING!

**Do not vacuum broken glass fragments!**

Vacuums are not recommended unless broken glass remains after all other cleanup steps have been taken. Vacuuming could spread mercury-containing powder or mercury vapor.

2. Place cleanup materials in a sealed container.

After Cleanup...

1. Promptly place all lamp debris and cleanup materials outdoors in a trash container or protected area until materials can be disposed of. Avoid leaving any lamp fragments or cleanup materials indoors.

NOTICE

Some localities require fluorescent lamps (broken or unbroken) be taken to a local recycling center. Check with your local government about disposal requirements in your area. If there is no such requirement, you can dispose of the materials with your household trash.

2. If practical, continue to air out the room where the lamp was broken and leave the heating/air-conditioning system shut off for several hours.

General Surface Cleaning

Door Gasket

- Clean gaskets with warm soapy water.
- DO NOT use sharp tools or knives to scrape a gasket.
- Avoid full-strength cleaning products.

Exterior

- For plastic or powder-coated parts, use warm soapy water to clean DO NOT use stainless steel cleaners or similar solvents.
- DO NOT clean stainless steel with steel wool or abrasive products. DO NOT use detergents or degreasers with chlorides or phosphates.

Maintenance & Cleaning (cont.)

Winterizing

If storing your ice machine for an extended time or in sub-freezing temperatures, winterize the appliance.

NOTICE!



If the ice machine will not be used for 2-3 days under normal conditions turn the unit off

1. Clean and sanitize the ice machine. See "Descaling and Sanitizing Procedure" (pg. 51).
2. Turn off the water supply.
3. Disconnect and drain the water supply line at the rear of the ice machine and drain the sump.
4. In the Home Screen, press **MANUAL** . Then, press **FILL** . Wait for 3 seconds then blow compressed air in the water supply fitting in the rear of the ice machine to remove all water.
5. When complete, press cancel to exit the manual drain operation.
6. In the Home Screen, press **MANUAL**. Then, press **DRAIN** . Wait for 3 seconds then blow compressed air in the drain fitting in the rear of the ice machine to remove all water.
7. When complete, press cancel to exit the manual drain operation.
8. Disconnect electrical power at the main disconnect/circuit breaker.
9. Fill spray bottle with sanitizer and spray all interior food zone surfaces.

WARNING!



DO NOT rinse the parts with clean water after sanitizing.
Let them air dry.

10. Reinstall all panels.

Troubleshooting & Diagnosis

Troubleshooting & Diagnosis

Long Freeze/Long Harvest

Problem	Causes	Possible Solutions
Long Freeze	Lack of maintenance	
	• Air filter	Clean (or replace) condenser air filter
	• Condenser coil	Clean condenser coil
	• Clogged water filter	Replace in-line water filter
	Improper installation	
	• Clearances	Unit must be installed with proper clearances (pg. 14)
	• Hot water supply	Verify unit is being supplied by cold water
	• Ambient temperatures	Designed ambient temperature for proper operation are 35°-100°F (1.7°-43.3C°)
	• Low supply voltage	Designed voltage 104-127 VAC
	Water system related	
	• Incoming water pressure	Verify pressures are between 20-100 psi
	• Defective (leaking) inlet water valve	Replace inlet water fill valve
	• Relay for water valve stuck closed (control board issue)	Replace control board
	• Water cooled; valve not adjusted correctly	Adjust water flow according to head pressure; if stuck open, replace valve
	Electrical system related	
	• Voltage dropping under load	Verify wire size feeding the outlet
	• Defective water level sensor (not reading water levels/control board correctly)	See "Water Level Sensor" (pg. 73)
	• Defective compressor relay on control board	Replace control board
	• Defective compressor and/or start components	Determine which has failed and replace NOTICE > If a start component fails, replace all components
	• Open compressor windings	Replace the compressor
	• Defective water pump	If water pump has voltage, replace the water pump
	• Defective control board	See "Transducer Diagnosis" (pg. 76)
	Refrigeration system related	
	• Incorrect charge	• Vacuum the system and weigh in the correct charge
	• Incorrect refrigerant	• Verify only R-290 refrigerant is being used
	• Non-condensables in the system	• Replace the drier and pull 500 mic vacuum

Troubleshooting & Diagnosis (cont.)

Problem	Causes	Possible Solutions
Long Freeze (cont.)	Refrigeration system related (cont.)	
	• Flooding/starving TXV	Check TXV bulb clamp/replace TXV
	• Leaking harvest valve	Replace harvest valve
	• Compressor (weak valves)	Replace compressor
	• Restriction	Replace restricted item
Long Harvest	Lack of maintenance	
	• Dirty evaporator/nickel plating	Descale and sanitize per instructions (pg. 51); if nickel plating is missing, replace the evaporator
	• Faulty evaporator (missing partitions)	Replace evaporator
	• Excessive scale deposits	Descale and sanitize per instructions (pg. 51)
	• Silicone surrounding evaporator plate not sealing (should be sealed all the way around the evaporator)	Reapply silicone NOTICE > Surface must be dry and clean. Fill any voids surrounding the evaporator with 100% silicone. Silicone should be cured before starting the unit.
	Improper Installation	
	• Not level	Level the unit by adjusting bin/dispenser legs
	• Low ambient temperature (below 35°F (1.7°C))	Move the unit or increase the ambient temperature
	Electrical system related	
	• Faulty harvest valve (not opening all the way)	Verify HGV coil voltage is correct
	• Open harvest valve coil	Replace HGV coil
	• Harvest valve relay (on control board) not closing	Replace control board
	• Proximity switch (bin switch) stuck closed	Replace proximity switch (bin switch)
	• Condenser fan(s) should not run during defrost)	Check wiring. If wired incorrectly, correct wiring per wiring diagram; If control board sends voltage to condenser fans during harvest, replace the control board
	Refrigeration system related	
	NOTICE > If the compressor discharge line temperature (measured 6" (153 mm) from the compressor) falls below 140°F (60°C) when harvest initiates, the unit will not have the designed temperature required for harvest	
	• Low Charge	Check refrigeration system for leaks
	• Incorrect charge	Vacuum refrigeration system and weigh in the correct charge
	• Incorrect refrigerant	Verify only R-290 refrigerant is being used
	• Non-condensables in the system	Replace the drier and pull 500 mic vacuum
• Flooding/starving TXV	Check TXV bulb clamp/replace TXV	

Troubleshooting & Diagnosis

Alarms

Code	Display Alarms	Diagnosis	User Action
E1	ALARM T1 Input	Open or shortened probe	Replace probe
E2	ALARM T2 Input	Open or shortened probe	Replace probe
E3	ALARM T3 Input	Open or shortened probe	Replace probe
E4	ALARM T4 Input	Open or shortened probe	Replace probe
E6	ALARM High Pressure	Discharge pressure has exceeded 370 psi	Clean air filter; Clean condenser coil; verify condenser fan is operating
E7	ALARM HP1 Input	Loss of signal/High pressure transducer	Check the wire connection between the transducer and the board. Replace transducer
E8	ALARM LP1 Input	Loss of signal/Low pressure transducer	Check the wire connection between the transducer and the board. Replace transducer
E9	ALARM Water Level Sensor Input	Loss of signal	Verify tubing connecting sensor to the board is not damaged, verify the pressure sensing chip on the control board is making good contact.
E11	ALARM Low Temperature T1 in Freeze	T1 probe fell below -10° within the first 2 min of the freeze cycle	Check probe resistance/location (evaporator outlet); verify pump motor is operating; check to see that previous ice sheet fell and is not on the evaporator coil.
E12	ALARM High Temperature T1	Evaporator outlet temp exceeded 113°F (45°C)	Verify unit is being supplied by cold water; check ambient temps. Ohm out probe.
E13	ALARM Low Temperature T1	Evaporator outlet temp fell below -20°F (-29°C)	Ohm out probe; verify evaporator outlet temperature; verify pump motor is operating during freeze cycle; verify unit has water.
E14	ALARM High Temperature T2	Ambient temp exceeded 130°F (54°C)	Verify ambient temperatures; ohm out probe; verify condenser motor is running during freeze cycle.
E15	ALARM Low Temperature T2	Ambient temp fell below 33°F (0.5°C)	Verify ambient temperature; ohm out probe.
E16	ALARM High Temperature T3	Water trough temperature exceeded 113°F (45°C)	Verify water in trough temperature; ohm out probe.
E17	ALARM Low Temperature T3	Water trough temperature fell below 25°F (-4°C)	Verify water trough temperature; ohm out probe.
E18	ALARM High Temperature T4	Incoming water temp exceeded 124°F (51°C)	Check water supply temps; ohm out probe.
E19	ALARM Low Temperature T4	Incoming water temp fell below 33°F (0.5°C)	Check water supply temps; ohm out probe.
E20	ALARM High Pressure on HP1	Head pressures greater than 320-360 psi. (Depending on Model)	Clean air filter; clean condenser coil; verify condenser fan operates correctly.
E22	ALARM Long Freeze Time	Freeze cycle exceeded 40 min	Verify compressor is running; check High and Low side pressures.
E23	ALARM Calculation Error - Negative Value	Water level in sump during freeze cycle fell below the differential	Verify water is not leaking near evaporator cover and the harvest flap; check if water leaks from the drain valve.
E24	ALARM Long Fill Time	Sump tank did not fill within 30 min	Verify unit has water; check incoming water filter; check inlet water valve.

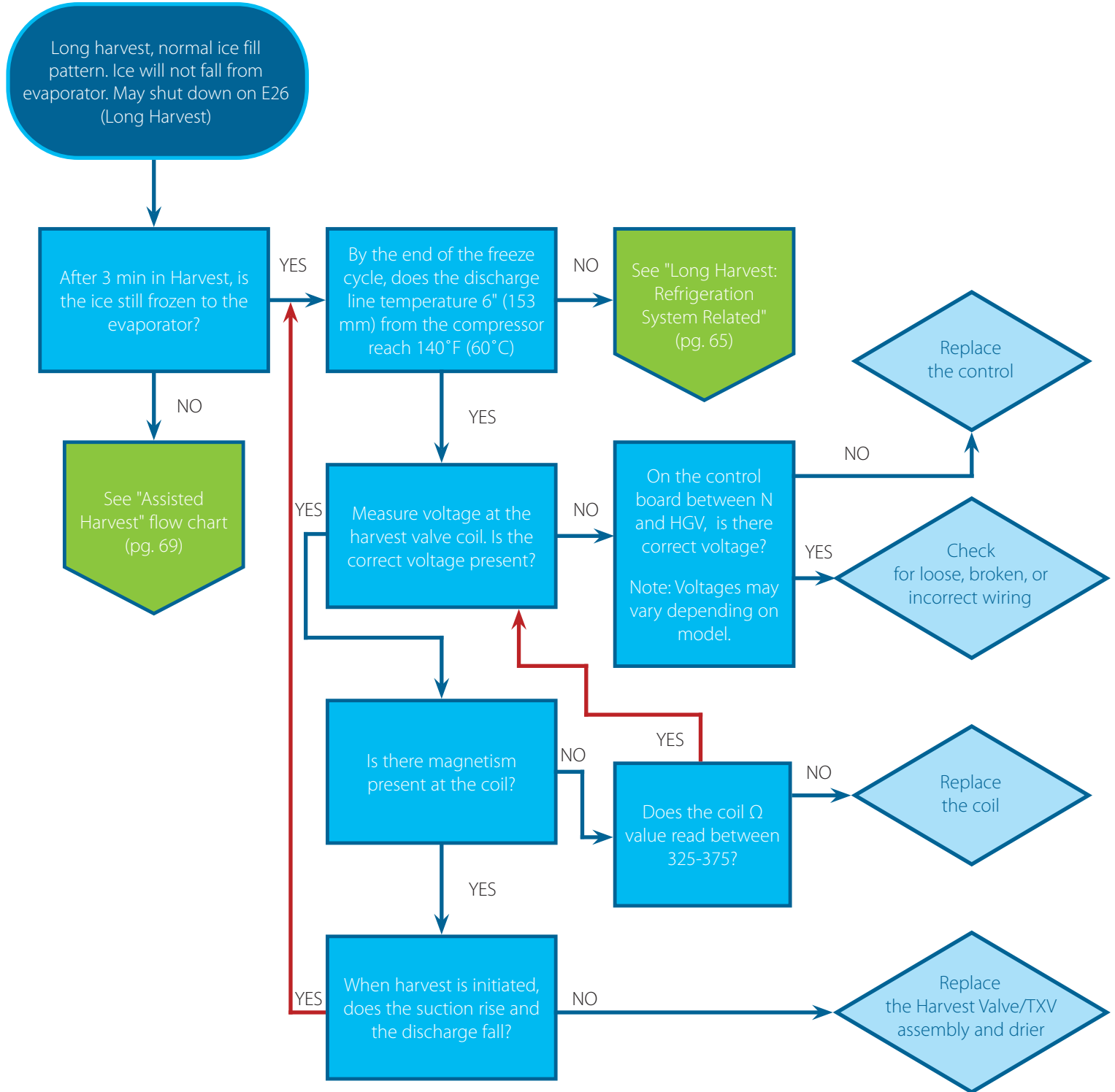
Troubleshooting & Diagnosis (cont.)

Code	Display Alarms	Diagnosis	User Action
E25	ALARM Long Purge	Water level in sump did not drain to the proper level within 4 min	Check voltage to the drain valve coil; verify the drain is clear; verify the drain is vented; check if sump drain is clear
E26	ALARM Long Harvest	Bin switch failed to open during 3 consecutive harvests, or during "startup" T1 does not reach 50°F (10°C) in 20 min	Check bin switch to see if contacts are stuck closed; verify the evaporator is not frozen; check ice pattern for full sheets (could be charge related issue)
E27	ALARM Water Leakage	Water level falls below the level used to initiate harvest in the first 5 min	Check for excessive splashing; Water curtain, Bin/harvest flap, Drain valve leaking
E28	ALARM Pump Motor	Only check during startup. Water level must fall below 43 mm within 60 sec	Check for voltage to the pump; verify water inlet valve is shutting off
E29	H ₂ O	Sump tank does not fill within 3 min	Check the following: <ul style="list-style-type: none"> • Water filter • Incoming water pressure • Inlet water valve • Drain valve
E30	ALARM Biozone	Failure to the UV system	Check the UV information in the menu to verify failure <ul style="list-style-type: none"> • Low current • High current • Lamp time exceeded
E31	ALARM Hot Gas Valve	During harvest the high-side pressure exceeded 165 psi after the first 5 sec	Check the "No Harvest/Frozen In" flow chart (pg. 68)
E32	ALARM Low Suction Pressure	Low side pressure fell below 10 psi during the freeze cycle	Check cycle times and pressures. Check the ice pattern on evaporator coil. Possibly check for leaks and restrictions.
E33	ALARM HP2 Input	Secondary high side transducer failure	Check the wire connection between the transducer and the control board. Replace the transducer.
E34	ALARM LP2 Input	Secondary low side transducer failure	Check the wire connection between the transducer and the control board. Replace the transducer.
H ₂ O	Slow Fill	Sump tank did not reach the APF setting within the first 3 min	Check incoming water supply filter; verify the inlet valve is energizing and is opening.
---	Time for evaporator cleaning	Prescheduled reminder to check evaporator coil (every 24 weeks)	Check to see if the evaporator coil needs to be chemically descaled. If not, reset counter
---	Time for air filter cleaning	Prescheduled reminder to clean condenser air filter (every 3 months)	Check or clean condenser filter as well as condenser coil
---	Time to replace water filter	Water filter has exceeded its capacity	Water filter capacity should be entered upon installation. See "Water Filter Setup" (pg. 44)
---	Ice level sensor communication error	Ice level sensor is not communicating with the board	Check all connections between the ice level sensor and the control board. Possible ice level sensor failure.
---	COM	Communication Error	Display is not communicating with the control board. Check all connections between the display and the control board. Unit may require a firmware update.

Troubleshooting & Diagnosis

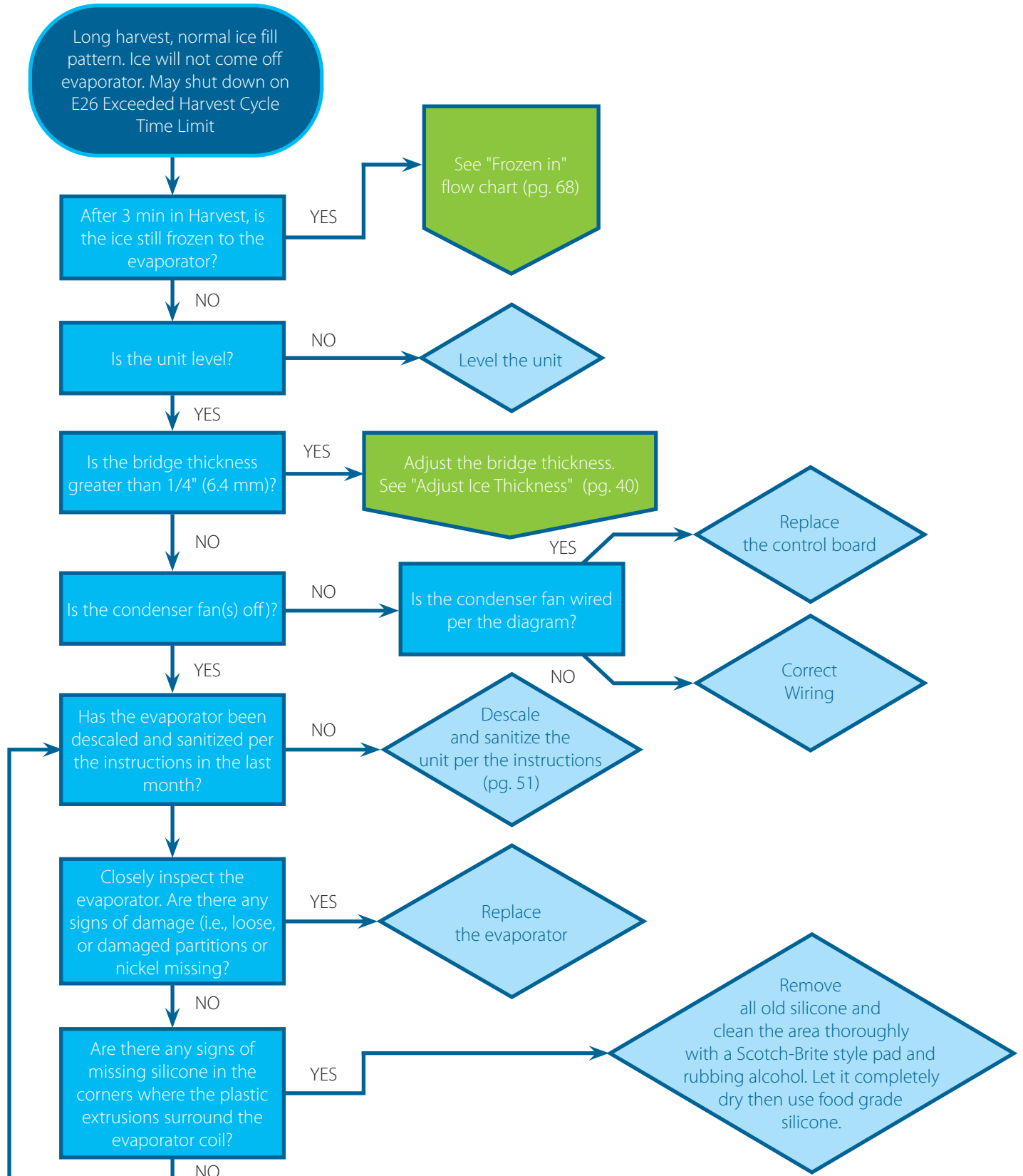
Flow Charts

No Harvest/Frozen In



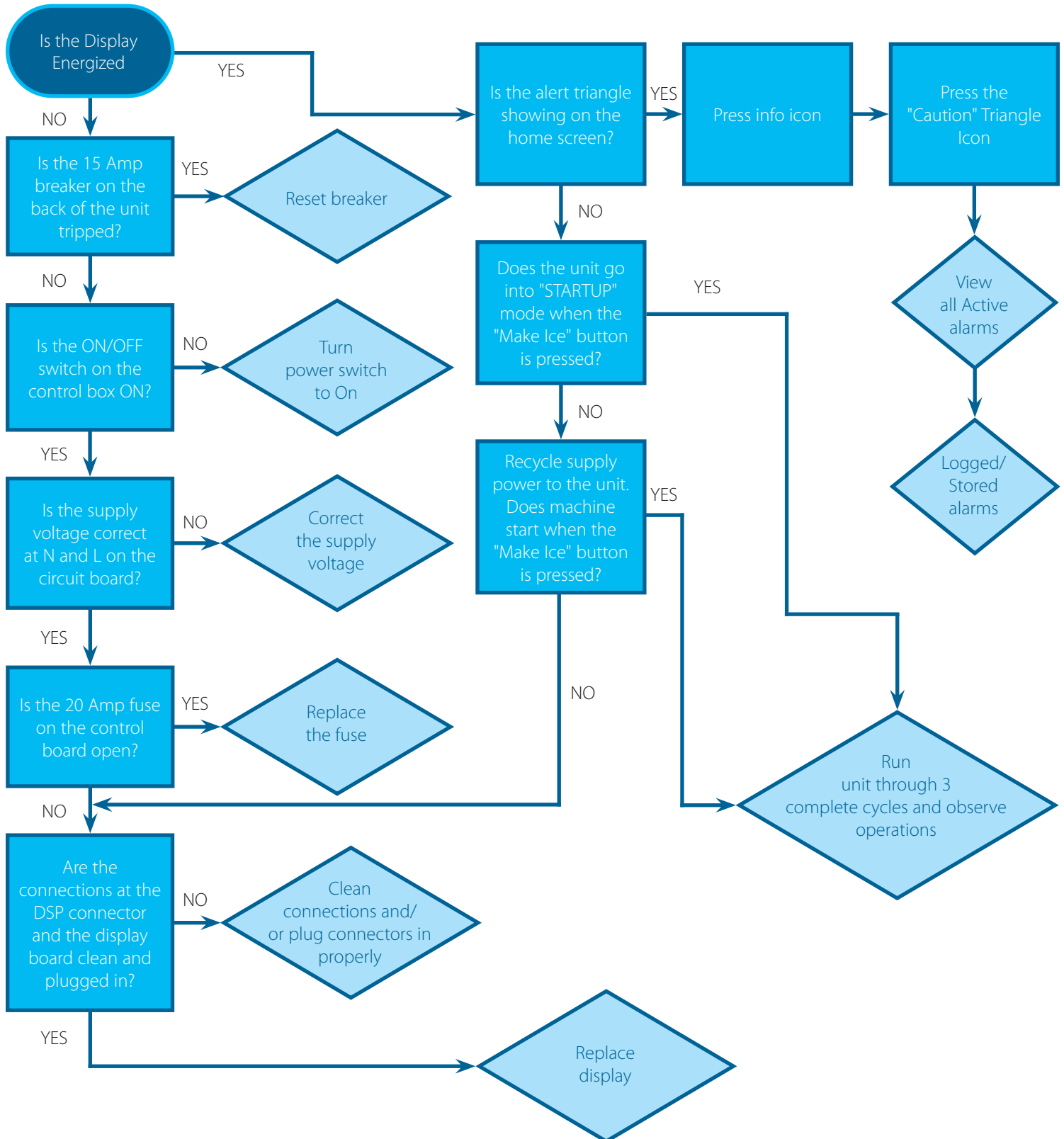
Troubleshooting & Diagnosis (cont.)

Not Harvesting/Assisted Harvest



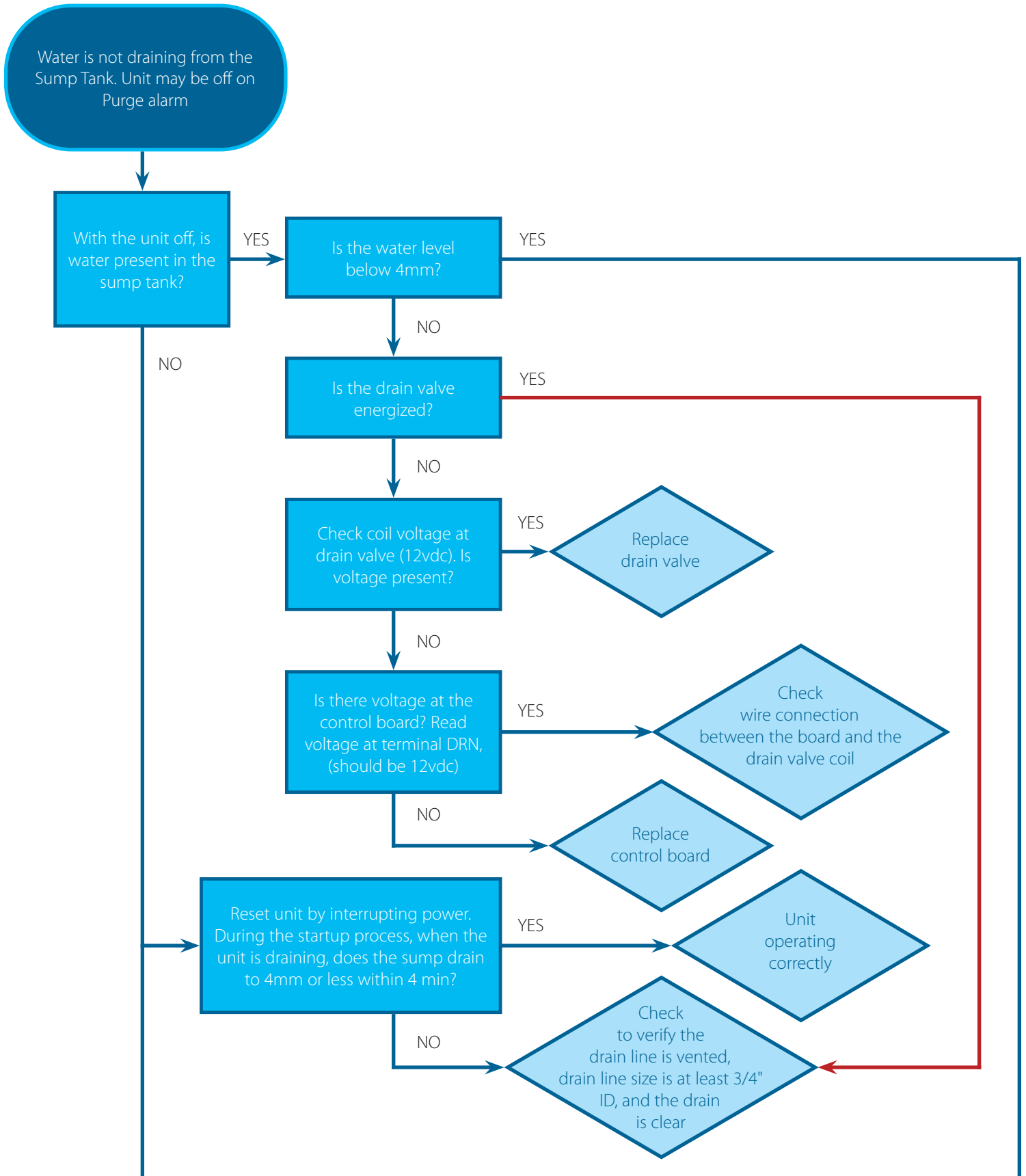
Troubleshooting & Diagnosis

Unit Shutting Off



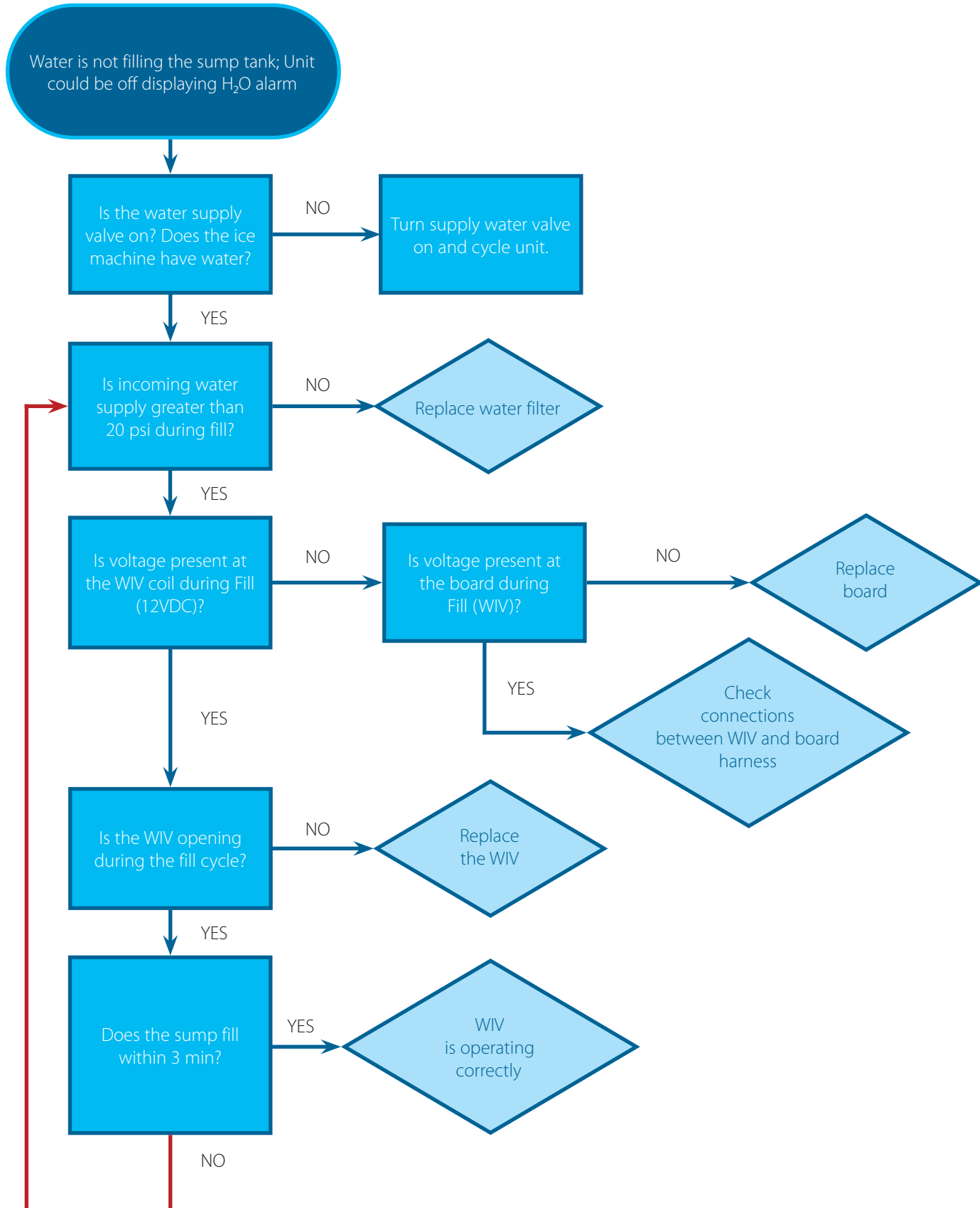
Troubleshooting & Diagnosis (cont.)

Drain Valve



Troubleshooting & Diagnosis

Fill Valve (WIV)



Troubleshooting & Diagnosis (cont.)

Water Level Sensor

The water level sensor uses pneumatic technology to sense pressure changes determined by the water level in the sump tank. Those pressures are then converted into millimeters of water and are displayed on the information screen.

1. Turn the unit off at the touchscreen.
2. Remove the drain fitting located under the sump tank. This will allow all the water to drain into the bin or dispenser.
3. Press the info button **i** to open the information screen.
4. On the information screen, verify the water level is reading 0 mm (+/-2mm). See fig. 1.
5. Disconnect power to the drain valve, reattach the sump drain fitting, and fill the sump tank with water until water overflows into the bin or dispenser.
6. On the information screen, verify the water level is reading 63 mm (+/-2mm). See fig. 2.
7. If the display is reading the correct psi water levels, then the sensor is working correctly. If the display is not reading the correct water levels, check the tubing connections on the sensor and the board for any possible air leaks or kinks in the tubing.
8. If no issues are found, replace the control board.



Fig. 1. The water level reads 0 mm.

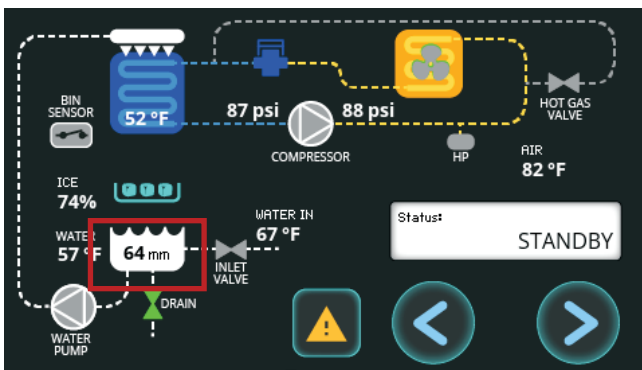


Fig. 2. The water level reads 63 mm +/- 2 mm.

Proximity Switch (Bin Switch)

1. Turn the unit off at the touchscreen.
2. Remove the top and right side panels. See "Panel Removal" (pg. 49).
3. Remove the rubber covers.
4. Locate the proximity switch (bin switch). See fig. 1.
5. Disconnect the proximity switch moxex connector. See fig. 2. Then, insert meter test leads.
 - NOTICE** Pull the damper away from the closed position 50 times. If the meter reading is not consistent every time, then replace the proximity switch.
 - With the damper in the closed position, the resistance reading should be 0 Ω.
 - With the damper in the open position, the resistance reading should be O.L..
6. Disconnect power to the unit.
7. Unplug the proximity switch connector from the board and ohm the wire harness (with the damper closed, it should read 0 Ω).
 - If the wire harness DOES NOT read 0 Ω, replace the wire harness.
 - If the wire harness reads 0 Ω, replace the control board.

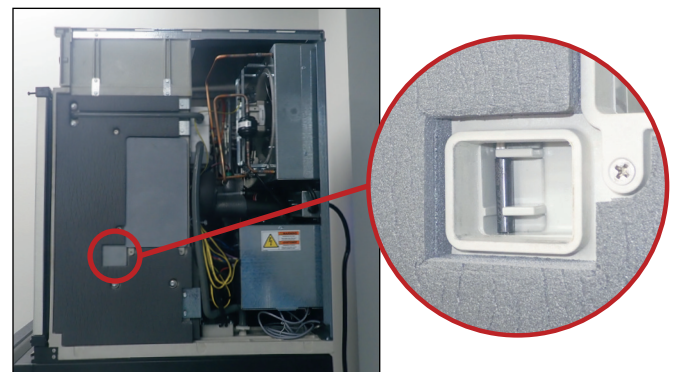


Fig. 1. Proximity switch (bin switch) location.

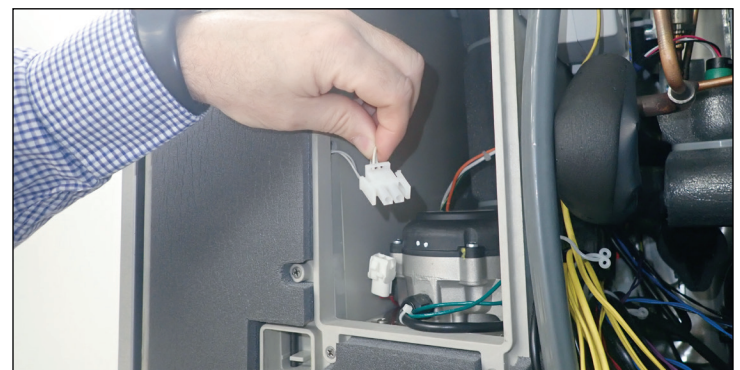


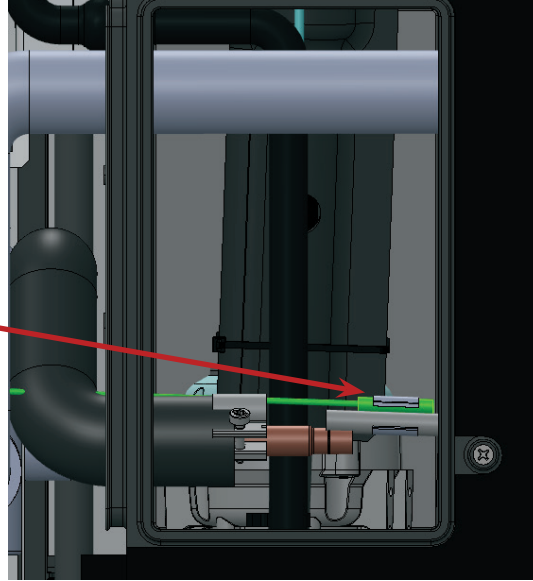
Fig. 2. Proximity switch moxex connector (disconnected).

Troubleshooting & Diagnosis

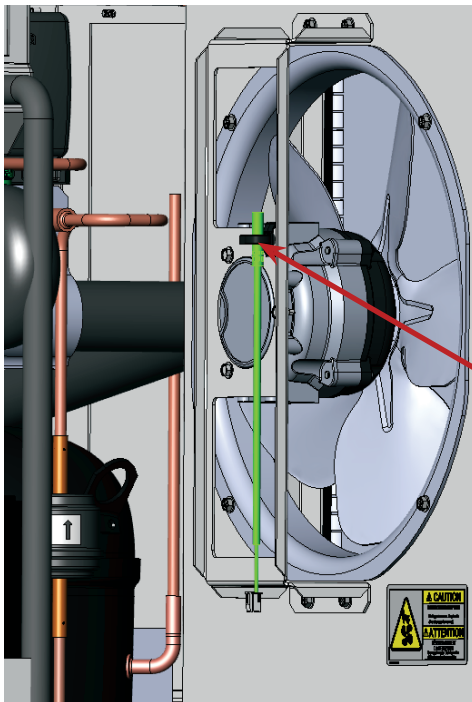
Temperature Probes

Locations

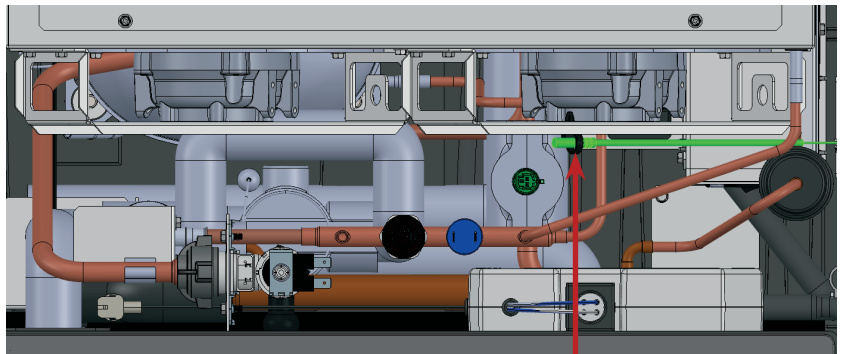
T-1 Temperature Probe
Located on the evaporator outlet



Left Side View



Right Side View



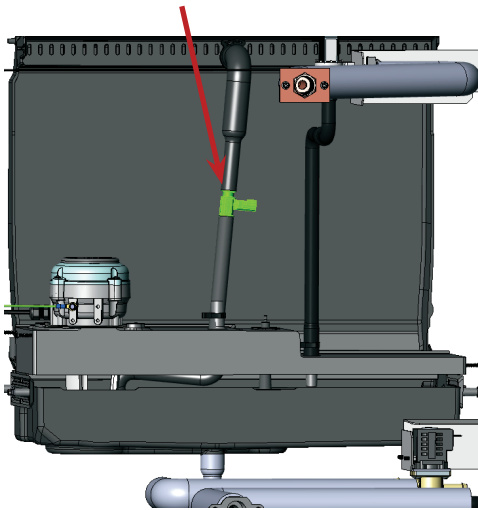
Top View

T-2 Temperature Probe
Located on the Condenser Fan mounting bracket
Reads ambient temperatures

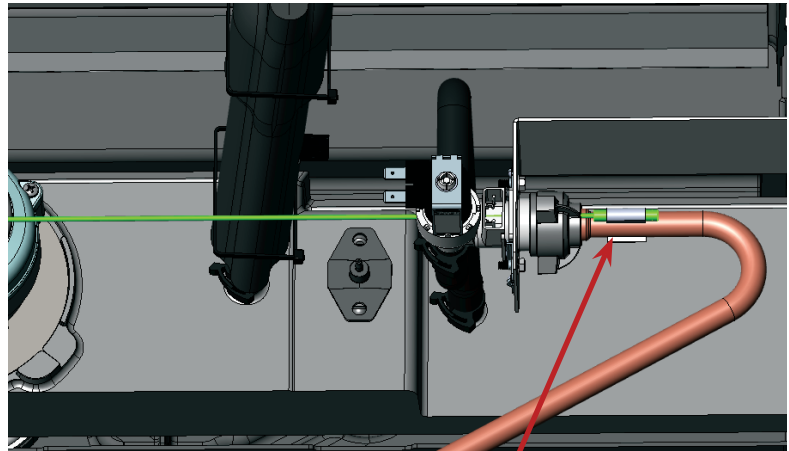
Troubleshooting & Diagnosis (cont.)

Locations (cont.)

T-3 Temperature Probe
 Located in the Distributer Water Supply Line.
 Used to measure Sump Tank water temps.



Rear View



Top View

T-4 Temperature Probe
 Located on the Water Inlet Line.
 Used to measure incoming water temps.

Resistances

T1/T4

Temperature	Resistance
°F (C°)	K-Ohms
21 (-6)	35.47
23 (-5)	33.93
25 (-4)	32.46
27 (-3)	31.07
28 (-2)	29.75
30 (-1)	28.5
32 (0)	27.28
34 (1)	26.132
36 (2)	25.041
37 (3)	24.002
39 (4)	23.011
41 (5)	22.067
43 (6)	21.166

T2

Temperature	Resistance
°F (C°)	K-Ohms
-40 (-40)	195.65
-31 (-35)	148.17
-22 (-30)	113.35
-13 (-25)	87.56
-4 (-20)	68.24
5 (-15)	53.65
14 (-10)	42.51
23 (-5)	33.89
32 (0)	27.22
41 (5)	22.02
50 (10)	17.93
59 (15)	14.67
68 (20)	12.08
77 (25)	10
86 (30)	8.32

T3

Temperature	Resistance
°F (C°)	K-Ohms
-40 (-40)	333.6
-31 (-35)	241.1
-22 (-30)	176.1
-13 (-25)	129.9
-4 (-20)	96.8
5 (-15)	72.81
14 (-10)	55.25
23 (-5)	42.29
32 (0)	32.64
41 (5)	25.39
50 (10)	19.9
59 (15)	15.71
68 (20)	12.49
77 (25)	10
86 (30)	0.8056
95 (35)	0.653
104 (40)	0.5325

Troubleshooting & Diagnosis

Transducer Diagnosis

Read voltage between the black and white wires at the control board. See fig. 1

Low Pressure Transducer	
VDC	PSI
0.5	0
1.0	25
1.5	50
2.0	75
2.5	100
3.0	125
3.5	150
4.0	175
4.5	200

High Pressure Transducer	
VDC	PSI
0.5	0
1.0	50
1.5	100
2.0	150
2.5	200
3.0	250
3.5	300
4.0	350
4.5	400

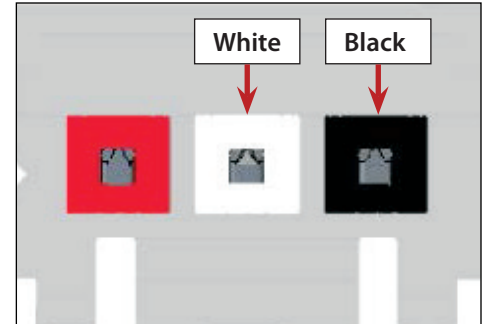


Fig. 1. Measure between the black and white wires.

Compressor Diagnosis

! USER ACTION!



Do not unsolder a defective component. Cut defective components out of the refrigeration system.

1. Check the resistance between the compressor terminals.
 - a. Single Phase
 - i. Disconnect power.
 - ii. Remove the wires from the compressor terminals.
 - iii. Check the resistance between C and S, C and R, and S and R.

NOTICE > When added together, the resistance values between C and S and between C and R should equal the resistance value between S and R

NOTICE > If there is a resistance reading between S and R with open readings between C and S and between C and R, then the overload is open.
 - iv. Let the compressor cool. Then, check the readings again.
 - b. Three Phase
 - i. Disconnect power.
 - ii. Remove the wires from the compressor terminals.
 - iii. Check the resistance between L1 and L2, L2 and L3, and L3 and L1.

NOTICE > The resistance values should all be equal.

NOTICE > If there are open readings between L1 and L2, L2 and L3, and L3 and L1, then the overload is open.
 - iv. Let the compressor cool. Then, check the readings again.
2. Check motor windings to ground.
 - a. Check continuity between all three terminals and the compressor shell or copper refrigeration line.

NOTICE > If continuity is present, the compressor windings are grounded and the compressor should be replaced.

NOTICE > Scrape the metal surface to get good contact.
3. Verify compressor pulls locked rotor amps.
 - a. Try to start the compressor with a start cord or a correctly sized 3N1.

NOTICE > Always check if the voltage drops below the name plate voltage.
 - i. If the compressor starts, then replace all start components.
 - ii. If the compressor does not start, then replace the compressor.

Troubleshooting & Diagnosis (cont.)

Water Regulating Valve (Water-Cooled Units Only)

! USER ACTION!

!

Do not unsolder a defective component. Cut defective components out of the refrigeration system.

The water regulating valve maintains the freeze cycle discharge pressure.

1. During freeze cycle is the head pressure low or high (see R-290 Temperature Pressure Chart (pg. 79))?
2. Adjust valve to increase or decrease pressure.
3. Verify the condenser water meets specifications.

Condenser Fan Speed Control

Fan speeds are controlled by the high side transducer.

Parameters	Factory Setting (PSI)	Condenser Fan Speed
PS1	160 or below	Fan Off (Low Ambient Protection)
PS2	165 or above	Low Speed
PS3	230 or above	High Speed

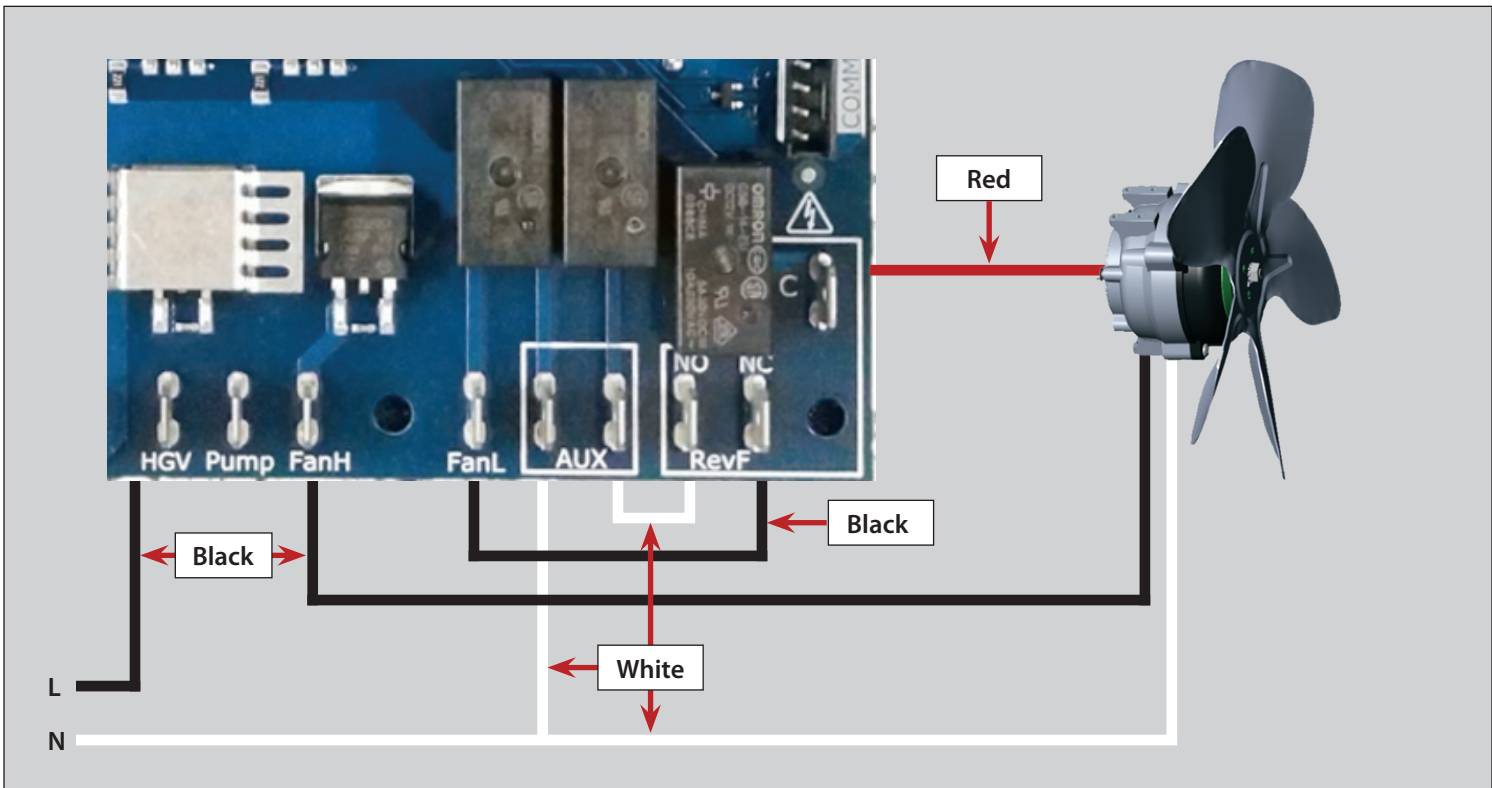
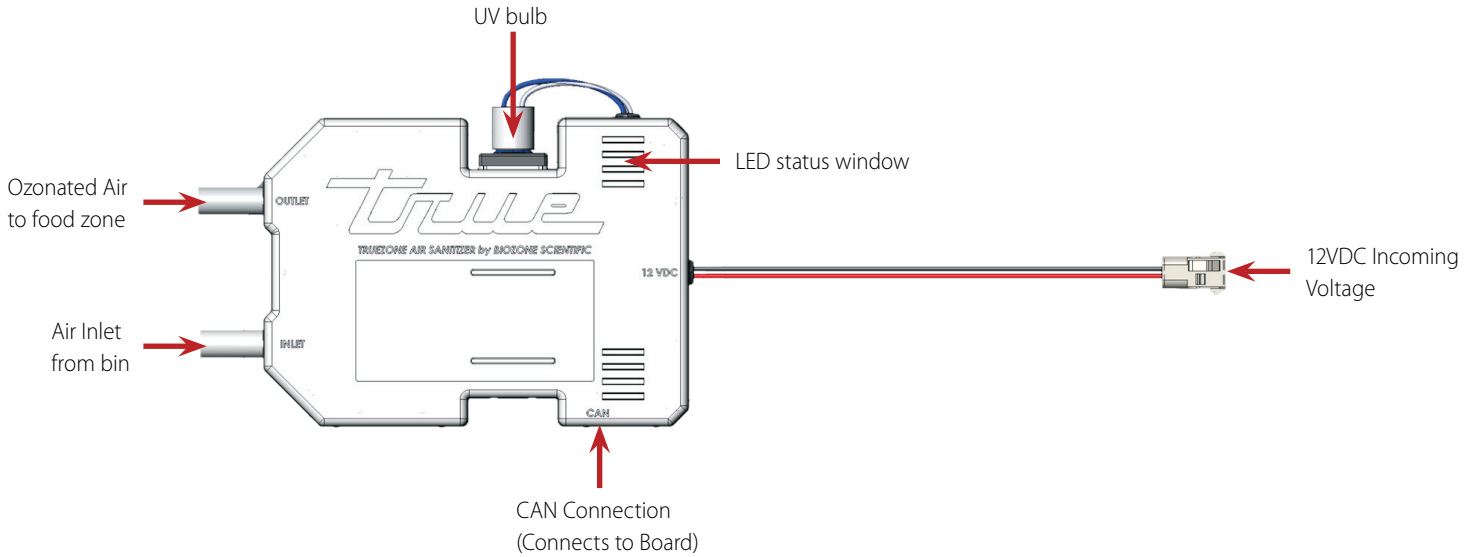


Fig. 1. Condenser fan motor wire configuration.

Troubleshooting & Diagnosis

TrueZone™ (UV System)

Optional accessory.



LED Indications:

- Steady Blue - Ballast On and Operating correctly
- Slow Flashing Red - Lamp low current
- Fast Flashing Red - Lamp overload (high current)
- Steady Red - Lamp time exceeded
- Lamp Operating Time is reset when new bulb is detected

System Health:

- Bit 0: 1 = Lamp has a valid serial number, 0 = No or invalid serial number detected
- Bit 1: 1 = Fault - lamp has low current (Ballast is on)
- Bit 2: 1 = Fault - lamp overload (high current)
- Bit 3: 1 = Fault - lamp time exceeded - lamp needs to be replaced
- Bit 4: 1 = Ballast is on, 0 = Ballast off (high current, good SN detected)

System Health Codes can be read by depressing the UV icon located in the MENU

Troubleshooting & Diagnosis (cont.)

R-290 Temperature Pressure Charts

Temperature	Pressure
°F(C°)	psig ("Hg)
-92.57 (-69.21)	(22)
-85.05 (-65.03)	(20)
-78.72 (-61.51)	(18)
-73.23 (-58.46)	(16)
-68.36 (-55.76)	(14)
-63.96 (-53.31)	(12)
-59.95 (-51.08)	(10)
-56.26 (-49.03)	(8)
-52.82 (-47.12)	(6)
-49.61 (-45.34)	(4)
-46.59 (-43.66)	(2)
-43.74 (-42.08)	0
-41.04 (-40.58)	1
-38.46 (-39.14)	2
-36.01 (-37.78)	3
-33.66 (-36.48)	4
-31.40 (-35.22)	5
-29.23 (-34.02)	6
-27.14 (-32.86)	7
-25.13 (-31.74)	8
-23.18 (-30.66)	9
-21.29 (-29.61)	10
-19.46 (-28.59)	11
-17.69 (-27.61)	12
-15.96 (-26.64)	13
-14.28 (-25.71)	14
-12.65 (-24.81)	15
-11.06 (-23.92)	16
-9.50 (-23.06)	17
-7.99 (-22.22)	18
-6.50 (-21.39)	19
-5.06 (-20.59)	20
-3.64 (-19.80)	21
-2.25 (-19.03)	22
-0.89 (-18.27)	23
0.44 (-17.53)	24
1.75 (-16.81)	25
3.03 (-16.09)	26
4.29 (-15.39)	27

Temperature	Pressure
°F(C°)	psig ("Hg)
5.52 (-14.71)	28
6.74 (-14.03)	29
7.93 (-13.37)	30
9.10 (-12.72)	31
10.26 (-12.08)	32
11.39 (-11.45)	33
12.51 (-10.83)	34
13.61 (-10.22)	35
14.70 (-9.61)	36
15.76 (-9.02)	37
16.82 (-8.43)	38
17.86 (-7.86)	39
18.88 (-7.29)	40
19.89 (-6.73)	41
20.88 (-6.18)	42
21.87 (-5.63)	43
22.84 (-5.09)	44
23.80 (-4.56)	45
24.74 (-4.03)	46
25.68 (-3.51)	47
26.60 (-3.00)	48
27.51 (-2.49)	49
28.42 (-1.99)	50
29.31 (-1.49)	51
30.19 (-1.01)	52
31.06 (-0.52)	53
31.92 (-0.04)	54
32.77 (0.43)	55
33.62 (0.90)	56
34.45 (1.36)	57
35.28 (1.82)	58
36.10 (2.28)	59
36.91 (2.73)	60
37.71 (3.17)	61
38.50 (3.61)	62
39.29 (4.05)	63
40.07 (4.48)	64
40.84 (4.91)	65
41.60 (5.33)	66

Temperature	Pressure
°F(C°)	psig ("Hg)
42.36 (5.76)	67
43.11 (6.17)	68
43.86 (6.59)	69
44.59 (6.99)	70
48.19 (8.99)	75
51.63 (10.91)	80
54.95 (12.75)	85
58.13 (14.52)	90
61.23 (16.24)	95
64.21 (17.89)	100
67.10 (19.50)	105
69.90 (21.06)	110
72.62 (22.57)	115
75.27 (24.04)	120
77.84 (25.47)	125
80.35 (26.86)	130
82.79 (28.22)	135
85.18 (29.54)	140
87.51 (30.84)	145
89.78 (32.10)	150
92.01 (33.34)	155
94.19 (34.55)	160
96.32 (35.73)	165
98.41 (36.89)	170
100.5 (38.06)	175
102.5 (39.17)	180
104.4 (40.22)	185
106.4 (41.33)	190
108.3 (42.39)	195
110.2 (43.44)	200
112.0 (44.44)	205
113.8 (45.44)	210
115.6 (46.44)	215
117.3 (47.39)	220
119.1 (48.39)	225
120.8 (49.33)	230
122.4 (50.22)	235
124.1 (51.17)	240
125.7 (52.06)	245

Troubleshooting & Diagnosis

R-290 Temperature Pressure Charts (cont.)

Temperature	Pressure
°F(C°)	psig ("Hg)
127.3 (52.94)	250
128.9 (53.83)	255
130.4 (54.67)	260
132.0 (55.56)	265
133.5 (56.39)	270
135.0 (57.22)	275
136.5 (58.06)	280
137.9 (58.83)	285
139.4 (59.67)	290
140.8 (60.44)	295
142.2 (61.22)	300
143.6 (62.00)	305
145.0 (62.78)	310
146.3 (63.50)	315
147.7 (64.28)	320
149.0 (65.00)	325
150.3 (65.72)	330
151.6 (66.44)	335
152.9 (67.17)	340
154.2 (67.89)	345
155.4 (68.56)	350
156.7 (69.28)	355
157.9 (69.94)	360
159.1 (70.61)	365
160.3 (71.28)	370
161.5 (71.94)	375
162.7 (72.61)	380

Diagrams

Diagrams

Wiring Diagrams & Control Layout

⚠ WARNING!



- Control board is fragile. Handle carefully.
- The control board contains integrated circuits, which are susceptible to failure due to static discharge. It is especially important to touch the metal part of the ice machine when handling or replacing the control board.
- DO NOT short out the power supply to test for voltage.
- Always replace the whole control board assembly if the control board goes bad.

See wiring diagram location in fig. 1. See control board layout in figs. 2 and 3.

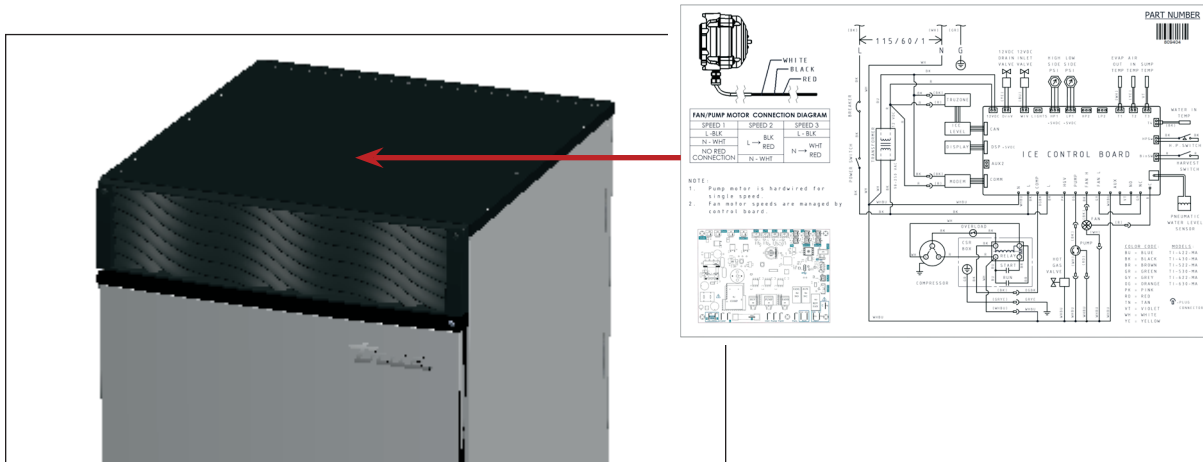


Fig. 1. Wiring diagram located under the top panel.

Diagrams (cont.)

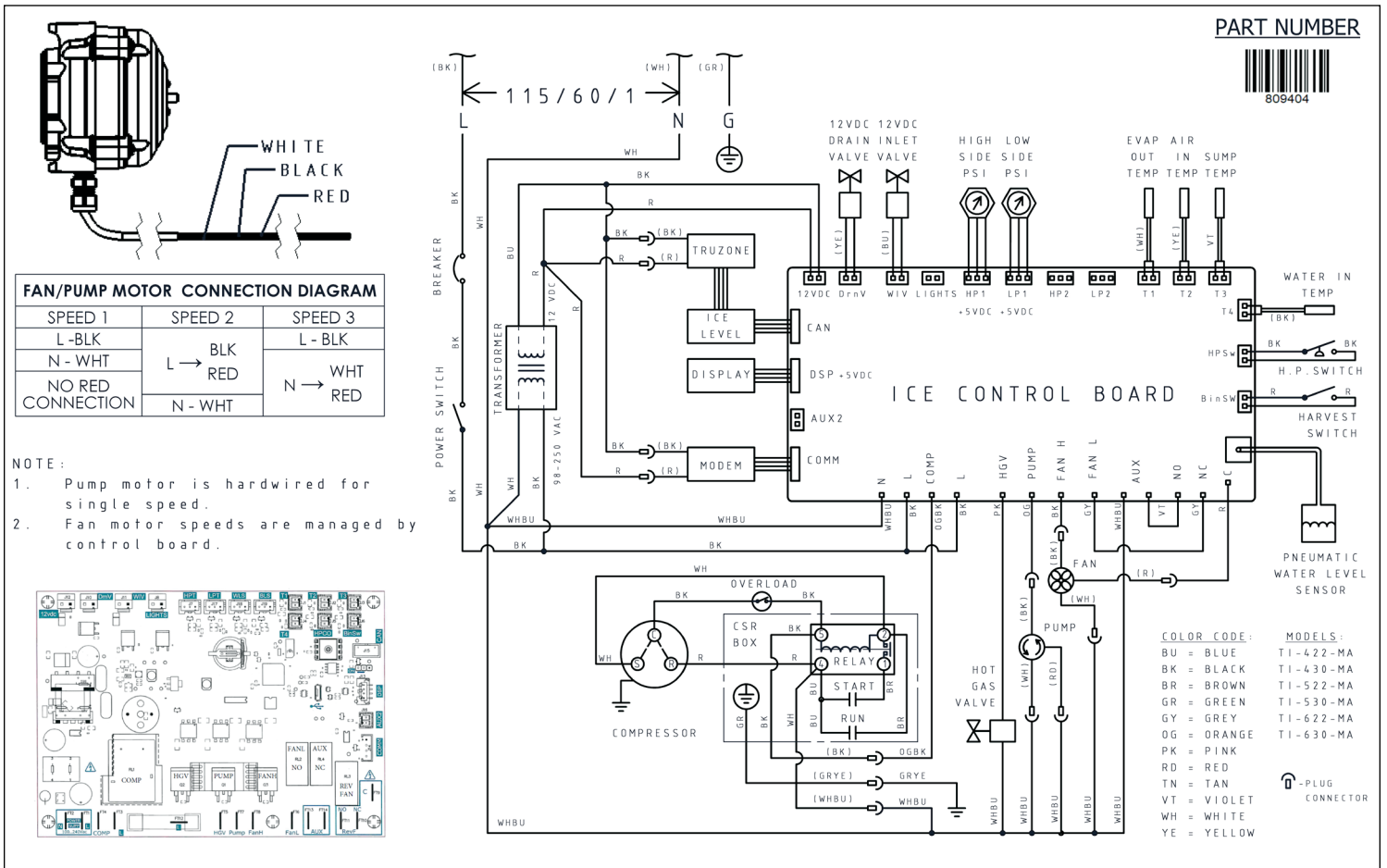


Fig. 2. Wiring diagram.

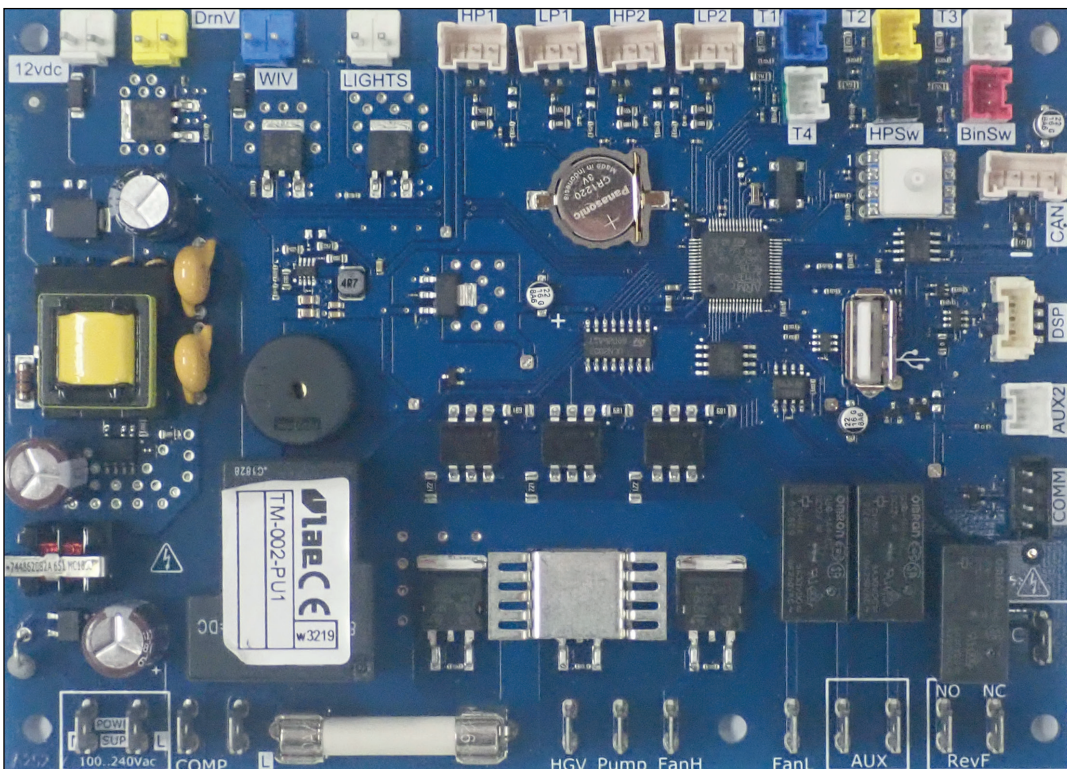
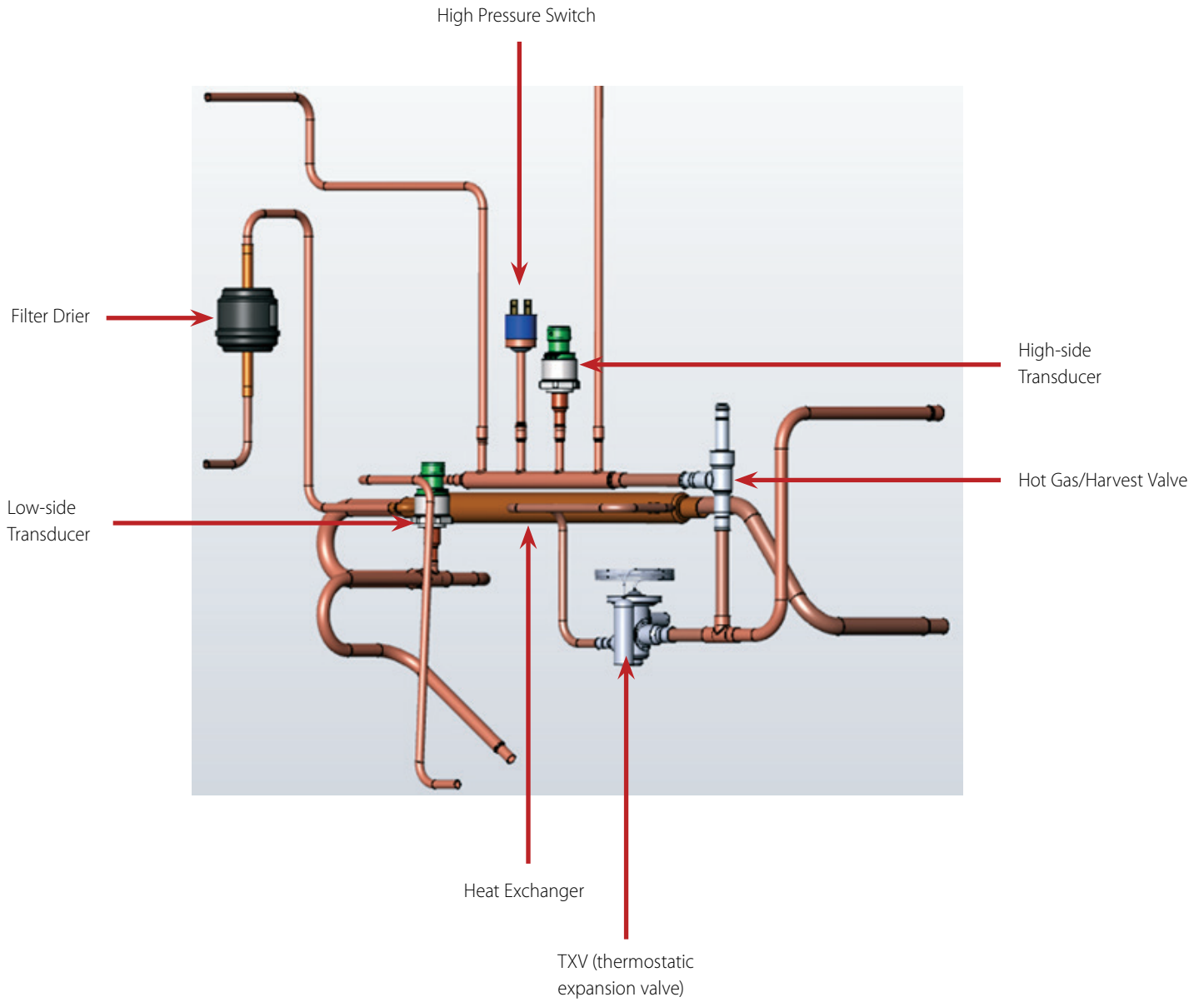


Fig. 3. Control board assembly.

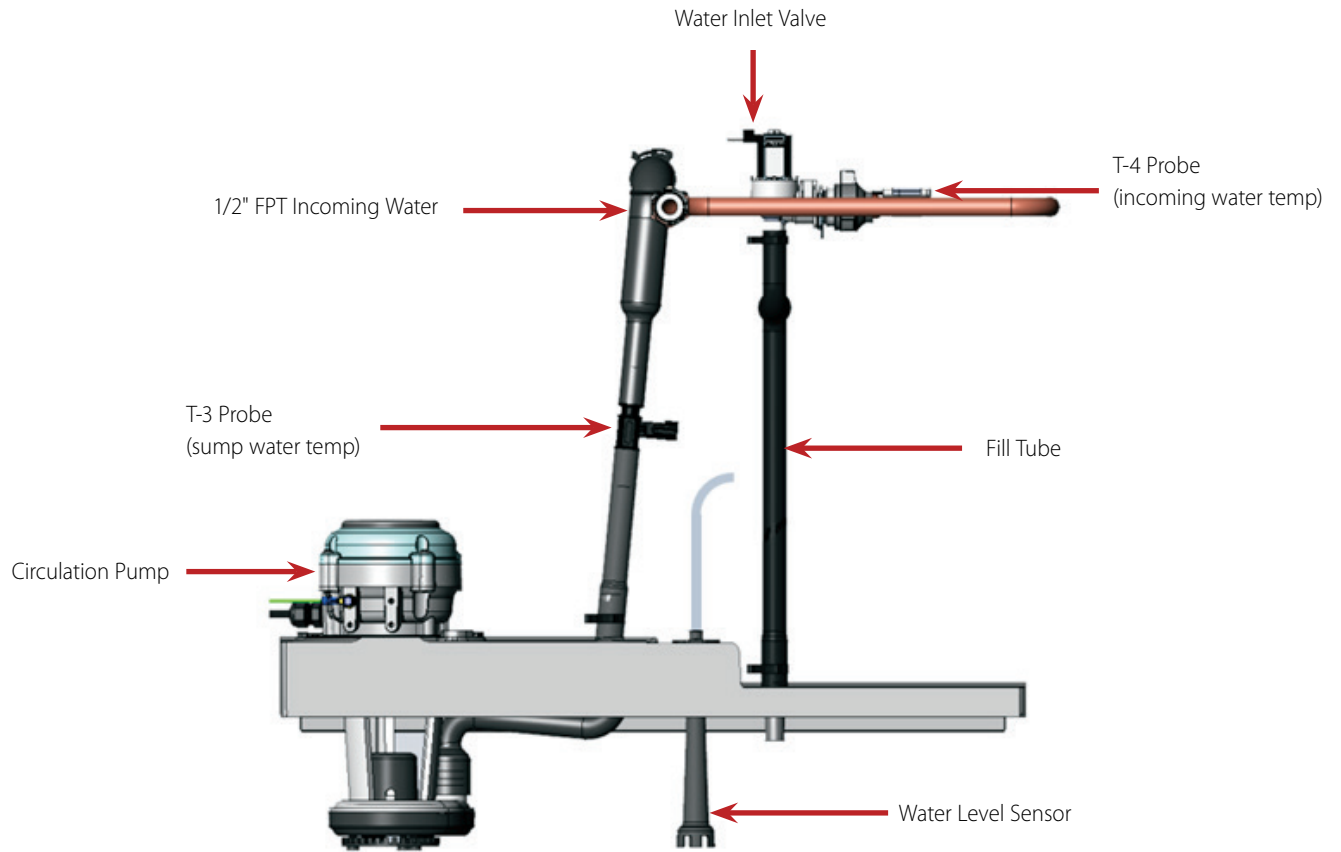
Diagrams (cont.)

Refrigeration Freeze Circuit



Diagrams (cont.)

Water Circuit



Air-Cooled Ice Machine Specifications & Performance Data

Air-Cooled Ice Machine Specifications & Performance Data

NOTICE!



All pressures are recorded five (5) min into the freeze cycle.

Air-Cooled Ice Machine Specifications & Performance Data (cont.)

TCIM-422-HA1-A/TI-422-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	6.9
Minimum Circuit Ampacity	15
Maximum Fuse Size	15
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	3.8
Water Consumption (gal/100lb) [All Ambients]	14
Batch Size [lb(kg)]	4-4.4 (1.8-2)
Refrigerant [oz(g)]	5.25 (148.8)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	443	202	419	190	395	179
	80/27	428	195	407	185	381	173
	90/32	413	188	396	180	367	167
	100/38	398	181	376	171	354	161
Electric Consumption Watts	70/21	603		635		667	
	80/27	620		654		685	
	90/32	632		673		699	
	100/38	654		688		723	
Freeze Time mm:ss	70/21	12:33		12:58		13:23	
	80/27	12:45		13:24		13:36	
	90/32	13:28		13:49		14:21	
	100/38	14:28		14:57		15:26	
Harvest Time mm:ss	70/21	01:09		00:57		00:44	
	80/27	01:04		00:50		00:41	
	90/32	00:59		00:44		00:38	
	100/38	00:55		00:45		00:35	
Head Pressure PSIG - kPa	70/21	194	1338	201	1387	208	1435
	80/27	204	1408	206	1421	219	1510
	90/32	215	1479	211	1456	230	1587
	100/38	225	1549	233	1605	241	1662
Suction Pressure PSIG - kPa	70/21	40	277	45	310	48	331
	80/27	41	281	45	310	49	336
	90/32	41	285	45	310	49	340
	100/38	42	289	46	317	50	345
Total Heat of Rejection from Condenser		5735 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]					

Air-Cooled Ice Machine Specifications & Performance Data

TCIM-430-HA1-A/TI-430-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	6.8
Minimum Circuit Ampacity	15
Maximum Fuse Size	15
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	3.75
Water Consumption (gal/100lb) [All Ambients]	14
Batch Size [lb(kg)]	4-4.4 (1.8-2)
Refrigerant [oz(g)]	5.25 (148.8)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	443	201	411	187	395	179
	80/27	430	195	397	181	381	173
	90/32	417	189	383	174	367	167
	100/38	404	184	375	171	354	161
Electric Consumption Watts	70/21	581		605		628	
	80/27	603		626		652	
	90/32	621		646		671	
	100/38	648		674		700	
Freeze Time mm:ss	70/21	11:47		12:26		13:06	
	80/27	12:18		13:57		13:41	
	90/32	12:50		13:28		14:16	
	100/38	13:21		14:06		14:51	
Harvest Time mm:ss	70/21	01:10		01:07		01:04	
	80/27	01:03		01:00		00:57	
	90/32	00:55		00:54		00:50	
	100/38	00:47		00:45		00:43	
Head Pressure PSIG - kPa	70/21	180	1241	186	1284	192	1327
	80/27	194	1336	198	1362	207	1428
	90/32	208	1434	209	1441	222	1533
	100/38	222	1529	229	1582	237	1635
Suction Pressure PSIG - kPa	70/21	41	283	46	319	50	342
	80/27	42	287	46	319	50	347
	90/32	42	291	46	319	51	351
	100/38	43	294	47	325	52	356

Total Heat of Rejection from Condenser

5891 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]

Air-Cooled Ice Machine Specifications & Performance Data (cont.)

TCIM-522-HA1-A/TI-522-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	8.5
Minimum Circuit Ampacity	15
Maximum Fuse Size	15
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	4
Water Consumption (gal/100lb) [All Ambients]	14
Batch Size [lb(kg)]	5-5.4 (2.2-2.4)
Refrigerant [oz(g)]	4.3 (121.9)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	556	253	515	234	473	215
	80/27	545	248	511	232	465	211
	90/32	535	243	508	231	455	207
	100/38	524	238	485	221	447	203
Electric Consumption Watts	70/21	825		854		883	
	80/27	861		875		921	
	90/32	892		896		956	
	100/38	933		966		999	
Freeze Time mm:ss	70/21	11:40		12:43		13:46	
	80/27	12:02		12:45		14:12	
	90/32	12:24		12:48		14:39	
	100/38	12:46		13:55		15:05	
Harvest Time mm:ss	70/21	01:20		01:13		01:07	
	80/27	01:13		01:07		01:02	
	90/32	01:06		01:00		00:56	
	100/38	00:59		00:55		00:50	
Head Pressure PSIG - kPa	70/21	208	1436	214	1478	220	1519
	80/27	221	1525	220	1517	234	1613
	90/32	234	1616	226	1556	248	1710
	100/38	247	1705	254	1754	262	1803
Suction Pressure PSIG - kPa	70/21	40	277	43	300	47	325
	80/27	41	283	43	300	48	332
	90/32	42	289	43	300	49	339
	100/38	43	294	46	320	50	345
Total Heat of Rejection from Condenser		7730 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]					

Air-Cooled Ice Machine Specifications & Performance Data

TCIM-530-HA1-A/TI-530-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	8.1
Minimum Circuit Ampacity	15
Maximum Fuse Size	15
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	3.68
Water Consumption (gal/100lb) [All Ambients]	14.8
Batch Size [lb(kg)]	4.85-5.15 (2.2-2.35)
Refrigerant [oz(g)]	5.25 (149)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	586	266	552	251	517	235
	80/27	579	263	541	246	502	228
	90/32	571	260	529	241	488	222
	100/38	563	256	518	235	473	215
Electric Consumption Watts	70/21	791		824		856	
	80/27	805		851		896	
	90/32	819		877		936	
	100/38	833		903		976	
Freeze Time mm:ss	70/21	10:46		11:18		11:50	
	80/27	11:01		11:47		12:34	
	90/32	11:17		12:17		13:17	
	100/38	11:40		12:46		14:01	
Harvest Time mm:ss	70/21	01:33		01:15		01:08	
	80/27	01:10		01:05		01:00	
	90/32	00:57		00:55		00:53	
	100/38	00:50		00:48		00:46	
Head Pressure PSIG - kPa	70/21	197	1356	204	1407	211	1458
	80/27	200	1379	215	1482	227	1565
	90/32	205	1413	225	1549	243	1675
	100/38	210	1448	235	1620	260	1790
Suction Pressure PSIG - kPa	70/21	38	265	41	283	45	311
	80/27	39	269	41	283	46	317
	90/32	40	279	42	293	47	324
	100/38	41	283	43	296	49	335

Total Heat of Rejection from Condenser

7600 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]

Air-Cooled Ice Machine Specifications & Performance Data (cont.)

TCIM-622-HA1-A/TI-622-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	10.1
Minimum Circuit Ampacity	15
Maximum Fuse Size	20
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	4
Water Consumption (gal/100lb) [All Ambients]	14
Batch Size [lb(kg)]	5-5.4 (2.2-2.4)
Refrigerant [oz(g)]	4.9 (138.9)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	628	285	519	268	553	252
	80/27	602	274	574	261	531	241
	90/32	576	262	557	253	507	231
	100/38	550	250	517	235	485	220
Electric Consumption Watts	70/21	913		942		970	
	80/27	955		977		1015	
	90/32	993		1013		1056	
	100/38	1040		1073		1106	
Freeze Time mm:ss	70/21	10:25		11:00		11:34	
	80/27	11:11		11:29		12:25	
	90/32	11:59		11:59		13:18	
	100/38	12:45		13:27		14:09	
Harvest Time mm:ss	70/21	01:08		00:58		00:48	
	80/27	01:02		00:50		00:44	
	90/32	00:56		00:43		00:40	
	100/38	00:50		00:43		00:36	
Head Pressure PSIG - kPa	70/21	204	1409	210	1449	216	1488
	80/27	219	1513	220	1519	232	1598
	90/32	235	1620	231	1590	248	1711
	100/38	250	1724	257	1773	264	1821
Suction Pressure PSIG - kPa	70/21	39	272	43	297	45	312
	80/27	40	277	43	297	46	317
	90/32	41	283	43	297	47	323
	100/38	42	288	45	308	48	329
Total Heat of Rejection from Condenser		8000 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]					

Air-Cooled Ice Machine Specifications & Performance Data

TCIM-630-HA1-A/TI-630-MA-S1-A

AC Supply Voltage (V/Hz/Ph)	115/60/1
Amperage [5 min Freeze AT 104°F (40°C) / WT 80°F (27°C)]	9.7
Minimum Circuit Ampacity	15
Maximum Fuse Size	20
Electrical Consumption (kWh/100lb) [AT 90°F (32°C) / WT 70°F (21°C)]	3.8
Water Consumption (gal/100lb) [All Ambients]	14
Batch Size [lb(kg)]	5-5.4 (2.2-2.4)
Refrigerant [oz(g)]	5.1 (144.6)

Performance Data Sheet	Air Temp (F°/C°)	Water Temp (°F/C°)					
		50/10		70/21		90/32	
Ice Production in 24 hours lb/day - kg/day	70/21	622	283	583	265	545	248
	80/27	603	274	576	262	528	240
	90/32	583	265	568	258	511	232
	100/38	564	257	529	241	494	225
Electric Consumption Watts	70/21	916		937		958	
	80/27	952		963		996	
	90/32	984		990		1029	
	100/38	1025		1049		1072	
Freeze Time mm:ss	70/21	10:33		11:08		11:44	
	80/27	11:01		11:22		12:15	
	90/32	11:29		11:35		12:46	
	100/38	11:57		12:37		13:17	
Harvest Time mm:ss	70/21	01:18		01:10		01:01	
	80/27	01:10		00:59		00:54	
	90/32	01:02		00:48		00:48	
	100/38	00:54		00:48		00:42	
Head Pressure PSIG - kPa	70/21	198	1368	203	1399	207	1429
	80/27	213	1469	214	1475	222	1534
	90/32	222	1572	225	1551	238	1642
	100/38	243	1673	248	1710	253	1747
Suction Pressure PSIG - kPa	70/21	39	269	42	286	43	299
	80/27	40	276	42	286	44	306
	90/32	41	283	42	286	46	314
	100/38	42	290	44	306	47	322

Total Heat of Rejection from Condenser

8149 BTU/hr [AT 90°F (32°C) / WT 70°F (21°C)]

Warranty Information (USA & Canada Only)

Warranty Information

To view and download the
Warranty Information for USA & Canada,
please scan the QR code below.





[truefg.com](https://www.truefg.com)