

Hoshizaki America, Inc.

Modular Flaker

Models

FD-1001MAH(-C)

FD-1001MWH(-C)

FD-1001MRH(-C)

FD-1001MLH(-C)



“A Superior Degree
of Reliability”

www.hoshizaki.com

INSTRUCTION MANUAL



Issued: 4-24-2009

— IMPORTANT —

Only qualified service technicians should install, service, and maintain the icemaker. No installation, service, or maintenance should be undertaken until the technician has thoroughly read this Instruction Manual. Likewise, the owner/manager should not proceed to operate the icemaker until the installer has instructed them on its proper operation. Failure to install, operate, and maintain the equipment in accordance with this manual may adversely affect safety, performance, component life, and warranty coverage.

Hoshizaki provides this manual primarily to assist qualified service technicians in the installation, maintenance, and service of the icemaker.

Should the reader have any questions or concerns which have not been satisfactorily addressed, please call, write, or send an e-mail message to the Hoshizaki Technical Support Department for assistance.

HOSHIZAKI AMERICA, INC.
618 Highway 74 South
Peachtree City, GA 30269

Attn: Hoshizaki Technical Support Department

Phone: 1-800-233-1940 Technical Support
(770) 487-2331

Fax: 1-800-843-1056
(770) 487-3360

E-mail: techsupport@hoshizaki.com

Web Site: www.hoshizaki.com

NOTE: To expedite assistance, all correspondence/communication **MUST** include the following information:

- Model Number _____
- Serial Number _____
- Complete and detailed explanation of the problem.

IMPORTANT

This manual should be read carefully before the icemaker is installed and operated. Only qualified service technicians should install, service, and maintain the icemaker. Read the warnings contained in this booklet carefully as they give important information regarding safety. Please retain this booklet for any further reference that may be necessary.

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Important Safety Information

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, or damage to the unit.

⚠ WARNING Indicates a hazardous situation which could result in death or serious injury.

CAUTION Indicates a situation which could result in damage to the unit.

IMPORTANT Indicates important information about the use and care of the unit.

⚠ WARNING

This icemaker should be destined only to the use for which it has been expressly conceived. Any other use should be considered improper and therefore dangerous. The manufacturer cannot be held responsible for eventual damage caused by improper, incorrect, and unreasonable use.

To reduce the risk of death, electric shock, serious injury, or fire, follow basic precautions including the following:

- Electrical connection must be hard-wired and must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or severe damage to equipment.
- This unit requires an independent power supply. See the nameplate for proper voltage and breaker/fuse size. Failure to use a proper breaker or fuse can result in a tripped breaker, blown fuse, or damage to existing wiring. This could lead to heat generation or fire.
- **THIS UNIT MUST BE GROUNDED.** Failure to properly ground this unit could result in death or serious injury.
- This unit should be disassembled or repaired only by qualified service personnel to reduce the risk of electric shock, injury, or fire.
- Do not make any alterations to the unit. Alterations could result in electric shock, injury, fire, or damage to the unit.

I. Specifications

A. Nameplate Rating


1. FD-1001MAH(-C) (air-cooled)


HOSHIZAKI ICE MAKER

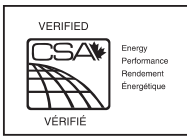
MODEL NUMBER	FD-1001MAH
SERIAL NUMBER	
AC SUPPLY VOLTAGE	208-230/60/1 (3 WIRE WITH NEUTRAL FOR 115V)
COMPRESSOR	240V 4.2RLA 34LRA
GEAR MOTOR	120V 3.0FLA 1/4HP
FAN MOTOR	115V 0.85FLA 1/15HP
OTHER	120V 0.03A
MAXIMUM FUSE SIZE	15 AMPS
MAX HACR BREAKER (USA ONLY)	15 AMPS
MAX CIRC BREAKER (CANADA ONLY)	15 AMPS
MINIMUM CIRCUIT AMPACITY	15 AMPS
DESIGN PRESSURE	HI-427PSI LO-230PSI
REFRIGERANT	404A 1 LB 12 OZ.

**MOTOR-COMPRESSOR THERMALLY PROTECTED,
NOT INTENDED FOR OUTDOOR USE!**

Hoshizaki America, Inc.
Peachtree City, GA
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**UL**
ICE MAKER WITHOUT
STORAGE MEANS
946Z

**NSF**
COMPONENT

**VERIFIED**
Energy
Performance
Rendement
Énergétique
VERIFIÉ
186090

Note: Only the "MODEL NUMBER" is replaced for FD-1001MAH-C.

See the nameplate for electrical and refrigeration specifications. This nameplate is located on the rear panel.

Since this nameplate is located on the rear panel of the icemaker, it cannot be read when the back of the icemaker is against a wall or against another piece of kitchen equipment. Therefore, the necessary electrical and refrigeration information is also on the rating label, which can be easily seen by removing only the front panel of the icemaker.

We reserve the right to make changes in specifications and design without prior notice.


2. FD-1001MWH(-C) (water-cooled)

HOSHIZAKI ICE MAKER


MODEL NUMBER	FD-1001MWH
SERIAL NUMBER	
AC SUPPLY VOLTAGE	208-230/60/1 (3 WIRE WITH NEUTRAL FOR 115V)
COMPRESSOR	240V 4.2RLA 34LRA
GEAR MOTOR	120V 3.0FLA 1/4HP
FAN MOTOR	-----
OTHER	120V 0.03A
MAXIMUM FUSE SIZE	15 AMPS
MAX HACR BREAKER (USA ONLY)	15 AMPS
MAX CIRC BREAKER (CANADA ONLY)	15 AMPS
MINIMUM CIRCUIT AMPACITY	15 AMPS
DESIGN PRESSURE	HI-427PSI LO-230PSI
REFRIGERANT	404A 1 LB 1 OZ.

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Note: Only the "MODEL NUMBER" is replaced for FD-1001MWH-C.

See the nameplate for electrical and refrigeration specifications. This nameplate is located on the rear panel.

Since this nameplate is located on the rear panel of the icemaker, it cannot be read when the back of the icemaker is against a wall or against another piece of kitchen equipment. Therefore, the necessary electrical and refrigeration information is also on the rating label, which can be easily seen by removing only the front panel of the icemaker.

We reserve the right to make changes in specifications and design without prior notice.


3. FD-1001MRH(-C) (remote air-cooled)


HOSHIZAKI ICE MAKER


MODEL NUMBER	FD-1001MRH
SERIAL NUMBER	
AC SUPPLY VOLTAGE	208-230/60/1 (3 WIRE WITH NEUTRAL FOR 115V)
COMPRESSOR	240V 4.2RLA 34LRA
GEAR MOTOR	120V 3.0FLA 1/4HP
FAN MOTOR	REMOTE 120V 3A MAX
OTHER	120V 0.53A
MAXIMUM FUSE SIZE	15 AMPS
MAX HACR BREAKER (USA ONLY)	15 AMPS
MAX CIRC BREAKER (CANADA ONLY)	15 AMPS
MINIMUM CIRCUIT AMPACITY	15 AMPS
DESIGN PRESSURE	HI-427PSI LO-230PSI
REFRIGERANT	404A

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**NSF**
COMPONENT

**VERIFIED**
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Rendement
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Note: Only the "MODEL NUMBER" is replaced for FD-1001MRH-C.

See the nameplate for electrical and refrigeration specifications. This nameplate is located on the rear panel.

Since this nameplate is located on the rear panel of the icemaker, it cannot be read when the back of the icemaker is against a wall or against another piece of kitchen equipment. Therefore, the necessary electrical and refrigeration information is also on the rating label, which can be easily seen by removing only the front panel of the icemaker.


We reserve the right to make changes in specifications and design without prior notice.

4. FD-1001MLH(-C) (low-side, parallel rack system)


HOSHIZAKI ICE MAKER	
MODEL NUMBER	FD-1001MLH
SERIAL NUMBER	
AC SUPPLY VOLTAGE	115-120/60/1
COMPRESSOR	---
GEAR MOTOR	120V 3.0FLA 1/4HP
FAN MOTOR	---
OTHER	120V 0.53A
MAXIMUM FUSE SIZE	15 AMPS
MAX. HACR BREAKER (USA ONLY)	15 AMPS
MAX. CIRC. BREAKER (CANADA ONLY)	15 AMPS
MINIMUM CIRCUIT AMPACITY	15 AMPS
DESIGN PRESSURE	HI-427PSI LO-230PSI
REFRIGERANT	404A

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COMPONENT



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Note: Only the "MODEL NUMBER" is replaced for FD-1001MLH-C.

See the nameplate for electrical and refrigeration specifications. This nameplate is located on the rear panel.

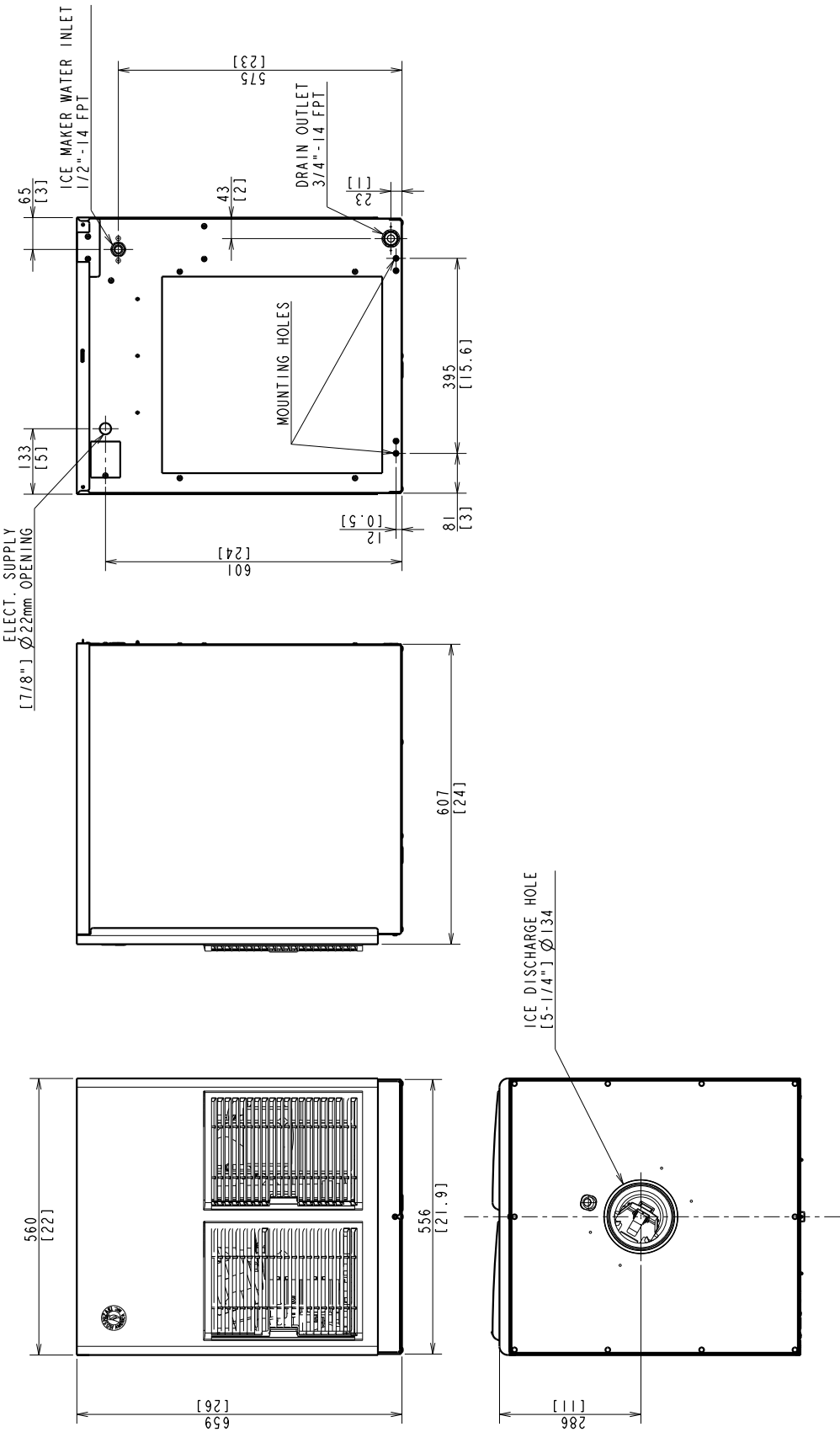
Since this nameplate is located on the rear panel of the icemaker, it cannot be read when the back of the icemaker is against a wall or against another piece of kitchen equipment. Therefore, the necessary electrical and refrigeration information is also on the rating label, which can be easily seen by removing only the front panel of the icemaker.

We reserve the right to make changes in specifications and design without prior notice.

B. Dimensions / Connections

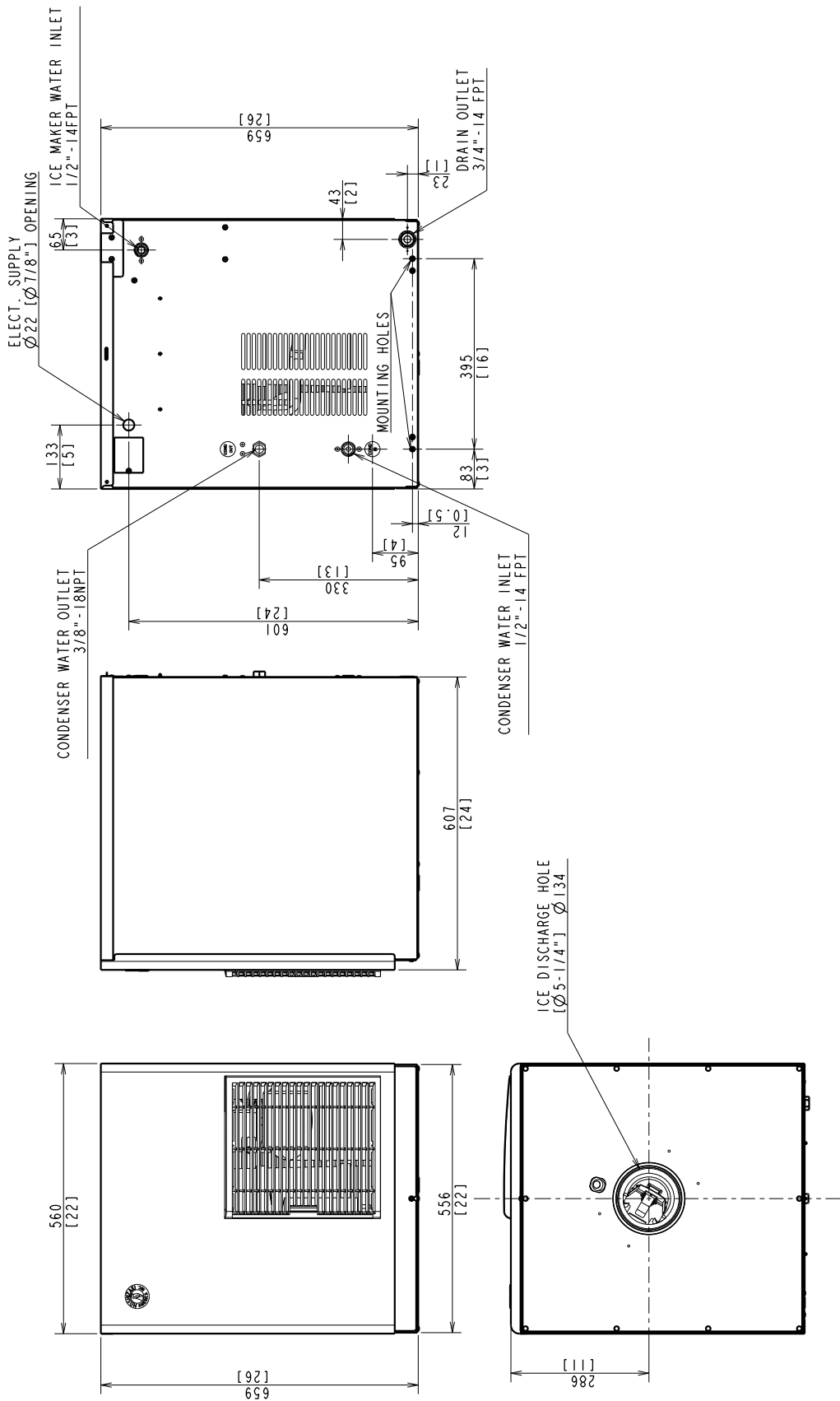
1. FD-1001MAH(-C) (air-cooled)

Unit = mm [in.]



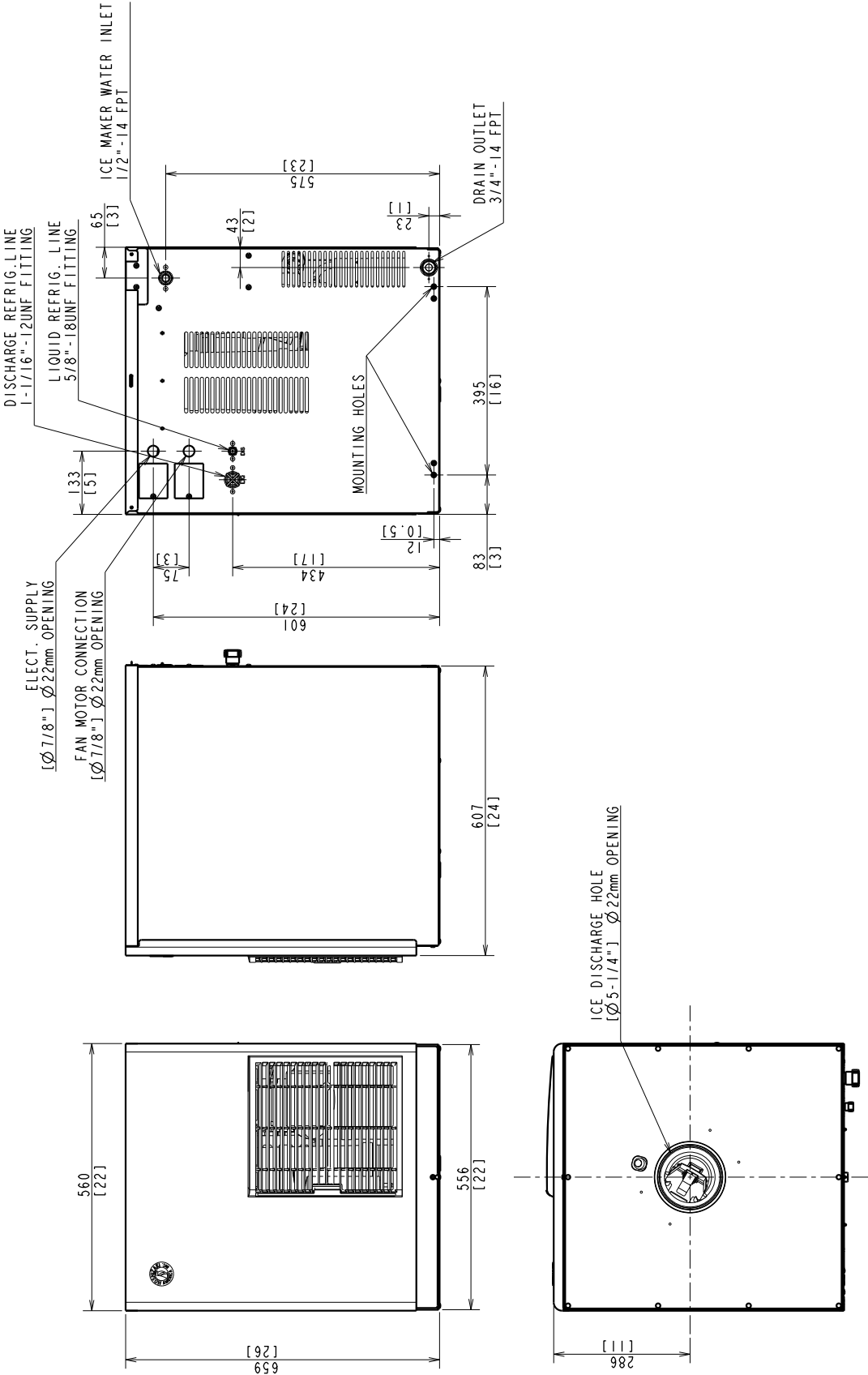
2. FD-1001MWH(-C) (water-cooled)

Unit = mm [in.]



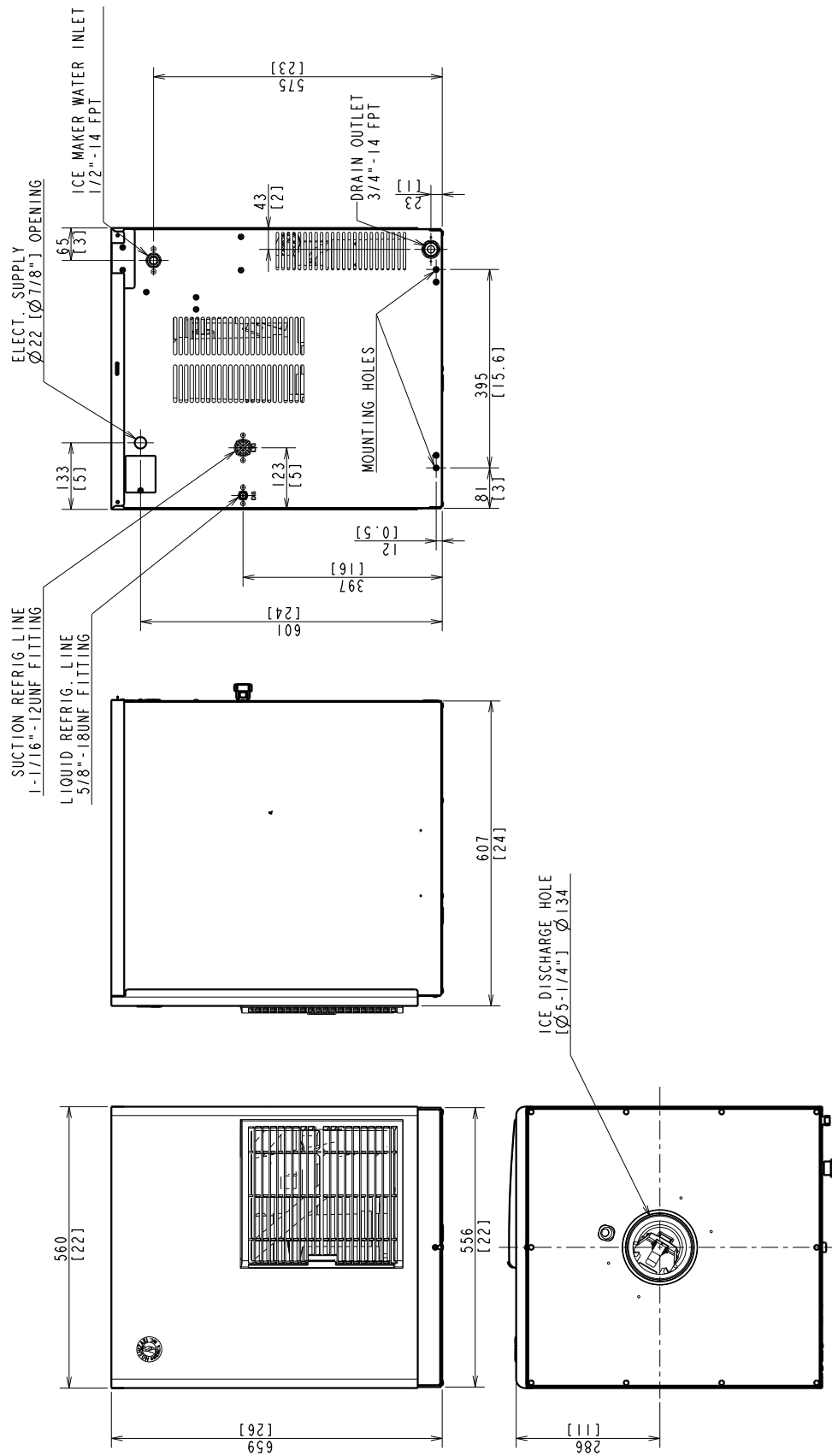
3. FD-1001MRH(-C) (remote air-cooled)

Unit = mm [in.]



4. FD-1001MLH(-C) (low side, parallel rack system)

Unit = mm [in.]



II. Installation and Operating Instructions

⚠ WARNING

1. This icemaker must be installed in accordance with all applicable national, state, and local regulations.
2. **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after installation. Make sure that none have fallen into the dispenser unit/storage bin.

A. Checks Before Installation

- Visually inspect the exterior of the shipping container and immediately report any damage to the carrier. Upon opening the container, any concealed damage should also be immediately reported to the carrier.
- Remove the shipping carton, tape, and packing material. If any are left in the icemaker, it will not work properly.
- Remove the panels to prevent damage when installing the icemaker. See "II.B. How to Remove Panels."
- Remove the package containing the accessories.
- Remove the protective plastic film from the panels. If the icemaker is exposed to the sun or to heat, remove the film after the icemaker cools.
- Check that the refrigerant lines do not rub or touch lines or other surfaces, and that the fan blade (if applicable) turns freely.
- Check that the compressor is snug on all mounting pads.
- See the nameplate on the rear panel, and check that your voltage supplied corresponds with the voltage specified on the nameplate.
- Flaker models can be installed on a storage bin 22" wide or wider. Cubelet models can be installed on either a dispenser unit or a storage bin 22" wide or wider.
- If using a storage bin, Hoshizaki Ice Storage Bin, Model B-300 series is recommended. For further options, contact your local Hoshizaki distributor.
- On remote air-cooled model, a remote condenser unit is needed. Hoshizaki Remote Condenser Unit, Model URC-5F is recommended.
- On low-side models, an R-404A parallel rack system is needed. See "II.G. Connection to an R-404A Parallel Rack System" for refrigeration circuit details.

B. How to Remove Panels

See Fig. 1

- Front Panel: Remove the screw. Lift up and towards you.
- Top Panel: Lift up at the front slightly, push rearward, and lift off.
- Side Panels: Remove the screw. Slide forward slightly and lift off.

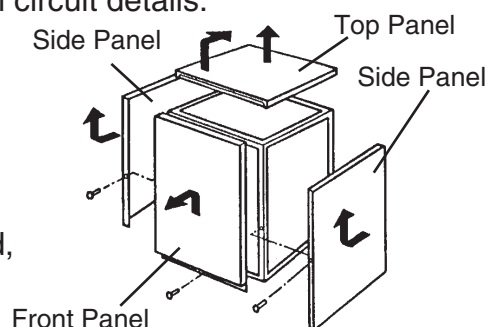


Fig. 1

C. Location

CAUTION

1. This icemaker is not intended for outdoor use. Normal operating ambient temperature should be within 45°F to 100°F (7°C to 38°C); Normal operating water temperature should be within 45°F to 90°F (7°C to 32°C). Operation of the icemaker, for extended periods, outside of these normal temperature ranges may affect icemaker performance.
2. This icemaker will not work at sub-freezing temperatures. To prevent damage to the water supply line, drain the icemaker if the air temperature is going to go below 32°F (0°C). See "III.C. Preparing the Icemaker for Long Storage."

For best operating results:

- The icemaker should not be located next to ovens, grills, or other high heat producing equipment.
- The location should provide a firm and level foundation for the equipment.
- Allow 6" (15 cm) clearance at rear and sides for proper air circulation and ease of maintenance and/or service should they be required. Allow 24" (61 cm) clearance at top to allow for removal of the auger.

D. Setup

- 1) If mounting the icemaker on top of a dispenser unit, first follow the dispenser unit's setup procedure. Note that only cubelet models can be installed on a dispenser unit; flaker models cannot be installed on a dispenser unit. If mounting the icemaker on top of a storage bin, unpack the storage bin, and attach the 4 adjustable legs provided (bin accessory) to the bottom of the storage bin.
- 2) Position the dispenser unit/storage bin in the selected permanent location.
- 3) Place the icemaker on top of the dispenser unit/storage bin.
- 4) Secure the icemaker to the dispenser unit/storage bin using the 2 mounting brackets and the bolts provided. See Fig. 2.
- 5) Level the icemaker and dispenser unit/storage bin in both the left-to-right and front-to-rear directions. If using a storage bin, adjust the storage bin legs to make the icemaker level.
- 6) Replace the panels in their correct positions.

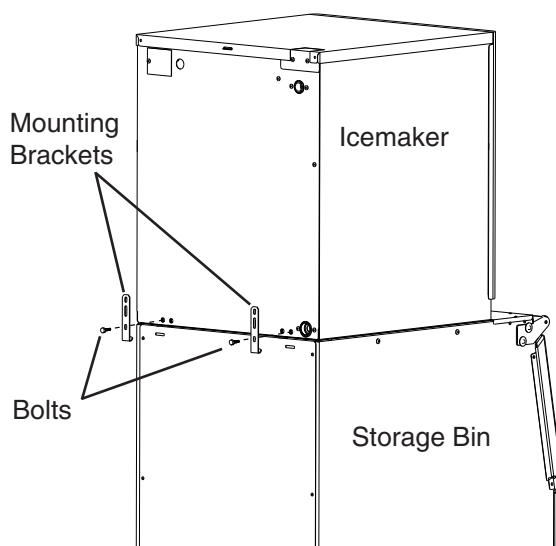


Fig. 2

E. Electrical Connection

⚠ WARNING

For All Models

1. Electrical connection must be hard-wired and must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or severe damage to equipment.
2. This unit requires an independent power supply. See the nameplate for proper voltage and breaker/fuse size. Failure to use a proper breaker or fuse can result in a tripped breaker, blown fuse, or damage to existing wiring. This could lead to heat generation or fire.
3. **THIS UNIT MUST BE GROUNDED.** Failure to properly ground this unit could result in death or serious injury.
4. Electrical connection must be made in accordance with the instructions on the "WARNING" tag, provided with the pig tail leads in the junction box. See Fig. 3.

Additional Warnings for Remote Air-Cooled Model

5. **THE REMOTE CONDENSER UNIT MUST BE GROUNDED.** The power supply and ground wire to the remote condenser unit are supplied from the icemaker. See "II.F.5. Electrical Connection."
6. To reduce the risk of electric shock, make all remote condenser unit connections before connecting the icemaker power supply.
7. On remote air-cooled model, the icemaker should have power for a minimum of 4 hours prior to startup to prevent compressor damage.

- Usually an electrical permit and services of a licensed electrician are required.
- The maximum allowable voltage variation is ± 10 percent of the nameplate rating.
- The white lead must be connected to the neutral conductor of the power source.
CAUTION! Miswiring may result in severe damage to the icemaker. See Fig. 3.
- The opening for the power supply connection is 7/8" DIA to fit a 1/2" trade size conduit.

FD-1001MAH(-C)
FD-1001MWH(-C)
FD-1001MRH(-C)

WARNING

ELECTRICAL CONNECTION

The white lead must be connected to the neutral conductor of the power source. Miswiring results in severe damage to the icemaker. (See Fig. below)

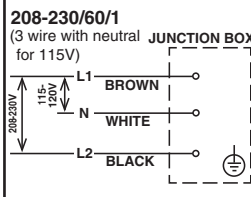


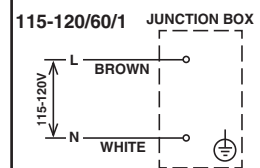
Fig. 3

FD-1001MLH(-C)

WARNING

ELECTRICAL CONNECTION

The white lead must be connected to the neutral conductor of the power source. Miswiring results in severe damage to the icemaker. (See Fig. below)



F. Installation of Remote Condenser Unit

⚠ WARNING

1. Installation of remote condenser unit must be performed by properly trained and EPA-certified service personnel.
2. Failure to install the equipment within these guidelines may adversely affect safety, performance, component life, and warranty coverage.

1. Checks Before Installation

- 1) Remove the shipping carton, tape, and packing material.
- 2) Check that the refrigerant lines do not rub or touch lines or other surfaces, and that the fan blade moves freely.

2. Location

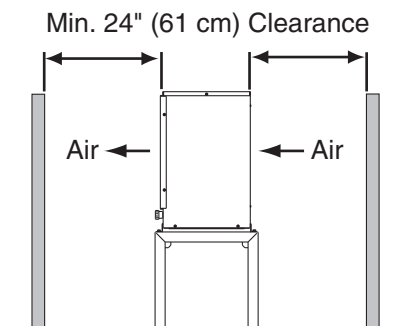
CAUTION

The remote condenser unit is intended for outdoor use. Normal operating ambient temperature should be within -20°F to +122°F (-29°C to +50°C). Operation of the remote condenser unit, for extended periods, outside of this normal temperature range may affect icemaker performance.

The remote condenser unit must be positioned in a permanent site under the following guidelines:

- A firm and flat site.
- A dry and well ventilated area with 24" (61 cm) clearance in both front and rear for proper air circulation and ease of maintenance and/or service should they be required.
- The maximum line length for the standard refrigerant charge is 66 feet. Should an installation require a longer line length, line sizes must be increased and additional refrigerant must be added. Instead of the standard 3/8" OD discharge line and 1/4" OD liquid line for this icemaker, increase the line sizes to 1/2" OD discharge line and 3/8" OD liquid line for the entire run. Add 16.5 oz. of R-404A to the system to compensate for the larger diameter line sizes, then additional refrigerant must be added. Add .4 oz. of R-404A for each foot over 66 feet to a maximum of 100 feet. Hoshizaki Technical Support is available at 1-800-233-1940 for recommendations.
- The maximum vertical distance between the remote condenser unit and the icemaker is 33 feet above or 10 feet below the icemaker. These distances are measured fitting to fitting.

Fig. 4



3. Setup

- 1) Secure the legs to the remote condenser unit with the 8 bolts and nuts provided. See Fig. 5.
- 2) The legs have 8 mounting holes. Secure the legs with 8 bolts (not included).

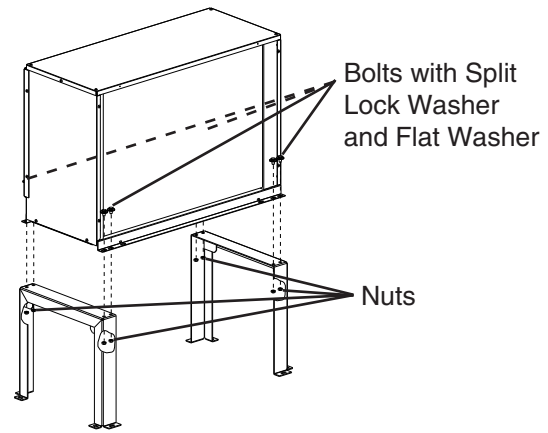


Fig. 5

4. Line Set

CAUTION

The icemaker, line set, and remote condenser unit must contain the same type of refrigerant. Mixing of refrigerants will result in improper operation and possible damage to the refrigeration system.

- Precharged factory line sets, available as optional equipment from Hoshizaki America, are recommended. For details, see "II.F.4.a) Factory Line Set Installation." Field fabricated line sets are allowed. For details, see "II.F.4.b) Field Fabricated Line Set Installation."
- The maximum line length for the standard refrigerant charge is 66 feet. Should an installation require a longer line length, line sizes must be increased and additional refrigerant must be added. Instead of the standard 3/8" OD discharge line and 1/4" OD liquid line for this icemaker, increase the line sizes to 1/2" OD discharge line and 3/8" OD liquid line for the entire run. Add 16.5 oz. of R-404A to the system to compensate for the larger diameter line sizes, then add .4 oz. of R-404A for each foot over 66 feet to a maximum of 100 feet. Hoshizaki Technical Support is available at 1-800-233-1940 for recommendations.
- The maximum vertical distance between the remote condenser unit and the icemaker is 33 feet above or 10 feet below the icemaker. These distances are measured fitting to fitting.

a) Factory Line Set Installation

- 1) Route the factory line set (3/8" OD discharge line and 1/4" OD liquid line) from the remote condenser unit to the icemaker. Leave a service loop behind the icemaker to allow the icemaker to be pulled out for service. See Fig. 6. Factory fabricated line sets are precharged and do not need to be evacuated.

CAUTION

1. Ensure that there are no traps and no kinks in the line set.
2. Do not coil extra line set. If the line set is too long, recover the line set charge and store it in an approved container. Do not discharge the refrigerant into the atmosphere. Remove the extra line set length, braze the connections, then skip to step 4 in "II.F.4.b) Field Fabricated Line Set Installation."

- 2) Connect the refrigerant lines to the appropriate male fittings on the remote condenser unit first and then at the icemaker. Make a proper connection as follows:
 - a. Remove the protective covers from the male fitting and female coupling.
 - b. Apply Polyol Ester (POE) refrigerant oil to the entire male fitting, including threads, o-ring, and diaphragm, before making the connection. See Fig. 7.

CAUTION

Do not use thread sealant on the fittings. Use POE refrigerant oil only.

- c. Make sure the male fitting and female coupling are properly aligned, then start the connection by hand to ensure that it is not cross threaded.
- d. Tighten the connection with a wrench until it is tight. At this point, the nut has covered most of the threads on the male fitting.
- e. Mark a reference line on the female coupling and the remote condenser unit or icemaker panel. Using a backup wrench on the back of the female coupling, tighten the six-sided nut of the female coupling an additional 1/6 turn. See Fig. 8.

b) Field Fabricated Line Set Installation

- 1) Route a 3/8" OD copper tube discharge line and a 1/4" OD copper tube liquid line between the remote condenser unit and the icemaker. Leave a service loop behind the icemaker to allow the icemaker to be pulled out for service. See Fig. 6.

CAUTION

1. Ensure that there are no traps and no kinks in the line set.
2. Do not coil extra line set. Fabricate the line set to the proper length.

- 2) Insulate the 2 copper tubes separately.
- 3) Install Parker quick connect couplings on each end. OS-QUICK, a universal quick connect coupling kit available as optional equipment from Hoshizaki America, is recommended.
- 4) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). **WARNING! DO NOT use R-404A as a mixture with pressurized air for leak testing.**
- 5) Evacuate through the charging ports on the Parker quick connect couplings and charge with R-404A refrigerant vapor to a pressure of 15 to 30 PSIG.
- 6) Connect the refrigerant lines to the appropriate male fittings on the remote condenser unit first and then at the icemaker. Make a proper connection as follows:
 - a. Remove the protective covers from the male fitting and female coupling.
 - b. Apply Polyol Ester (POE) refrigerant oil to the entire male fitting, including threads, o-ring, and diaphragm, before making the connection. See Fig. 7.

CAUTION

Do not use thread sealant on the fittings. Use POE refrigerant oil only.

- c. Make sure the male fitting and female coupling are properly aligned, then start the connection by hand to ensure that it is not cross threaded.
- d. Place a backup wrench on the back of the female coupling, then tighten the connection with a wrench until it is tight. At this point, the nut has covered most of the threads on the male fitting. **CAUTION! Failure to use a backup wrench may result in damage to the line set and possible refrigerant leaks.**
- e. Mark a reference line on the female coupling and the remote condenser unit or icemaker panel. Using a backup wrench on the back of the female coupling, tighten the six-sided nut of the female coupling an additional 1/6 turn. See Fig. 8.

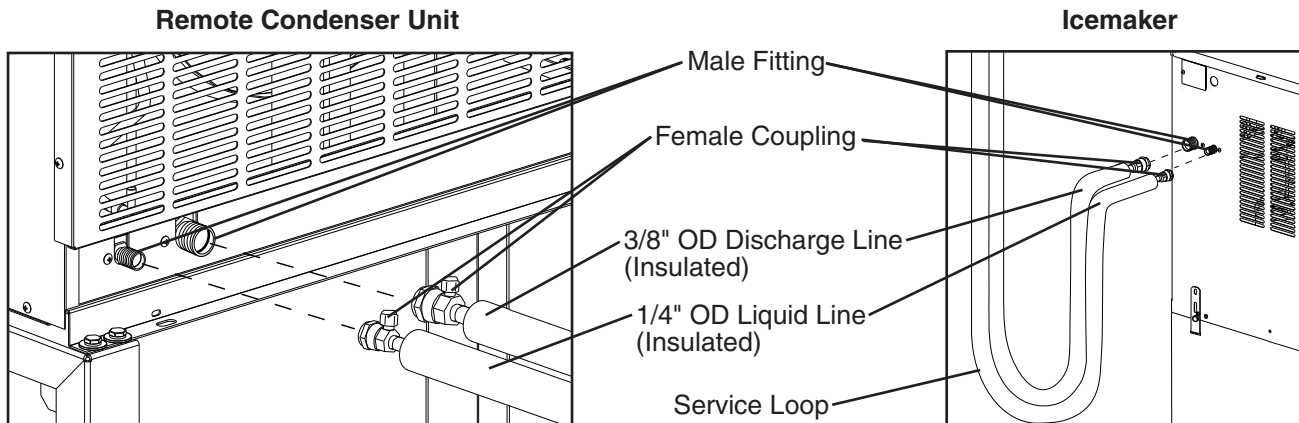


Fig. 6

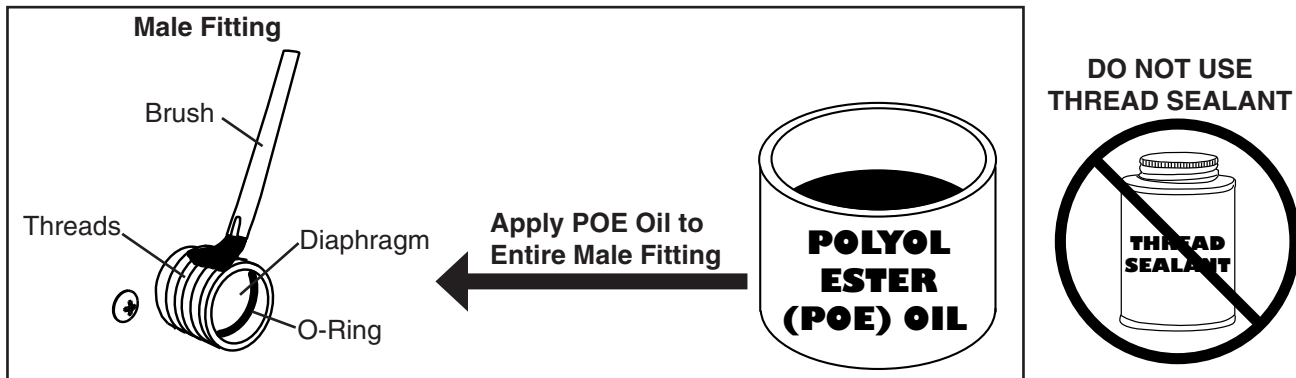


Fig. 7



Fig. 8

5. Electrical Connection

⚠ WARNING

1. Electrical connection must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or severe damage to equipment.
2. **THE REMOTE CONDENSER UNIT MUST BE GROUNDED.** Install a proper ground wire from the icemaker to the remote condenser unit. Use wire of an appropriate gage and outdoor rating. Failure to properly ground the unit could result in death or serious injury.
3. The remote condenser unit leads must be connected to the fan motor junction box leads on the icemaker. Use wire of an appropriate gage and outdoor rating.
4. Do not connect the leads to an external power source. Do not connect the icemaker's fan motor junction box leads together. Do not allow the leads to contact the junction box walls.
5. To reduce the risk of electric shock, make all remote condenser unit connections before connecting the icemaker power supply.
6. On remote air-cooled model, the icemaker should have power for a minimum of 4 hours prior to startup to prevent compressor damage.

- Usually an electrical permit and services of a licensed electrician are required.
 - The opening for the power supply connection is 7/8" DIA to fit a 1/2" trade size conduit.
- 1) Remove the louver panel. See Fig. 9.
 - 2) Remove the junction box cover on the remote condenser unit. Remove the fan motor junction box cover on the icemaker.
 - 3) Install a ground wire from the icemaker to the remote condenser unit. Use wire of an appropriate gage and outdoor rating.
 - 4) Connect the fan motor leads in the junction box of the remote condenser unit to the fan motor leads in the fan motor junction box of the icemaker. Use wire of an appropriate gage and outdoor rating.
 - 5) Replace the junction box covers and the louver panel in their correct positions.

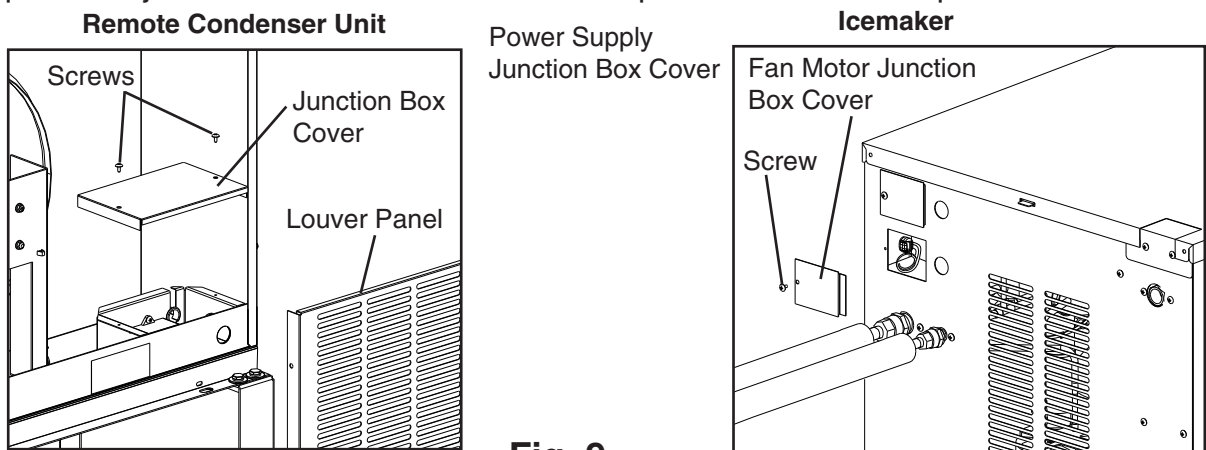


Fig. 9

6. Stacking Remote Condenser Units

- 1) Install the lower remote condenser unit as described earlier in this section.
- 2) Place the upper remote condenser unit on top of the lower. See Fig. 10.
- 3) Secure the upper remote condenser unit to the lower remote condenser unit with the 4 screws provided.
- 4) Install refrigerant lines and make electrical connection as described earlier in this section.

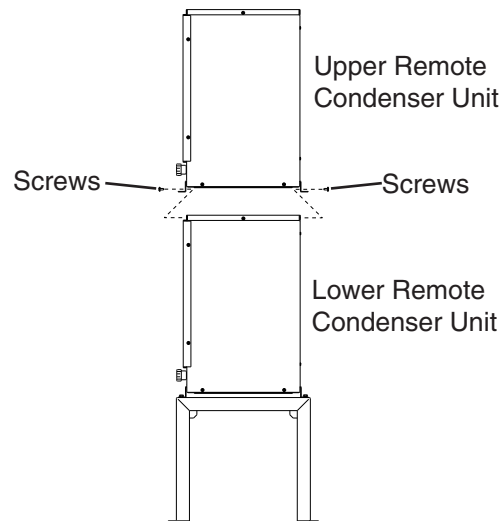


Fig. 10

G. Connection to an R-404A Parallel Rack System

WARNING

1. Installation must be performed by properly trained and EPA-certified service personnel.
2. Failure to install the equipment within these guidelines may adversely affect safety, performance, component life, and warranty coverage.
3. The icemaker, line set, and rack system must contain the same type of refrigerant. Mixing of refrigerants will result in improper operation and possible damage to the refrigeration system.

- The rack system must be sized to provide a maximum load of 5,700 BTU/h at 90°F (32°C) ambient temperature and 70°F (21°C) water temperature.
- Install a p-trap in the suction line if required by the rack system's instructions.
- The evaporator pressure regulator (EPR) valve is factory adjusted to sustain a suction pressure of 31 PSIG for a -2°F (-19°C) evaporator temperature. Adjust only if necessary.
- The icemaker is shipped with a holding charge of 3.5 oz. of R-404A.
- Charging port-equipped Parker quick connect couplings are needed to connect the line set to the icemaker.

1. Line Set Installation

- 1) Route a 3/8" OD copper tube suction line and a 1/4" OD copper tube liquid line between the icemaker and the rack system. Leave a service loop behind the icemaker to allow the icemaker to be pulled out for service. See Fig. 11.

CAUTION

Do not coil extra line set. Fabricate the line set to the proper length.

- 2) Insulate the 2 copper tubes separately.
- 3) Braze the charging port-equipped Parker quick connect couplings to the icemaker end of the copper tubes. Do not connect the charging port-equipped Parker quick connect couplings to the icemaker at this time.
- 4) When using couplings to connect the line set to the rack system, braze them to the rack system end of the copper tubes. Otherwise, braze the line set directly to the rack system. Do not open the rack system service valves at this time.
- 5) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the line set copper tubes (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). **WARNING! DO NOT use R-404A as a mixture with pressurized air for leak testing.**
- 6) Evacuate the line set copper tubes through the charging ports on the Parker quick connect couplings and charge with R-404A refrigerant vapor to a pressure of 15 to 30 PSIG.

- 7) Connect the refrigerant lines to the appropriate fittings on the rack system first (if not already brazed on), then at the icemaker.

If the couplings to the rack system are not Parker quick connect couplings, follow the coupling manufacturer's instructions. Make a proper Parker quick connect coupling connection as follows:

- a. Remove the protective covers from the male fitting and female coupling.
- b. Apply Polyol Ester (POE) refrigerant oil to the entire male fitting, including threads, o-ring, and diaphragm, before making the connection. See Fig. 12.

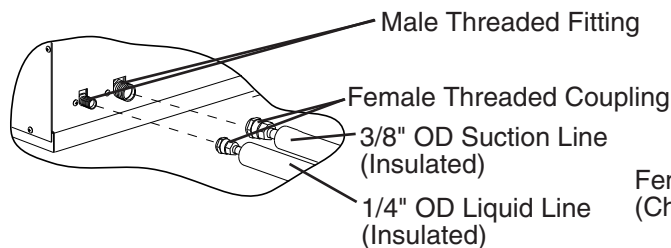
CAUTION

Do not use thread sealant on the fittings. Use POE refrigerant oil only.

- c. Make sure the male fitting and female coupling are properly aligned, then start the connection by hand to ensure that it is not cross threaded.
- d. Place a backup wrench on the back of the female coupling, then tighten the connection with a wrench until it is tight. At this point, the nut has covered most of the threads on the male fitting. **CAUTION! Failure to use a backup wrench may result in damage to the line set and possible refrigerant leaks.**
- e. Mark a reference line on the female coupling and the unit panel. Using a backup wrench on the back of the female coupling, tighten the six-sided nut of the female coupling an additional 1/6 turn. See Fig. 13.

- 8) Open the rack system service valves.

Rack System-Threaded Connection



Rack System-Braze Connection

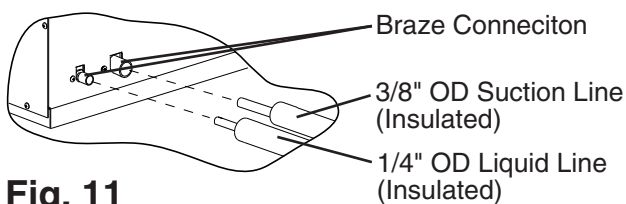
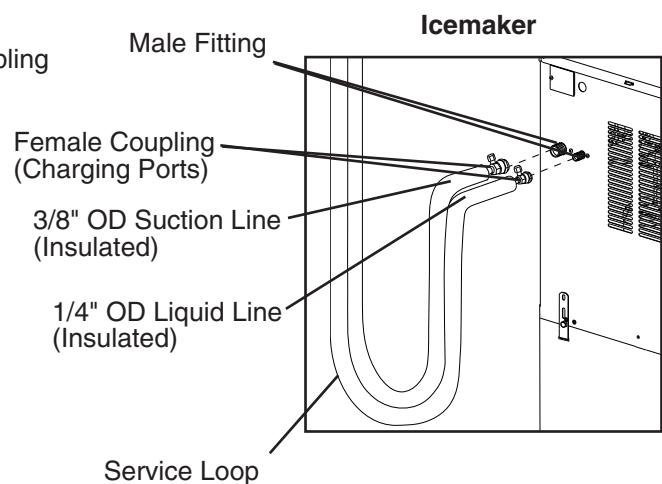


Fig. 11



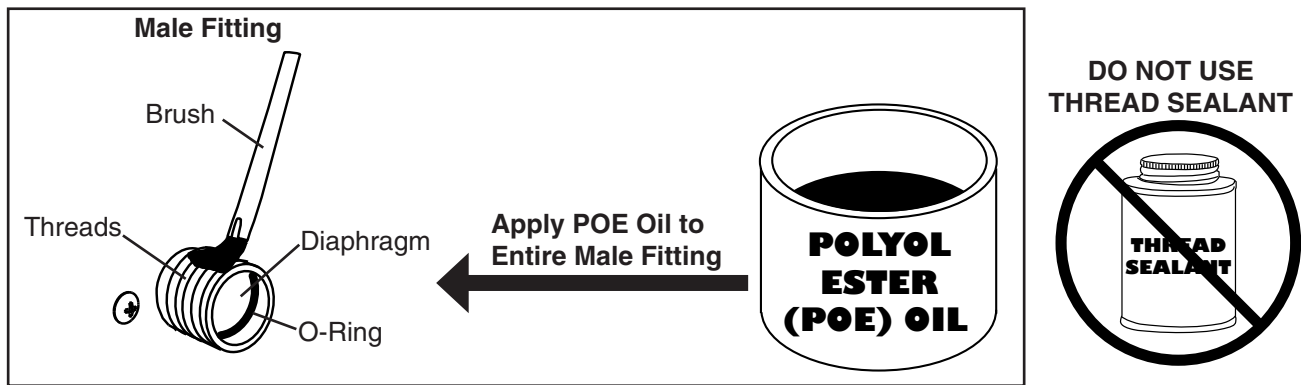


Fig. 12



Fig. 13

H. Water Supply and Drain Connections

See Fig. 14, 15, or 16

WARNING

1. Water supply and drain connections must be installed in accordance with applicable national, state, and local regulations.
2. Normal operating water temperature should be within 45°F to 90°F (7°C to 32°C). Operation of the icemaker, for extended periods, outside of this normal temperature range may affect icemaker performance.
3. To prevent damage to equipment, do not operate the icemaker when the water supply is off, or if the pressure is below 10 PSIG. Do not run the icemaker until the proper water pressure is reached.

- A plumbing permit and services of a licensed plumber may be required in some areas.
- External filters, strainers, or softeners may be required depending on water quality. Contact your local Hoshizaki distributor for recommendations.
- Water supply pressure should be a minimum of 10 PSIG and a maximum of 113 PSIG. If the pressure exceeds 113 PSIG, the use of a pressure reducing valve is required.
- The icemaker drain line, dispenser unit/storage bin drain line, and water-cooled condenser drain line (if applicable) must be run separately.
- Drain lines must have 1/4" fall per foot (2 cm per 1 m) on horizontal runs to get a good flow. A vented tee connection is also required for proper flow.
- Drain lines should not be piped directly to the sewer system. An air gap of a minimum of 2 vertical inches (5-cm) should be between the end of the drain pipes from the icemaker, dispenser unit/storage bin, and water-cooled condenser (if applicable) and the floor drain.

1. Icemaker

- If you would like to convert to top water supply, install the optional Top Water Supply Kit (HS-2123).
- Icemaker water supply inlet is 1/2" female pipe thread (FPT). A minimum of 3/8" OD copper tubing is recommended for the icemaker water supply line.
- An icemaker water supply line shut-off valve and drain valve should be installed.
- Icemaker drain outlet is 3/4" FPT. A minimum of 3/4" OD hard pipe is recommended for the icemaker drain line.

FD-1001MAH(-C)
FD-1001MRH(-C)
FD-1001MLH(-C)

To convert to top water supply, install the optional Top Water Supply Kit (HS-2123).

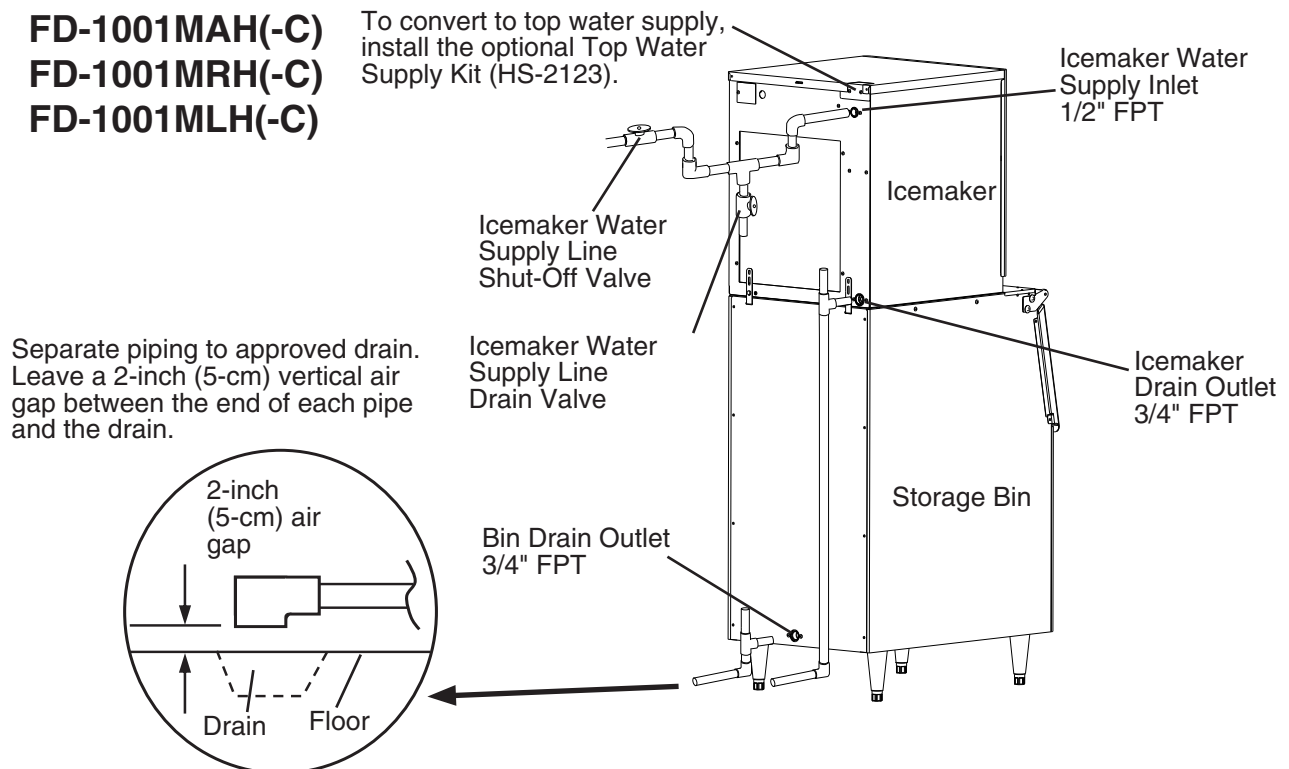


Fig. 14

2. Water-Cooled Condenser

a) Connection to an Open Drain System

- Condenser water supply inlet is 1/2" female pipe thread (FPT). A minimum of 3/8" OD copper tubing is recommended for the condenser water supply line.
- A condenser water supply line shut-off valve and drain valve should be installed.
- Condenser drain outlet is 3/8" FPT. A minimum of 3/8" OD hard pipe is recommended for the condenser drain line.
- In some areas, a back flow preventer may be required in the cooling water circuit.

FD-1001MWH(-C) Condenser Connection to a Potable Water Supply

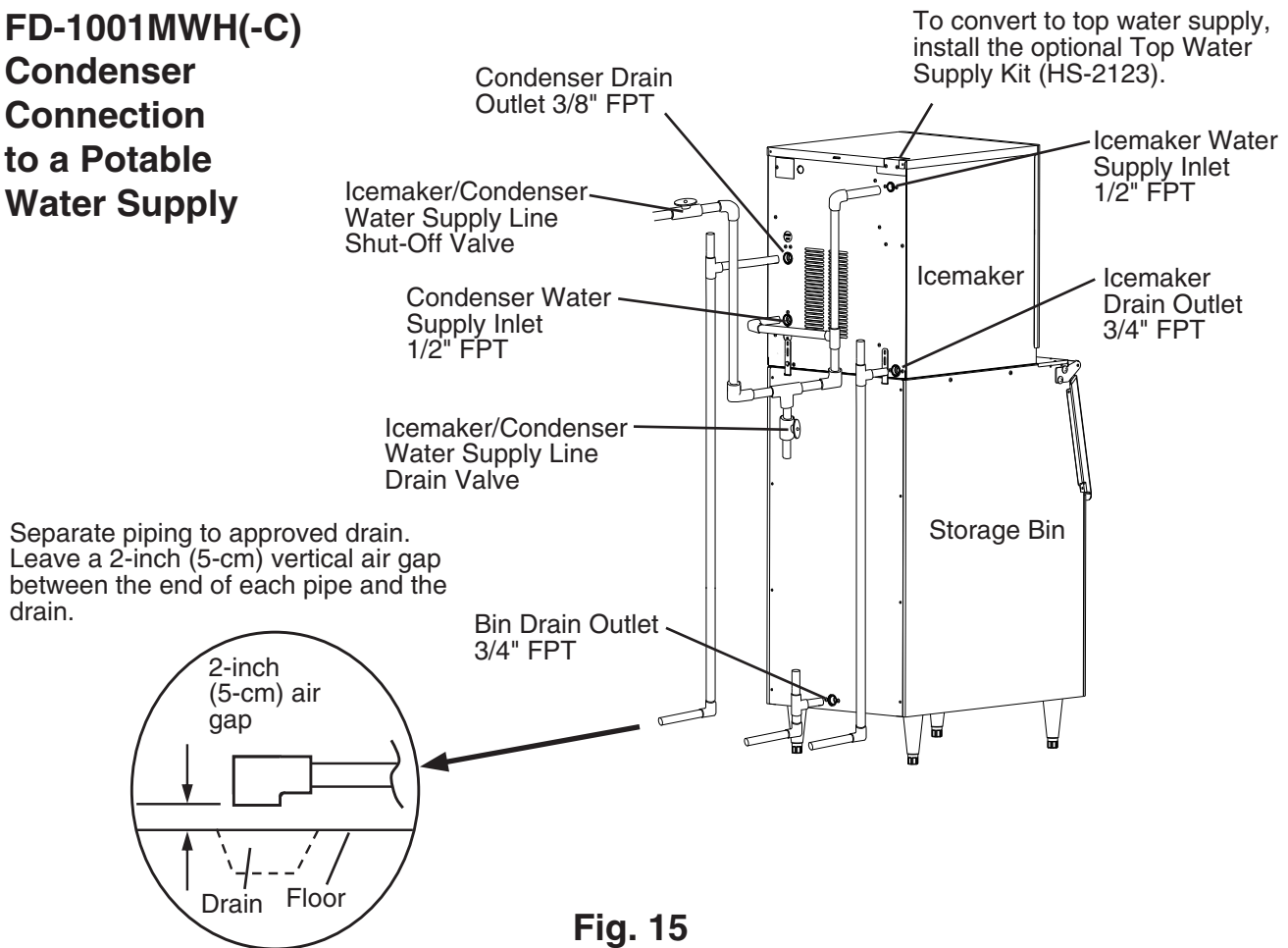


Fig. 15

b) Connection to a Closed Loop System

- Condenser water supply inlet is 1/2" female pipe thread (FPT). A minimum of 3/8" OD copper tubing is recommended for the condenser water supply line.
- Condenser return outlet is 3/8" FPT. A minimum of 3/8" OD hard pipe is recommended for the condenser return line.
- Shut-off valves and drain valves should be installed at both the condenser water supply inlet and condenser return outlet.
- The water supply to the condenser should not drop below 4 GPM.
- The pressure differential between the condenser water supply inlet and condenser return outlet must be no less than 10 PSIG.
- When using a glycol blend, the solution mixture should be less than 30% glycol.
- In order to maintain the proper high side pressure, the condenser water supply inlet temperature should not drop below 45°F (7°C) and the condenser return outlet temperature must be in the 104°F to 115°F (40°C to 46°C) range. Once the icemaker installation is complete, confirm the condenser return outlet temperature 5 minutes after a freeze cycle starts. If the outlet temperature is not in the proper range, adjust the water-regulating valve to bring it into range.

FD-1001MWH(-C) Condenser Connection to a Closed Loop Water Supply

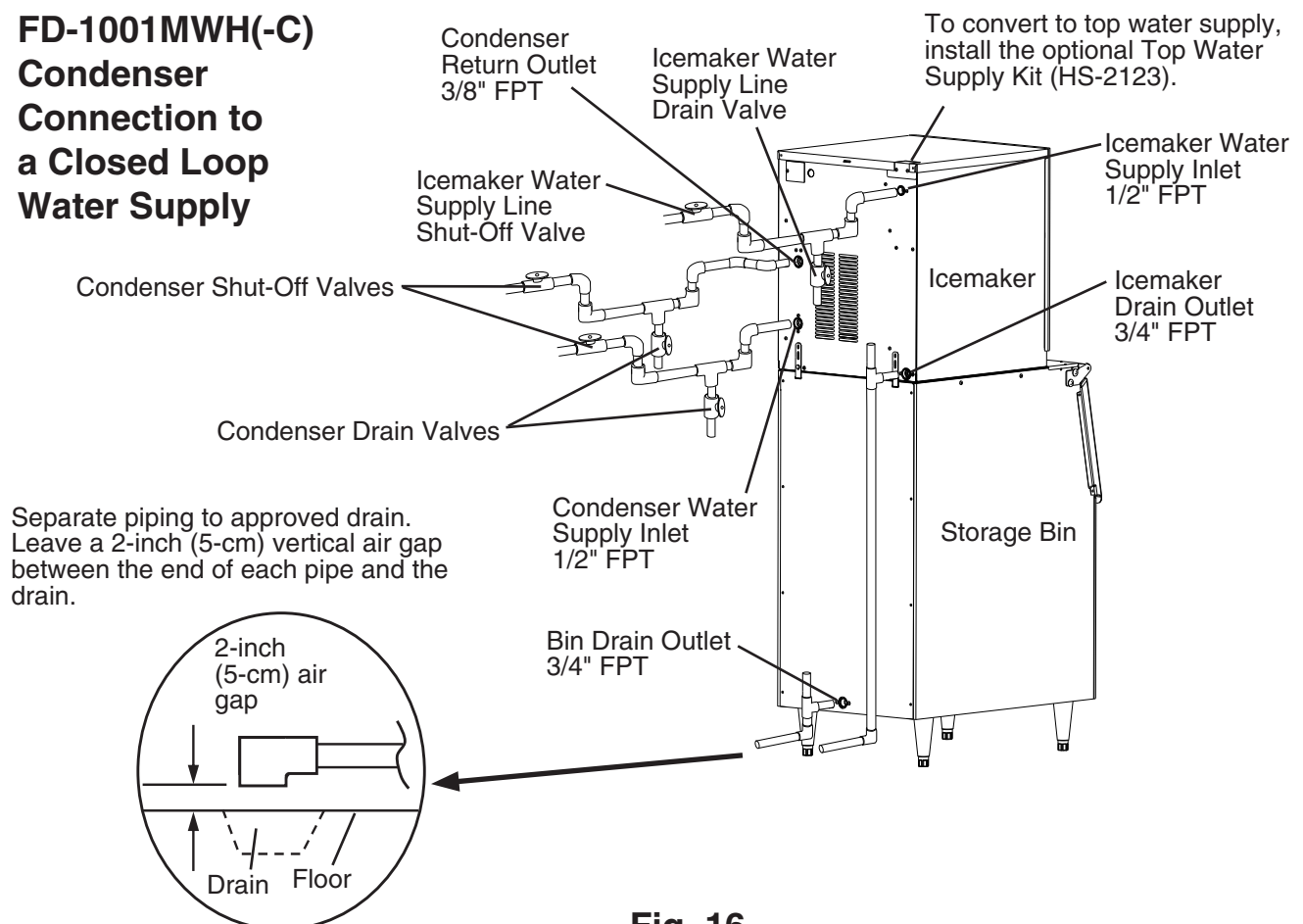


Fig. 16

I. Final Checklist

WARNING

CHOKING HAZARD: Ensure all components, fasteners, and thumbscrews are securely in place after installation. Make sure that none have fallen into the storage bin.

- 1) Is the icemaker level?
- 2) Is the icemaker in a site where the ambient temperature is within 45°F to 100°F (7°C to 38°C) and the water temperature within 45°F to 90°F (7°C to 32°C) all year around?
- 3) Is there at least 6" (15 cm) clearance at rear and sides and 24" (61 cm) at the top of the icemaker for proper air circulation ease of maintenance and service?
- 4) Have the shipping carton, tape, and packing material been removed from the icemaker?
- 5) Are all components, fasteners, and thumbscrews securely in place?
- 6) Have all electrical and water connections been made? Do electrical and water connections meet all national, state, and local code and regulation requirements?
- 7) Has the power supply voltage been checked or tested against the nameplate rating? Has a proper ground been installed to the icemaker? On remote air-cooled model, has a proper ground also been installed to the remote condenser unit?
- 8) Are the water supply line shut-off valve(s) and drain valve(s) installed? Has the water supply pressure been checked to ensure a minimum of 10 PSIG and a maximum of 113 PSIG?
Note: The icemaker may stop running when the water supply is off, or if the pressure is below 10 PSIG. When the proper water pressure is reached, the icemaker automatically starts running again.
- 9) Are the compressor hold-down bolts snug? Have the refrigerant lines been checked to make sure they do not rub or touch other lines or surfaces? Has the fan blade (if applicable) been checked to make sure it turns freely?
- 10) On remote air-cooled model, is the refrigerant line set tightened and free of kinks?
- 11) On remote air-cooled model, has the icemaker power supply been on for a minimum of 4 hours?
- 12) Has the end user been given the instruction manual, and instructed on how to operate the icemaker and the importance of the recommended periodic maintenance?
- 13) Has the end user been given the name and telephone number of an authorized service agent?
- 14) Has the warranty card been filled out and forwarded to the factory for warranty registration?

J. Startup

WARNING

1. All parts are factory-adjusted. Improper adjustments may adversely affect safety, performance, component life, and warranty coverage.
2. If the icemaker is turned off, wait for at least 3 minutes before restarting the icemaker to prevent damage to the compressor.
3. At startup, confirm that all internal and external connections are free of leaks.
4. On remote air-cooled model, the icemaker should have power for a minimum of 4 hours prior to startup to prevent compressor damage.

- 1) Open the water supply line shut-off valve(s).
- 2) Remove the front panel.
- 3) Move the control switch on the control box to the "ICE" position, then move the power switch to the "ON" position.
- 4) Replace the front panel in its correct position.
- 5) Turn on the power supply to start the automatic icemaking process.
- 6) Once the unit starts to produce ice, allow it to run for another 30 minutes.
- 7) Turn off the power supply, then remove the front panel.
- 8) Move the control switch to the "DRAIN" position, then replace the front panel in its correct position. Turn on the power supply and allow the water system to drain for 5 minutes.
- 9) Turn off the power supply, then remove the front panel.
- 10) Move the control switch to the "ICE" position, then replace the front panel in its correct position.
- 11) Pour warm water into the dispenser unit/storage bin and melt any remaining ice. Clean the dispenser unit/storage bin liner using a neutral cleaner. Rinse thoroughly after cleaning.
- 12) Turn on the power supply to start the automatic icemaking process.
- 13) Confirm bin control operation. See "II.K. Bin Control Check."

K. Bin Control Check

An infrared sensor is used as the primary bin control to control the level of ice in the dispensing unit/storage bin. A mechanical bin control is used as a backup bin control.

IMPORTANT

1. Make sure the icemaker has been installed as outlined in this manual and that the water supply is on.
2. Make sure S1 Dip Switch 7 is in the "ON" position. This allows the control board to monitor the infrared sensor along with the mechanical backup bin control.

1. Infrared Sensor Check

- 1) Turn off the power supply.
- 2) Remove the front panel, top panel, and control box cover.
- 3) Confirm that control board S1 dip switch 1, 2, and 3 are in the proper position for your application. "See IV.K.3. Infrared Sensor Shutdown Delay."
- 4) Move the control switch on the control box to the "ICE" position, then move the power switch to the "ON" position.
- 5) Turn on the power supply to start the automatic icemaking process. The green LED on the infrared sensor turns on. This LED confirms 20V DC power to the sensor.
- 6) Make sure the "GM" LED on the control board is on. See Fig. 17. There is a delay of at least 30 seconds before the "GM" LED turns on after power-up. After the "GM" LED turns on, press the "SERVICE" button on the control board to bypass the 5-minute compressor delay. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** The "COMP" LED turns on.

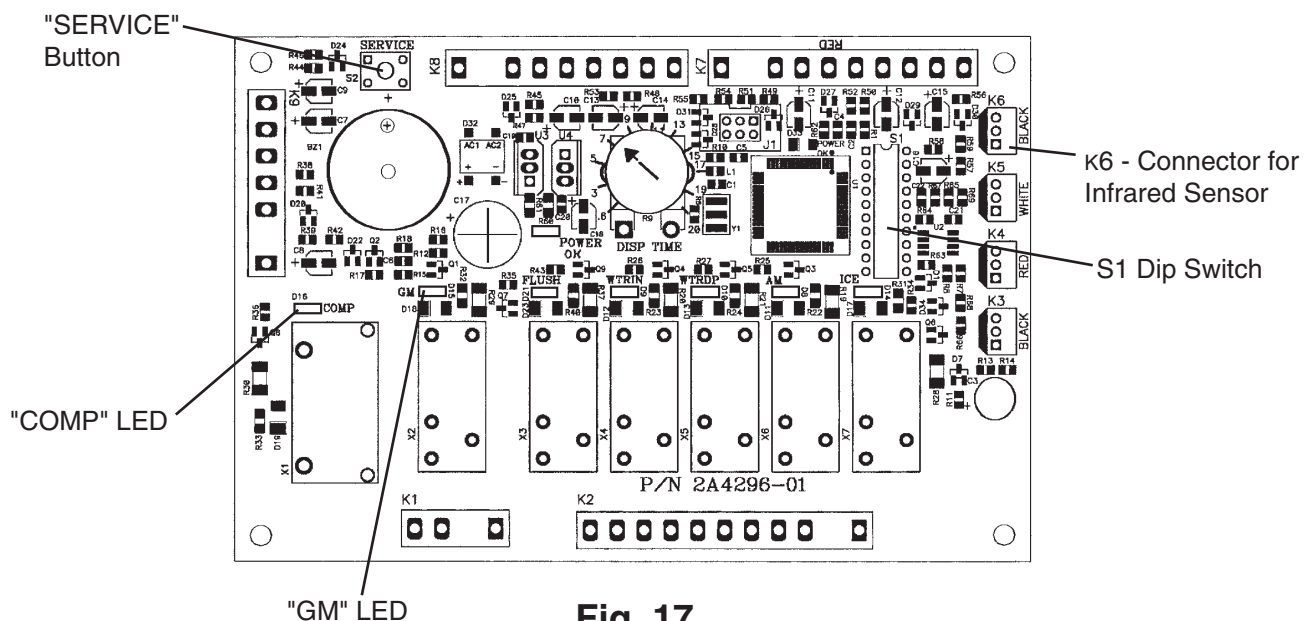


Fig. 17

- 7) "GM" LED and "COMP" LED are on. Use an object to cover the infrared sensor lens at the bottom of the icemaker. If the bottom of the icemaker is not accessible in your application, remove the thumbscrew securing the infrared sensor housing, remove the housing from the base, then cover the infrared sensor lens. See Fig. 18. The yellow LED on the infrared sensor turns on. The yellow LED flashes when ice is at the outer limit of its range and turns steady as ice nears. After the yellow LED turns on (flashing or steady), the infrared sensor shutdown delay timer starts counting down based on S1 dip switch 1, 2, and 3 setting. The compressor should de-energize immediately after the shutdown delay timer expires. 5 minutes later, the gear motor and fan motor should de-energize.
- 8) Remove the object covering the infrared sensor. If you removed the infrared sensor housing from the base, replace it in its correct position, and secure it with the thumbscrew.
- 9) Move the power switch to the "OFF" position. Turn off the power supply, then proceed to "II.K.2. Mechanical Backup Bin Control Check."

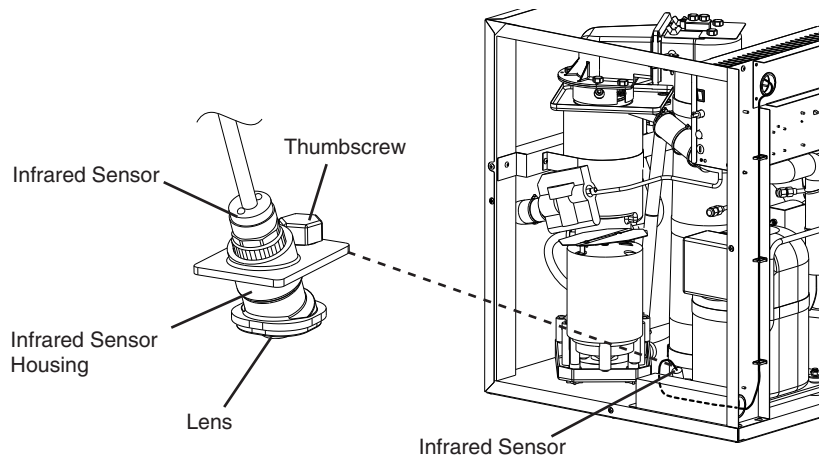


Fig. 18

2. Mechanical Backup Bin Control Check

- 1) Make sure the power supply is off.
- 2) Remove the strap connecting the spout to the chute assembly. See Fig. 19. Pull up the chute assembly slightly so that you can access the actuator located in the top of the chute.
- 3) Move the power switch to the "ON" position.
- 4) Turn on the power supply to start the automatic icemaking process.

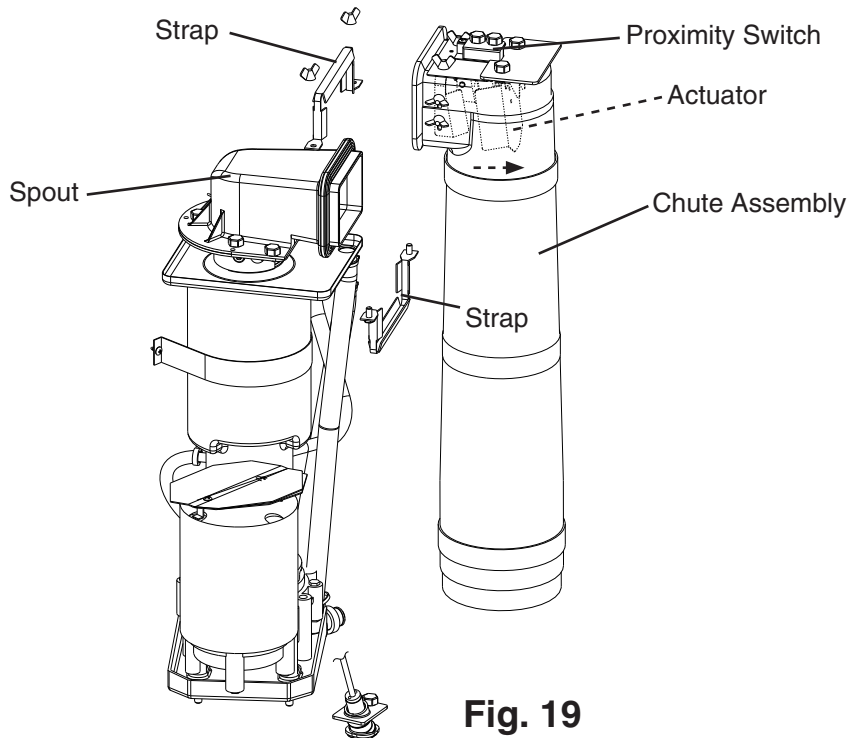


Fig. 19

- 5) Make sure the "GM" LED is on. See Fig. 14. There is a delay of at least 30 seconds before the "GM" LED turns on after power-up. After the "GM" LED turns on, press the "SERVICE" button on the control board to bypass the 5-minute compressor delay. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** The "COMP" LED turns on.
- 6) Press the actuator located in the top of the chute. The compressor and gear motor should de-energize within 10 seconds and the control board should sound a 9 beep alarm.
- 7) Turn the power switch off and then on again to reset the control board alarm.
- 8) After resetting the control board alarm, move the power switch to the "OFF" position and turn off the power supply.
- 9) Replace the chute assembly and strap in their correct positions.
- 10) Move the power switch to the "ON" position.
- 11) Replace the control box cover, top panel, and front panel in their correct positions.
- 12) Turn on the power supply to start the automatic icemaking process.

3. Infrared Sensor Shutdown Delay

This is the delay between the infrared sensor detecting ice and the start of the shutdown sequence. The infrared sensor shutdown delay is factory-adjusted to 100 seconds and no adjustment is required for most dispenser unit/storage bin applications.

a) **Standard Storage Bin:**

When installed on a standard storage bin, any shutdown delay setting is acceptable.

b) **Dispenser Unit:**

For typical dispenser unit applications, a 100-second shutdown delay is recommended. However, on some dispenser unit applications, the ice level at shutoff may need to be adjusted depending on the dispenser agitation or dispense method. Should a different shutdown delay be desired, adjust S1 dip switch 1, 2, and 3 to obtain the shutdown delay needed. See the table below. For further details, contact Hoshizaki Technical Support at 1-800-233-1940.

Note: When the shutdown sequence begins, the compressor de-energizes immediately and then 5 minutes later the gear motor and fan motor de-energize.

⚠ WARNING

Increasing the shutdown delay allows a higher level of ice in the dispensing unit/storage bin before shutdown. This could lead to icemaker movement or ice overflow.

S1 Dip Switch			Shutdown Delay
NO. 1	NO. 2	NO. 3	
OFF	OFF	OFF	0 seconds
ON	OFF	OFF	100 seconds (1.6 minutes)
OFF	ON	OFF	1100 seconds (18.3 minutes)
OFF	OFF	ON	1650 seconds (27.5 minutes)
ON	ON	OFF	2200 seconds (36.7 minutes)
OFF	ON	ON	0 seconds
ON	ON	ON	0 Seconds

III. Cleaning and Maintenance

WARNING

CHOKING HAZARD: Ensure all components, fasteners, and thumbscrews are securely in place after any cleaning or maintenance is done to the unit. Make sure that none have fallen into the dispenser unit/storage bin.

A. Cleaning and Sanitizing Instructions

Hoshizaki recommends cleaning and sanitizing this unit at least twice a year. More frequent cleaning and sanitizing, however, may be required in some existing water conditions.

WARNING

1. To prevent injury to individuals and damage to the icemaker, do not use ammonia type cleaners.
2. Carefully follow any instructions provided with the bottles of cleaning and sanitizing solution.
3. Always wear liquid-proof gloves and goggles to prevent the cleaning and sanitizing solutions from coming into contact with skin or eyes.
4. After cleaning and sanitizing, do not use ice made from the cleaning and sanitizing solutions. Be careful not to leave any solution on the parts or in the dispenser unit/storage bin.

1. Cleaning Solution

IMPORTANT

For safety and maximum effectiveness, use the solution immediately after dilution.

Dilute 9.6 fl. oz. (0.29 l) of recommended cleaner, Hoshizaki "Scale Away" or "LIME-A-WAY" (Economics Laboratory, Inc.), with 1.6 gal. (6.0 l) of warm water.

2. Cleaning Procedure

- 1) Turn off the power supply, then remove the front panel. Make sure the power switch is in the "ON" position, then move the control switch to the "DRAIN" position. Replace the front panel in its correct position.
- 2) Close the water supply line shut-off valve.
- 3) Turn on the power supply and allow the water system to drain for 5 minutes.
- 4) Turn off the power supply, then remove the front and top panels. Move the power switch to the "OFF" position.
- 5) Remove all of the ice from the dispenser unit/storage bin.

- 6) Remove the strap connecting the spout to the chute assembly, then remove the spout. See Fig. 20.
- 7) Pour the cleaning solution over the extruding head until the evaporator assembly and the reservoir are full and the solution starts to overflow into the drain pan.
 Note: If there is excess scale on the extruding head, fill the evaporator assembly and reservoir as described above, then use a clamp on the reservoir hose between the reservoir and evaporator assembly to block flow. Pour additional cleaning solution over the extruding head until the evaporator assembly is completely full.

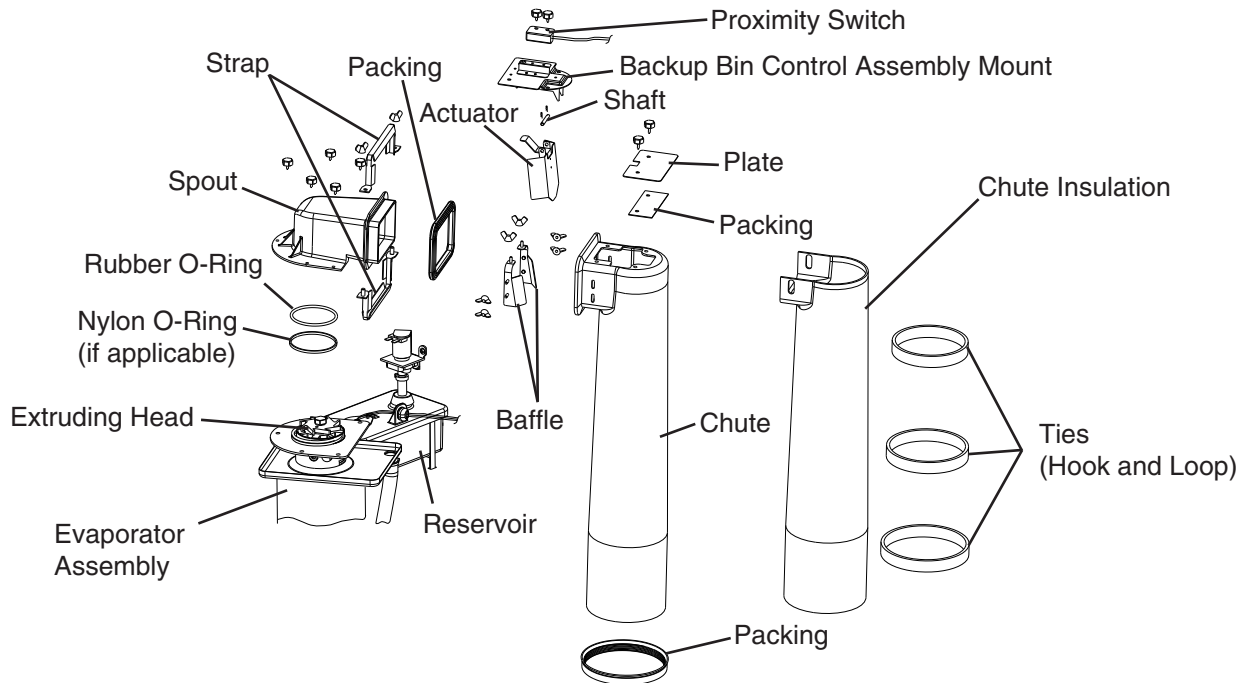


Fig. 20

- 8) Replace the spout and strap in their correct positions.
- 9) Allow the icemaker to sit for about 10 minutes before operation. If you placed a clamp on the reservoir hose in step 7, remove it before operation.
- 10) In bad or severe water conditions, clean the float switch assembly as described below. See Fig. 21. Otherwise, continue to step 11.
 - a. Remove the float switch assembly from the reservoir cover.
 - b. Wipe down the float switch assembly with the cleaning solution.
 - c. Rinse the float switch assembly thoroughly with clean water.
 - d. Replace the float switch assembly in its correct position.

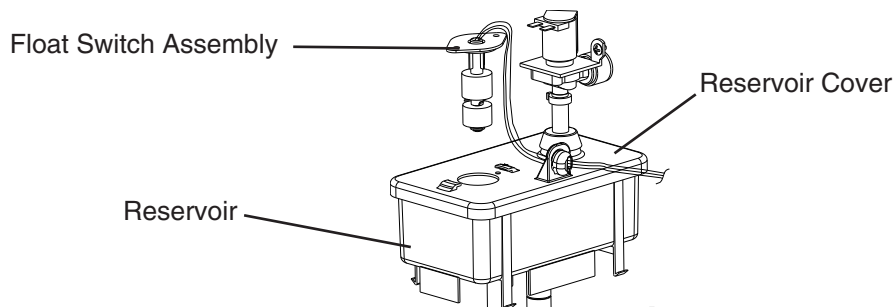


Fig. 21

- 11) Wipe down the infrared sensor's lens, (located on the bottom of the icemaker) with the cleaning solution. See Fig. 22. Next, rinse the cleaning solution off of the infrared sensor's lens with a clean, damp cloth.

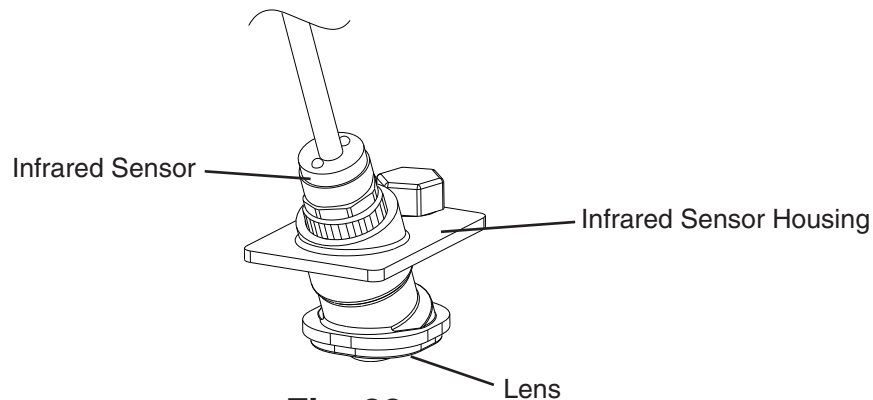


Fig. 22

- 12) Move the control switch to the "ICE" position, then move the power switch to the "ON" position. Replace the panels in their correct positions. Turn on the power supply and make ice using the solution until the icemaker stops making ice.
- 13) Turn off the power supply, then remove the front panel. Move the control switch to the "DRAIN" position, then replace the front panel in its correct position.
- 14) Turn on the power supply and allow the solution to drain for 5 minutes.
- 15) Turn off the power supply, then remove the front panel. Move the control switch to the "ICE" position, then replace the front panel in its correct position.
- 16) Open the water supply line shut-off valve, then turn on the power supply to supply water to the reservoir.
- 17) After the gear motor starts, turn off the power supply. Remove the front panel, then move the control switch to the "DRAIN" position. Replace the front panel in its correct position.
- 18) Turn on the power supply and allow the water system to drain for 5 minutes.
Note: If you do not sanitize the unit, go to step 14 in "III.A.5. Sanitizing Procedure - Final."
- 19) Turn off the power supply, then close the water supply line shut-off valve.

3. Sanitizing Solution

IMPORTANT

For safety and maximum effectiveness, use the solution immediately after dilution.

Dilute 2.5 fl. oz. (74 ml or 5 tbs) of a 5.25% sodium hypochlorite solution (chlorine bleach) with 5 gal. (19 l) of warm water.

4. Sanitizing Procedure - Initial

- 1) Make sure the power supply is off and the water supply line shut-off valve is closed. Remove the panels, then move the power switch to the "OFF" position.
- 2) Remove the strap connecting the spout to the chute assembly, then remove the spout. Remove the rubber O-ring and nylon O-ring (if applicable) at the top of the cylinder and also remove the packing between the spout and the chute.
- 3) Pour the sanitizing solution over the extruding head until the evaporator assembly and the reservoir are full and the solution starts to overflow into the drain pan.
- 4) Remove the proximity switch from the chute assembly, then remove the chute assembly from the icemaker.
- 5) Remove the packing at the bottom of the ice chute. Remove the 3 ties and the chute insulation.
- 6) Remove the 2 baffles.
- 7) Remove the plate and the packing from the top of the ice chute, then remove the backup bin control assembly by sliding it slightly towards the chute opening and lifting it off.
- 8) Disassemble the backup bin control assembly by removing the 2 snap pins, shaft, and actuator.
- 9) Soak the spout, O-ring(s), packings, chute, baffles, plate, and backup bin control assembly in the sanitizing solution for 10 minutes then wipe them down.
- 10) Rinse the parts thoroughly with clean water.

CAUTION

If the solution is left on these parts, they will rust.

- 11) Replace all parts in their correct positions.

IMPORTANT

When installing the baffles, make sure that the bent surface (the one without the studs) faces the actuator so that the bent surface can guide the ice to the center of the actuator.

- 12) Move the control switch to the "ICE" position, then move the power switch to the "ON" position. Replace the panels in their correct positions, then turn on the power supply. Make ice using the solution until the icemaker stops making ice.
- 13) Turn off the power supply, then remove the front panel. Move the control switch to the "DRAIN" position, then replace the front panel in its correct position.

- 14) Turn on the power supply and allow the solution to drain for 5 minutes.
- 15) Turn off the power supply.

5. Sanitizing Procedure - Final

- 1) Mix a new batch of the sanitizing solution.
- 2) Make sure the power supply is off and the water supply line shut-off valve is closed.
Remove the front and top panels, then move the power switch to the "OFF" position.
- 3) Remove the strap connecting the spout to the chute assembly, then remove the spout.
- 4) Pour the sanitizing solution over the extruding head until the evaporator assembly and the reservoir are full and the solution starts to overflow into the drain pan.
- 5) Replace the spout and strap in their correct positions.
- 6) Allow the icemaker to sit for about 10 minutes before operation.
- 7) Move the control switch to the "ICE" position, then move the power switch to the "ON" position. Replace the panels in their correct positions, then turn on the power supply. Make ice using the solution until the icemaker stops making ice.
- 8) Turn off the power supply, then remove the front panel. Move the control switch to the "DRAIN" position, then replace the front panel in its correct position.
- 9) Turn on the power supply and allow the solution to drain for 5 minutes.
- 10) Turn off the power supply, then remove the front panel. Move the control switch to the "ICE" position, then replace the front panel in its correct position.
- 11) Open the water supply line shut-off valve, then turn on the power supply to supply water to the reservoir.
- 12) After the gear motor starts, turn off the power supply. Remove the front panel, then move the control switch to the "DRAIN" position. Replace the front panel in its correct position.
- 13) Turn on the power supply and allow the water system to drain for 5 minutes.
- 14) Turn off the power supply, then remove the front panel. Move the control switch to the "ICE" position, then replace the front panel in its correct position.
- 15) Turn on the power supply to start the automatic icemaking process. Allow the icemaker to run for about 30 minutes, then turn off the power supply.
- 16) Pour warm water into the dispenser unit/storage bin and melt any remaining ice. Clean the dispenser unit/storage bin liner using a neutral cleaner. Rinse thoroughly after cleaning.
- 17) Turn on the power supply to start the automatic icemaking process.

B. Maintenance

This icemaker must be maintained individually, referring to the instruction manual and labels provided with the icemaker. The schedule below is a guideline. More frequent maintenance, however, may be required depending on water quality, the icemaker's environment, and local sanitation regulations.

Consult with your local distributor about inspection and maintenance service. To obtain the name and phone number of your local distributor, visit www.hoshizaki.com or call Hoshizaki Technical Support at 1-800-233-1940 in the USA.

WARNING

1. Only qualified service technicians should attempt to service or maintain this icemaker.
2. Disconnect power before performing maintenance.

Maintenance Schedule		
Frequency	Area	Task
Every 2 Weeks	Air Filter(s)	Inspect. Wash with warm water and neutral cleaner if dirty.
Monthly	External Water Filters	Check for proper pressure and change if necessary.
	Icemaker and Dispenser Unit/ Storage Bin Exterior	Wipe down with clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt build up. Clean any chlorine staining (rust colored spots) using a non-abrasive cleaner like Zud or Bon Ami.
	Infrared Sensor Lens; Underside of Icemaker and Top Kits; Bin Door and Snout (if applicable)	Wipe down with clean cloth and warm water.
Every 6 Months	Icemaker and Dispenser Unit/ Storage Bin	Clean and sanitize per the cleaning and sanitizing instructions provided in this manual.
	Evaporator Condensate Drain Pan and Gear Motor Drain Pan	Wipe down with clean cloth and warm water. Slowly pour one cup of sanitizing solution (prepare as outlined in the sanitizing instructions in this manual) into the evaporator condensate drain pan. Be careful not to overflow the pan. This solution will flow down to the gear motor drain pan and out the drain line to sanitize these areas. Repeat with a cup of clean water to rinse.
	Icemaker and Dispenser Unit/ Storage Bin Drains	Check to make sure they are clear.
Yearly	Inlet Water Valve and Drain Valve	Close the water supply line shut-off valve and drain the water system. Clean the inlet water valve screen and clean and inspect the drain valve.
	Water Hoses	Inspect the water hoses and clean/replace if necessary.
	Condenser (air-cooled and remote air-cooled)	Inspect. Clean if necessary by using a brush or vacuum cleaner.
	Icemaker	Inspect for oil spots, loose components, fasteners, and wires.
	Upper Bearing (extruding head)	Check for wear using .02" round stock or pin gauge. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. See the Service Manual for details.

Maintenance Schedule (continued)		
Frequency	Area	Task
After 3 Years, then Yearly	Upper Bearing (extruding head); Lower Bearing and O-Ring (lower housing); Mechanical Seal; Evaporator Cylinder; Auger	Inspect. Replace both upper bearing and lower bearing if wear exceeds factory recommendations. Replace the mechanical seal if the seal's contact surfaces are worn, cracked, or scratched.

C. Preparing the Icemaker for Long Storage

CAUTION

When storing the icemaker for an extended time or in sub-freezing temperatures, follow the instructions below to prevent damage.

When the icemaker is not used for two or three days under normal conditions, it is sufficient to only move the power switch to the "OFF" position. When storing the icemaker for extended time or in sub-freezing temperatures, follow the instructions below.

1. Remove the water from the icemaker water supply line:

- 1) Turn off the power supply, then remove the front panel.
- 2) Move the power switch to the "OFF" position.
- 3) Close the icemaker water supply line shut-off valve, then open the icemaker water supply line drain valve.
- 4) Allow the line to drain by gravity.
- 5) Attach a compressed air or carbon dioxide supply to the icemaker water supply line drain valve.
- 6) Move the control switch to the "ICE" position, then move the power switch to the "ON" position. Replace the front panel in its correct position, then turn on the power supply.
- 7) Blow the icemaker water line out using the compressed air or carbon dioxide supply.
- 8) Close the icemaker water supply line drain valve.

2. Drain the evaporator:

- 1) Turn off the power supply, then remove the front panel.
- 2) Move the control switch to the "DRAIN" position, then replace the front panel in its correct position.
- 3) Turn on the power supply and allow the water system to drain for 5 minutes.
- 4) Turn off the power supply, then remove the front panel. Move the power switch to the "OFF" position.
- 5) Remove the evaporator drain line hose from the evaporator and attach a compressed air or carbon dioxide supply to the hose.

- 6) Turn on the power supply, then move the power switch to the "ON" position. Blow out the evaporator drain line using the compressed air or carbon dioxide supply until water stops coming out.
- 7) Move the power switch to the "OFF" position, then turn off the power supply. Reconnect the evaporator drain line hose.
- 8) Replace the front panel in its correct position.
- 9) Remove all ice from the dispenser unit/storage bin. Clean the dispenser unit/storage bin liner using a neutral cleaner. Rinse thoroughly after cleaning.

3. On water-cooled model only, first remove the water from the water-cooled condenser:

- 1) Make sure the power supply is off, then remove the front and right side panels.
- 2) Close the condenser water supply line shut-off valve. If connected to a closed loop system, also close the condenser return line shut-off valve.
- 3) Open the condenser water supply line drain valve. If connected to a closed loop system, also open the condenser return line drain valve.
- 4) Attach a compressed air or carbon dioxide supply to the condenser water supply line drain valve.
- 5) Open the water regulating valve by using a screwdriver to pry up on the spring retainer underneath the spring. While holding the valve open, blow out the condenser using the compressed air or carbon dioxide supply until water stops coming out.
- 6) Close the drain valve(s).
- 7) Replace the right side panel and front panel in their correct positions.

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