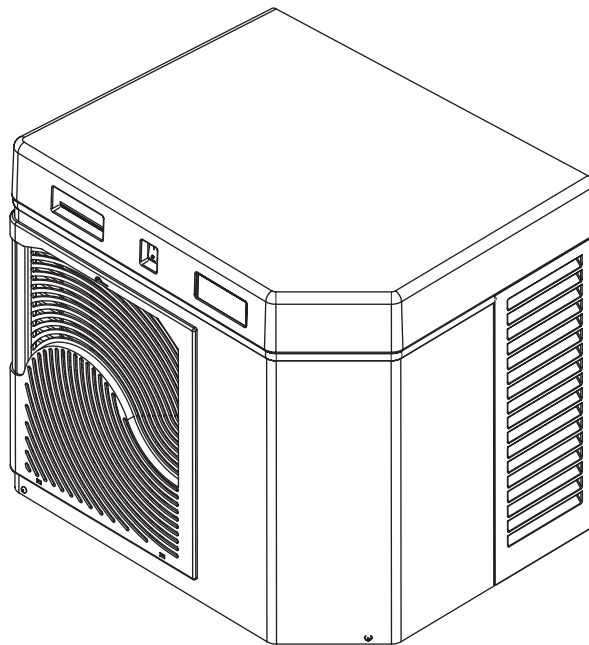


# HCC/HMC1000A, HCC/HMC1000W Ice Machines

Order parts online  
[www.follettice.com](http://www.follettice.com)

## Operation and Service Manual After Serial Number C20000



**Following installation, please forward this manual  
to the appropriate operations person.**



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# Welcome to Follett

Follett equipment enjoys a well-deserved reputation for excellent performance, long-term reliability and outstanding after-the-sale support. To ensure that this equipment delivers the same degree of service, we ask that you review the installation manual (provided as a separate document) before beginning to install the unit. Our instructions are designed to help you achieve a trouble-free installation. Should you have any questions or require technical help at any time, please call our technical service group at (877) 612-5086 or +1 (610) 252-7301.

## Before you begin

After uncrating and removing all packing material, inspect the equipment for concealed shipping damage. If damage is found, notify the shipper immediately and contact Follett Corporation so that we can help in the filing of a claim, if necessary.

Check your paperwork to determine which model you have. Follett model numbers are designed to provide information about the type and capacity of Follett equipment. Following is an explanation of the different model numbers in the 1000 series.

**Chewblet® Ice Machine Model Number Configurations**

| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">HC</div> <div style="border: 1px solid black; padding: 2px 5px;">C</div> <div style="border: 1px solid black; padding: 2px 5px;">700</div> <div style="border: 1px solid black; padding: 2px 5px;">A</div> <div style="border: 1px solid black; padding: 2px 5px;">V</div> <div style="border: 1px solid black; padding: 2px 5px;">S</div> </div> |                                                                                                          |                             |                                                                         |                                      |                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------|--------------------------------------|--------------------------------------|
| Machine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Voltage                                                                                                  | Series                      | Condenser                                                               | Application                          | Configuration                        |
| MC Maestro™ Chewblet (400 Series)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | C 208-230/60/1 (icemaking head) <i>Self-contained only.</i>                                              | 400 up to 454 lbs (206kg)   | A Air-cooled, self-contained                                            | V Vision™                            | S RIDE®                              |
| HC Horizon Chewblet (1000, 1400, 1650 Series)                                                                                                                                                                                                                                                                                                                                                                                                                                              | D 115/60/1 (icemaking head) <i>Self-contained and remote. If remote unit, high side is 208-230/60/1.</i> | 700 up to 750 lbs (340kg)   | W Water-cooled, self-contained                                          | H Harmony™                           | (RIDE remote ice delivery equipment) |
| HM Horizon Micro Chewblet                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | E 230/50/1 (icemaking head) <i>Self-contained only.</i>                                                  | 1000 up to 1036 lbs (471kg) | R Air-cooled, remote condensing unit                                    | B Ice storage bin                    | T Top-mount                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | F 115/60/1 (icemaking head) <i>Remote only. High side is 208-230/60/3.</i>                               | 1400 up to 1450 lbs (658kg) | N Air-cooled, no condensing unit for connection to parallel rack system | J Drop-in                            |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                          | 1650 up to 1580 lbs (717kg) |                                                                         | M Ice Manager™ diverter valve system |                                      |



### CAUTION

- Warranty does not cover exterior or outside installations.
- Moving parts. Do not operate with front cover removed.
- Hot parts. Do not operate with cover removed.
- To reduce risk of shock, disconnect power before servicing.
- Most ice machine cleaners contain citric or phosphoric acid, which can cause skin irritation. Read caution label on product and follow instructions carefully.
- Ice is slippery. Maintain counters and floors around dispenser in a clean and ice-free condition.
- Ice is food. Follow recommended cleaning instructions to maintain cleanliness of delivered ice.

# Specifications

## Electrical

Each ice machine requires its own separate circuit with electrical disconnect within 10 ft (6m).

Equipment ground required.

Standard electrical – 208-230/60/1

Maximum ice machine fuse – 15 amps each

Amperage – 11 amps

6 ft (2m) NEMA 6-15 cord and plug provided on ice machine

## Plumbing

3/8" OD push-in water inlet

3/4" MPT drain

1/4" FPT condenser inlet (water-cooled condenser only)

1/4" FPT condenser drain (water-cooled condenser only)

**Notes:** 3/4" vented drain line must slope a minimum of 1/4" per foot (6mm per 30.4cm run).

Drain to be hard piped and insulated.

To prevent back flow, do not connect drains.

Separate drains for ice machine and condenser.

Water shut-off recommended within 10 feet (3m).

Follett recommends installation of Follett water filter system (part# 00130286) in ice machine inlet water line.

## Ambient

Air temperature

100 F/38 C max.

50 F/10 C min.

Water temperature

90 F/32 C max.

45 F/7 C min.

Water pressure – potable

70 psi max. (483 kPa)

10 psi min. (89 kPa)

**Note:** Water-cooled condenser pressure 150 psi (1034 kPa)

## Heat rejection

Air-cooled rejects 11,300 BTU/hr

Water-cooled rejects 12,800 BTU/hr

## Ice production

Air-cooled ice machine

capacity/24 hrs. hrs.

| Ambient Air Temperature F/C   |    |      |      |     |            |     |     |
|-------------------------------|----|------|------|-----|------------|-----|-----|
| Potable Water Temperature F/C | F  | 60   | 70   | 80  | 90         | 100 |     |
|                               | C  | 16   | 21   | 27  | 32         | 38  |     |
|                               | 50 | 1135 | 1100 | 962 | 828        | 786 | lbs |
|                               | 10 | 515  | 499  | 437 | 376        | 357 | kg  |
|                               | 60 | 1070 | 1000 | 916 | 816        | 728 | lbs |
|                               | 16 | 486  | 454  | 416 | 371        | 331 | kg  |
|                               | 70 | 1015 | 938  | 871 | <b>794</b> | 686 | lbs |
|                               | 21 | 461  | 426  | 395 | <b>361</b> | 312 | kg  |
|                               | 80 | 967  | 902  | 826 | 755        | 654 | lbs |
|                               | 27 | 439  | 410  | 375 | 343        | 297 | kg  |
|                               | 90 | 924  | 859  | 782 | 698        | 610 | lbs |
|                               | 32 | 420  | 390  | 355 | 317        | 277 | kg  |

Water-cooled ice machine

capacity/24 hrs. hrs.

| Condenser Water Temperature F/C       |    |      |      |     |            |     |     |
|---------------------------------------|----|------|------|-----|------------|-----|-----|
| Potable Make-up Water Temperature F/C | F  | 60   | 70   | 80  | 90         | 100 |     |
|                                       | C  | 16   | 21   | 27  | 32         | 38  |     |
|                                       | 50 | 1071 | 1035 | 975 | 885        | 762 | lbs |
|                                       | 10 | 486  | 470  | 443 | 402        | 346 | kg  |
|                                       | 60 | 1025 | 979  | 912 | 826        | 723 | lbs |
|                                       | 16 | 465  | 444  | 414 | 375        | 328 | kg  |
|                                       | 70 | 971  | 932  | 870 | <b>786</b> | 683 | lbs |
|                                       | 21 | 441  | 423  | 395 | <b>357</b> | 310 | kg  |
|                                       | 80 | 912  | 888  | 839 | 759        | 642 | lbs |
|                                       | 27 | 414  | 403  | 381 | 345        | 292 | kg  |
|                                       | 90 | 849  | 842  | 814 | 745        | 603 | lbs |
|                                       | 32 | 386  | 382  | 370 | 338        | 274 | kg  |

## Dimensions and clearances

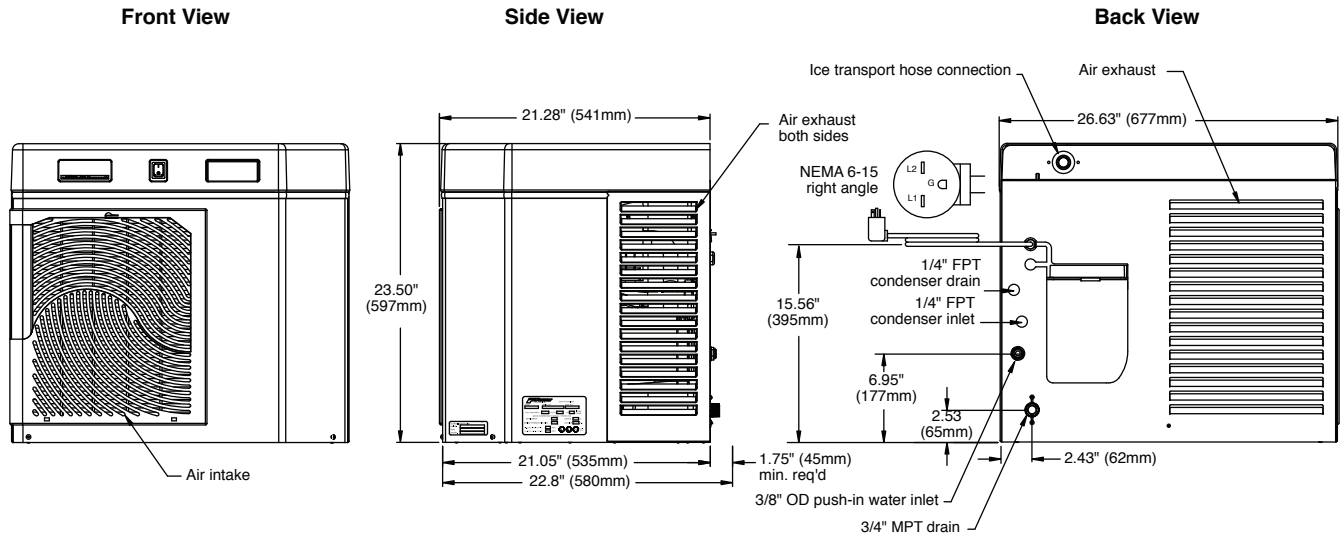
Entire front of ice machine must be clear of obstructions/connections to allow removal.

1" (26mm) clearance above ice machine for service.

1" (26mm) minimum clearance on sides.

The intake and exhaust air grilles must provide at least 150 sq in (968 sq cm) of open area.

Air-cooled model ice machines – 18" (458mm) minimum clearance between discharge and air intake-grilles.



## Operation

### Cleaning and preventive maintenance (all models)

**Note:** Do not use bleach to sanitize or clean the ice machine.

#### Preventive maintenance

Periodic cleaning of Follett's ice machine system is required to ensure peak performance and delivery of clean, sanitary ice. The recommended cleaning procedures that follow should be performed at least as frequently as recommended, and more often if environmental conditions dictate.

Cleaning of the condenser can usually be performed by facility personnel. Cleaning of the ice machine system, in most cases, should be performed by your facility's maintenance staff or a Follett authorized service agent. Regardless of who performs the cleaning, it is the operator's responsibility to see that this cleaning is performed according to the schedule below. Service problems resulting from lack of preventive maintenance will not be covered under the Follett warranty.

#### Weekly exterior care

The exterior may be cleaned with a stainless cleaner such as 3M Stainless Steel Cleaner & Polish or equivalent.

#### Monthly condenser cleaning (air-cooled ice machine only)

1. Use a vacuum cleaner or stiff brush to carefully clean condenser coils of air-cooled ice machines to ensure optimal performance.
2. When reinstalling counter panels in front of remote ice machines, be sure that ventilation louvers line up with condenser air duct.

### Semi-annual evaporator cleaning (every 6 months)



#### WARNING

- Wear rubber gloves and safety goggles (and/or face shield) when handling ice machine cleaner or sanitizer.



#### CAUTION

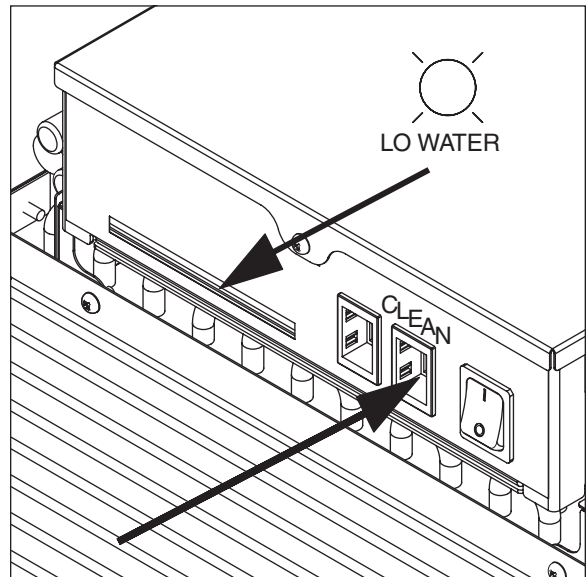
- Use only Follett approved SafeCLEAN™ Cleaner (part #00132001) and NU-CALGON IMS-II or IMS-III SANITIZER.
- Do not mix Cleaner and Sanitizer solutions together.
- DO NOT USE BLEACH.
- It is a violation of Federal law to use these solutions in a manner inconsistent with their labeling.
- Read and understand all labels printed on packaging before use.

**Note: Complete procedure for cleaning and sanitizing MUST be followed. Ice must be collected for 10 minutes before putting ice machine back into service.**

1. To clean – Remove cover. Press the CLEAN button. The machine will drain. Wait for the LO WATER light to come on (Fig. 1).

**Note: For Ice Manager diverter valve application, refer to manual #00169045 for ice machine and diverter valve cleaning process.**

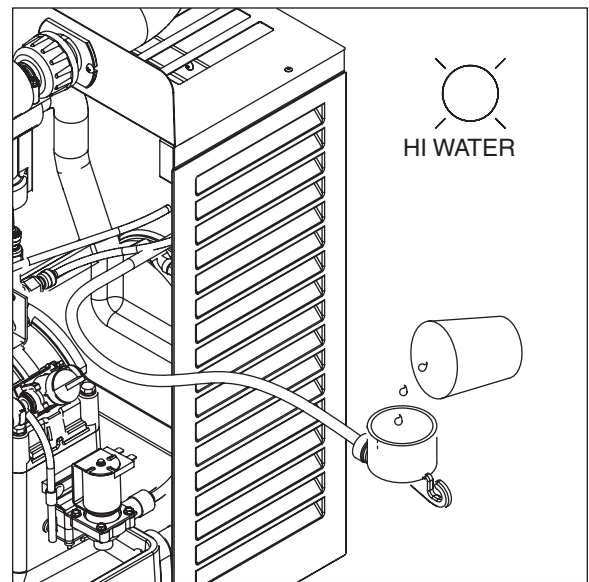
**Fig. 1**



2. Mix 1 gallon (3.8L) 120 F (49 C) water and 7 ounces (198g) (one 7 ounce packet of Follett SafeCLEAN ice machine cleaner, part#-00132001). Locate cleaning cup. Fill until HI WATER light comes on (Fig. 2).

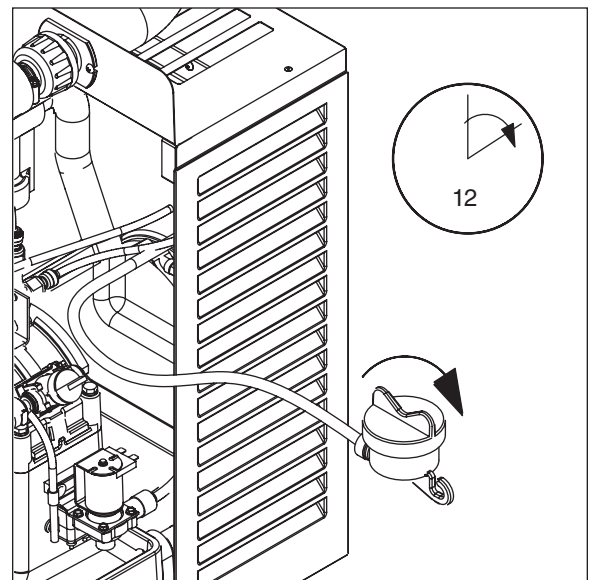
**Note:** Do not use bleach to sanitize or clean the ice machine.

Fig. 2



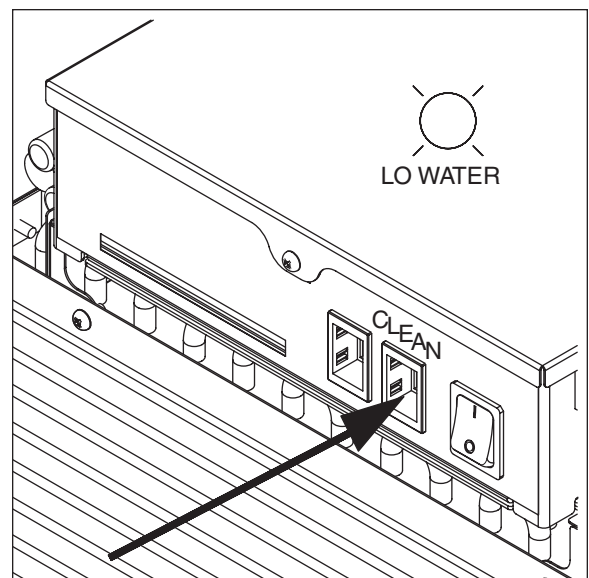
3. Replace cover on cleaning cup. Wait until machine restarts. Machine will clean, then flush 3 times in approximately 12 minutes (Fig. 3).

Fig. 3



4. To sanitize – Press CLEAN button. The machine will drain. Wait for LO WATER light to come on (Fig. 4).

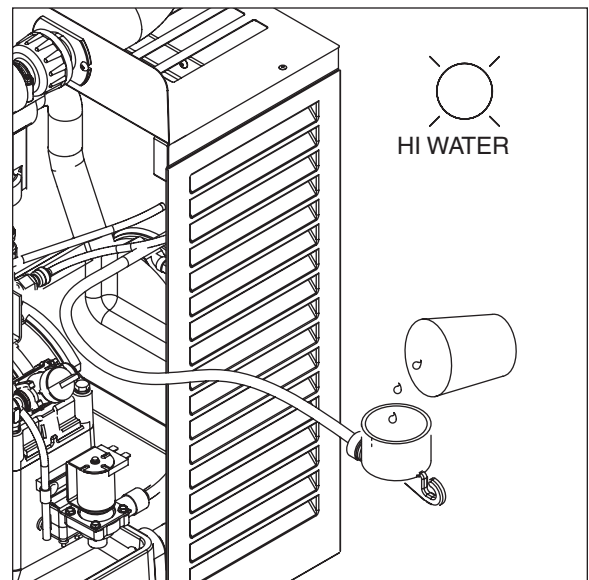
Fig. 4



5. Mix 1 gallon 120 F (49 C) water and 1.6 ounces (48ml) NU-CALGON IMS-II or IMS-III SANITIZER. Fill until HI WATER light comes on (Fig. 5).

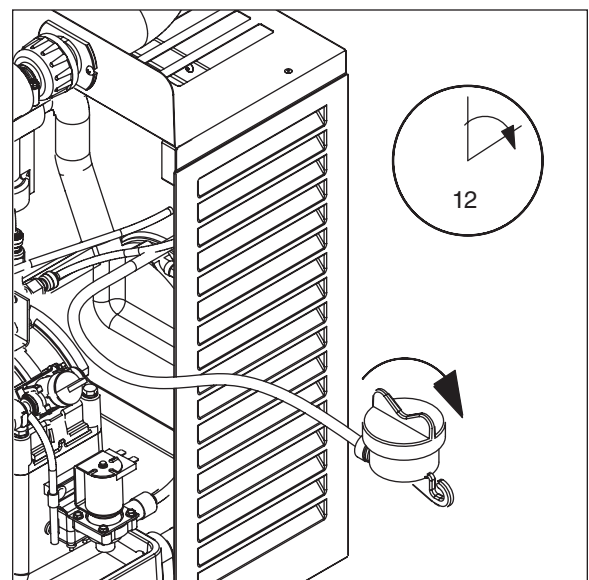
**Note:** Do not use bleach to sanitize or clean the ice machine.

**Fig. 5**



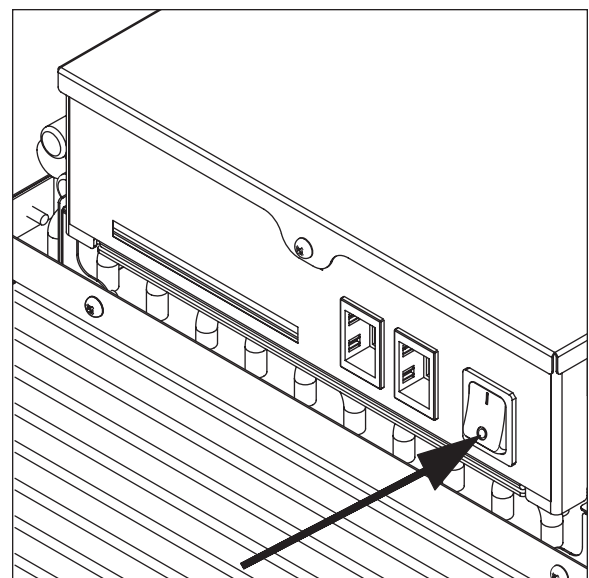
6. Replace cover on cleaning cup. Wait until machine restarts. Machine will sanitize, then flush 3 times in approximately 12 minutes (Fig. 6).

**Fig. 6**



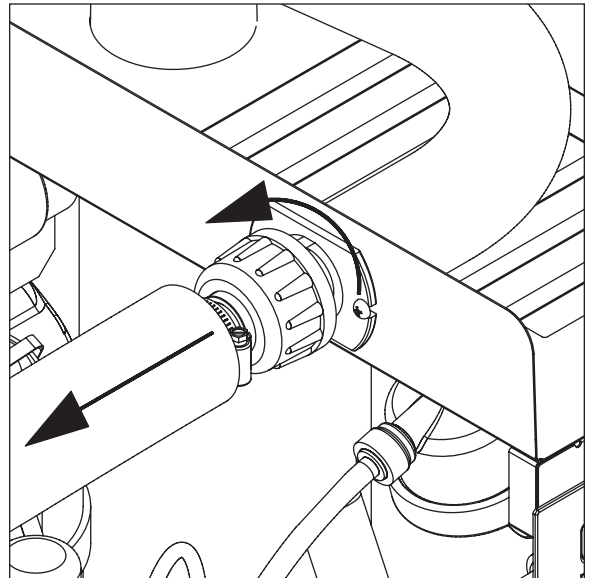
7. To clean transport tube – Press power switch OFF (Fig. 7).

**Fig. 7**



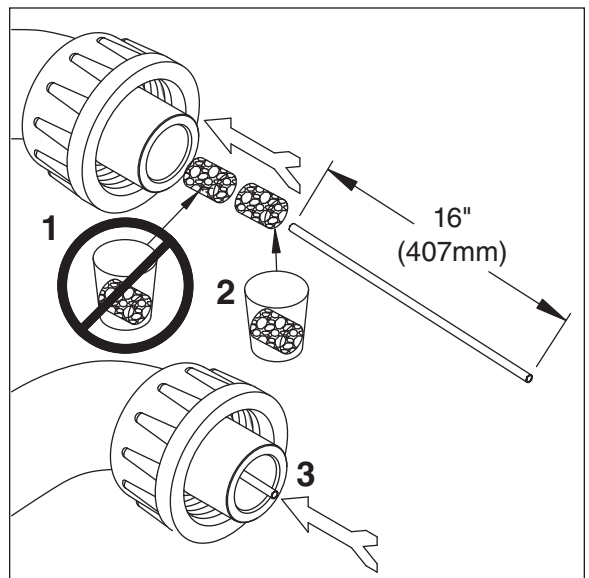
8. Disconnect coupling as shown (Fig. 8).

**Fig. 8**



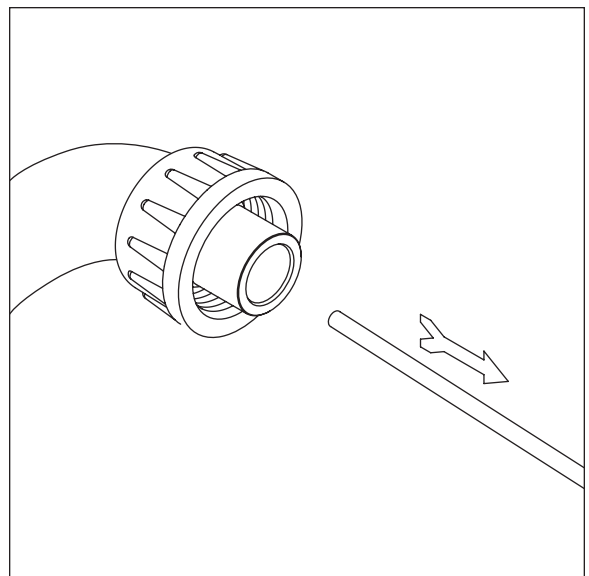
9. Using disposable food service grade gloves, insert dry Sani-Sponge™ (kit part# 00132068). Next, -insert Sani-Sponge soaked in Nu-Calgon IMS-II or IMS-III sanitizer solution. Push both Sani-Sponges down ice transport tube with supplied pusher tube (Fig. 9).

**Fig. 9**



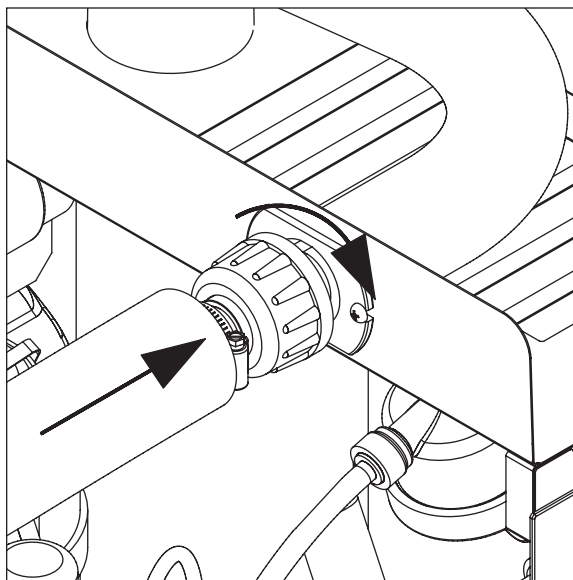
10. Remove and discard 16" (407mm) pusher tube (Fig. 10).

**Fig. 10**



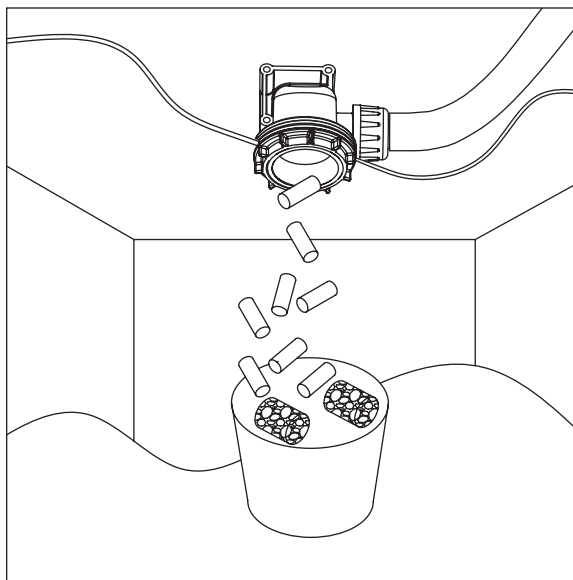
11. Reconnect coupling. Press power switch ON. Ice pushes Sani-Sponges through tube (Fig. 11).

**Fig. 11**



12. Place a sanitary (2 gallon or larger) container in bin or dispenser to collect Sani-Sponges and ice for 10 minutes. Collect 5.5 lbs (3kg) of ice from unit. Discard ice and Sani-Sponges (Fig. 12).

**Fig. 12**



# Service

## Ice machine operation (all models)

Follett's ice machine consists of five distinct functional systems covered in detail as follows:

- Water system
- Electrical control system
- Mechanical assembly
- Refrigeration system
- Bin full

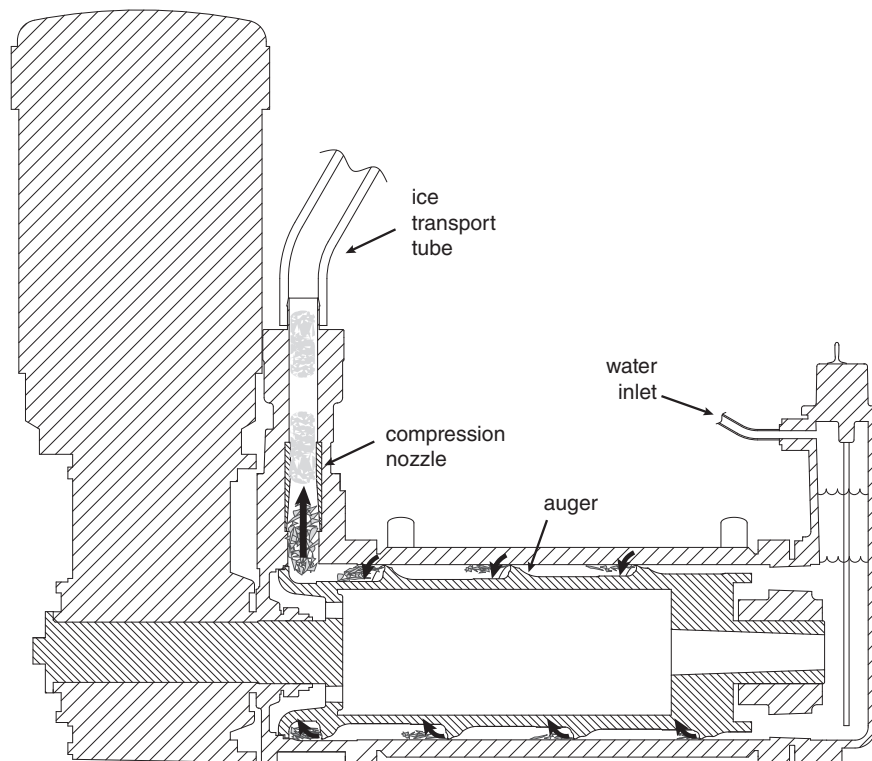
### The Horizon ice machine overview

The Follett Horizon ice machine uses a horizontal, cylindrical evaporator to freeze water on its inner surface. The refrigeration cycle is continuous; there is no batch cycle. The evaporator is flooded with water and the level is controlled by sensors in a reservoir. A rotating auger (22 RPM) continuously scrapes ice from the inner wall of the evaporator. The auger moves harvested ice through the evaporator into an ice extrusion canal. The ice is forced through a restrictive nozzle that squeezes out the water and creates the Chewblet. The continuous extrusion process pushes the Chewblets through a transport tube into a dispenser or bin.

A solid state PC board controls and monitors the functionality of the ice machine. In addition to sequencing electrical components, the board monitors various operational parameters. A full complement of indicator lights allows visual status of the machine's operation. Additionally, the PC board controls the self-flushing feature of the ice machine. The evaporator water is periodically drained and replenished to remove minerals and sediment.

A unique "bin full" detection system is incorporated in the Horizon ice machine. A switch located at the ice discharge port of the machine detects the position of the transport tube. When the bin fills up with ice, the transport tube moves out of the normal running position, and the switch turns the ice maker off. A domed housing at the end of the transport tube contains the ice extrusion loads during shut down.

### Harvest system diagram



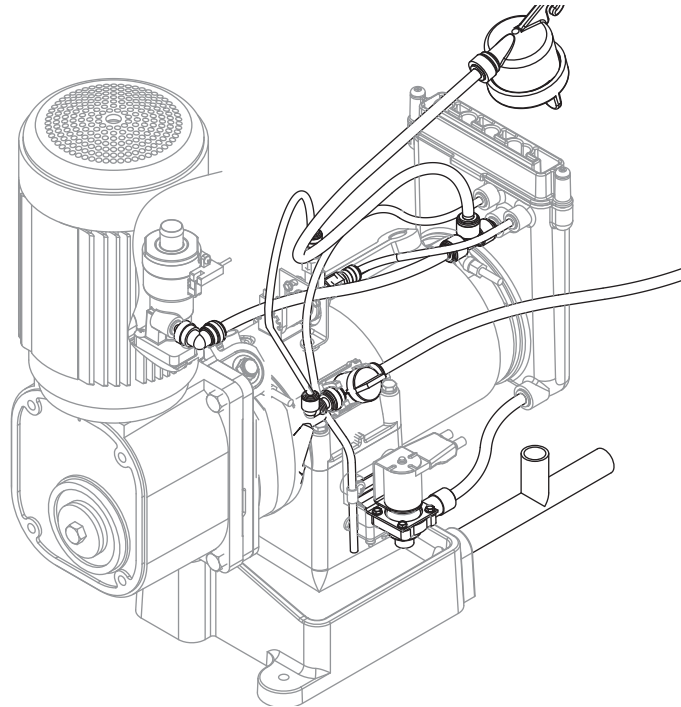
## Water system

The water level in the evaporator is controlled by a feed solenoid and level detecting sensors. Referencing the diagram below, water sensing rods extend down into the reservoir at the end of the evaporator assembly. The system works via electrical conductivity as follows:

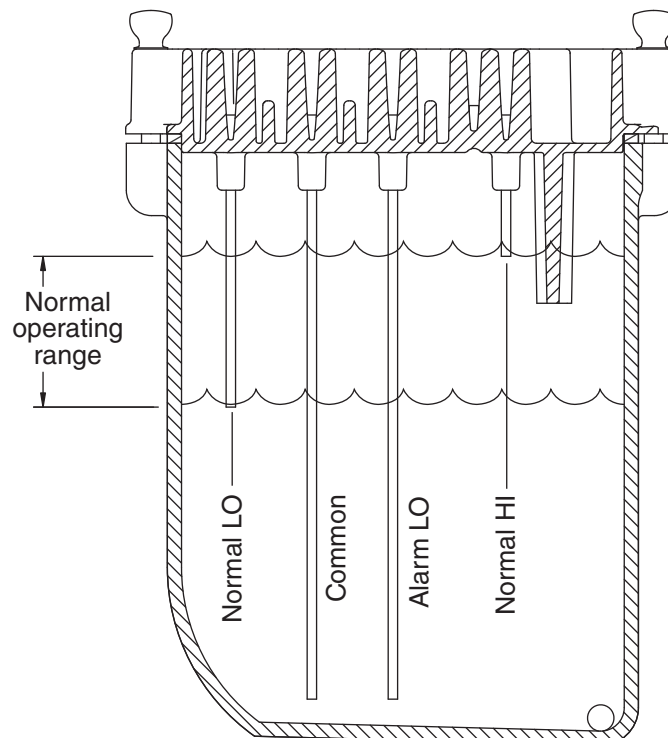
One of the longest probes is a common. When water is between any of the other probes and the common, the PC board will sense the activation. During normal operation, the water level rises and falls between the Normal High and Normal Low sensors. As water is consumed to make ice, the level will fall until the Normal Low sensor is exposed, triggering the water feed solenoid on. Water will fill until the Normal High sensor is activated.

**Note:** The potable water dissolved solids content must be greater than 10 ppm for the water control system to function properly. If using reverse osmosis water filtration system, ensure T.D.S level is greater than 10 ppm.

### Water system diagram



### Water level diagram



# Electrical system

## Normal control board operation

The PC board indicator lights provide all the information necessary to determine the machine's status. Green indicator lights generally represent “go” or normal operation; Yellow indicators represent normal off conditions; Red indicators generally represent alarm conditions, some of which will lock the machine off.

A green light labeled POWER indicates power to the machine. A flashing green light labeled CPU is normal and indicates that the Central Processing Unit “heart beat” is working. All other normal operation status indicators are covered as follows:

| Ice machine disposition                                                                                                                                                                                                              |  | Operation conditions                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legend:    ● ON    ○ OFF    ◐ ON or OFF    ● FLASHING                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. Ice machine is making ice.<br><br>CPU ●<br>LO WATER ○<br>HI WATER ○<br>DRAIN CLOG ○<br><br>HI PRESS ○<br>HI AMPS ○<br>SERVICE ○<br>PURGE ○<br>CLEANING ○<br>TIME DELAY ○<br>REFRIG ON ●<br>AUGER ON ●<br>LOW BIN ●<br>POWER ●     |  | 1. Normal running.                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. Ice machine is not making ice.<br><br>CPU ●<br>LO WATER ○<br>HI WATER ○<br>DRAIN CLOG ○<br><br>HI PRESS ○<br>HI AMPS ○<br>SERVICE ○<br>PURGE ○<br>CLEANING ○<br>TIME DELAY ●<br>REFRIG ON ○<br>AUGER ON ○<br>LOW BIN ◐<br>POWER ● |  | 2. <b>Normal time delay.</b> When the bin fills with ice, the LOW BIN light goes out and the refrigeration and auger drive systems immediately shut down. ( <b>Note:</b> The fan motor will continue to run for 10 minutes to cool condenser) The TIME DELAY light comes on, initiating the time delay period. When the time delay expires, the machine will restart provided that the LOW BIN light is on. |
| 3. Ice machine is not making ice.<br><br>CPU ●<br>LO WATER ○<br>HI WATER ○<br>DRAIN CLOG ○<br><br>HI PRESS ○<br>HI AMPS ○<br>SERVICE ○<br>PURGE ●<br>CLEANING ○<br>TIME DELAY ○<br>REFRIG ON ○<br>AUGER ON ○<br>LOW BIN ●<br>POWER ● |  | 3. <b>Normal purge indicator.</b> After a selected period of ice making time has elapsed (1 or 2 hours), the ice machine will automatically self-flush. The compressor will shut down but the fan and gearmotor will continue to run. After the flush is complete the machine will refill and start without a time delay.                                                                                   |

**Test points:**

The Horizon PC board incorporates on-board test points that can be used to determine various electrical outputs. The test point holes allow a standard probe to be inserted for quick voltage measurement. For 208-230 systems, use TP-4 (L2) as the common for testing outputs for solenoids, motors, etc.

**Error faults:**

The Horizon PC board monitors various operating parameters including high pressure, auger gearmotor amperage limits, clogged drain, and high and low water alarm conditions. There are two types of errors namely "hard" or "soft". A hard error is one that shuts the machine off and will not allow restart until the reset button is pressed. Even cycling power will not reset a hard error. A soft error can either be automatically reset should the condition rectify, or if power is cycled. Should an error occur, consult the troubleshooting guide in this manual or a Follett service technician. **Note:** there are two types of LO WATER and HI AMPS errors as listed below.

**Soft errors:**

**HI AMPS:** The PC board monitors the amperage of the auger motor. Should the gear motor experience current draw above the 3.8 amps limit the machine will shut down and the TIME DELAY, HI AMP, and SERVICE LED's will be illuminated. After the time delay the machine will restart and the TIME DELAY, HI AMP, and SERVICE LED's will clear.

**LO WATER:** During operation, the water level cycles between the normal low and normal high sensors. Should the water be shut off to a running machine, a soft error will occur. The error sequence is as follows: During operation, the water level falls to the normal low sensor, and when it does the water feed solenoid is energized. If water is not detected at the normal low sensor within 120 seconds, a soft error will occur. The machine will shut down, but the water feed solenoid will remain energized. Should water return, it will fill to the normal low sensor and the machine will resume normal operation. The error will clear automatically.

**DRAIN CLOG:** The drain clog sensor, located in the plastic drain pan behind the drain solenoid, will detect the presence of water just below the top edge of the pan. If water does not properly flow out of the drain pan it will rise to the sensor, especially during a self-flushing purge cycle. Turning the power switch off and then back on again will restart the ice machine.

For Serial Number D14462 higher:

**HI PRESSURE:** Should the refrigeration pressure rise above 425 psi, the machine will shut down and the TIME DELAY, HIGH PRESSURE, and SERVICE LEDs will be illuminated. After the time delay, and if the pressure has fallen back below the reset point of 295 psi, the machine will restart and the TIME DELAY, HIGH PRESSURE, and SERVICE LEDs will clear.

**Hard error:**

**HI AMPS:**

1. "Two strikes" feature. If the gearmotor has a second HI AMP occurrence during the countdown period (6 hours after a HI AMP time delay) a hard error will occur and the HI AMP and SERVICE LED's will be illuminated. Reset button must be pressed to clear this error.
2. No current. To prevent the refrigeration system from running without gearmotor rotation the PC board will indicate HIGH AMP and SERVICE if the drive relay is energized and there is no current draw. Reset button must be pressed to clear this error.

For Serial Numbers below D14462:

**HI PRESSURE:** Should the refrigeration pressure rise above 425 psi, a hard error will occur. Even if pressure falls back below the reset point of 295 psi, the error will not clear and the machine will not restart. Reset button must be pressed to clear this error.

**LO WATER:**

1. There is a sensor in the water reservoir that reaches down to the very bottom. The machine will not start if water is not present at this sensor.
2. A hard error will occur should water not be present within 60 seconds of power up or if the sensors are disconnected or damaged. Reset button must be pressed to clear this error.

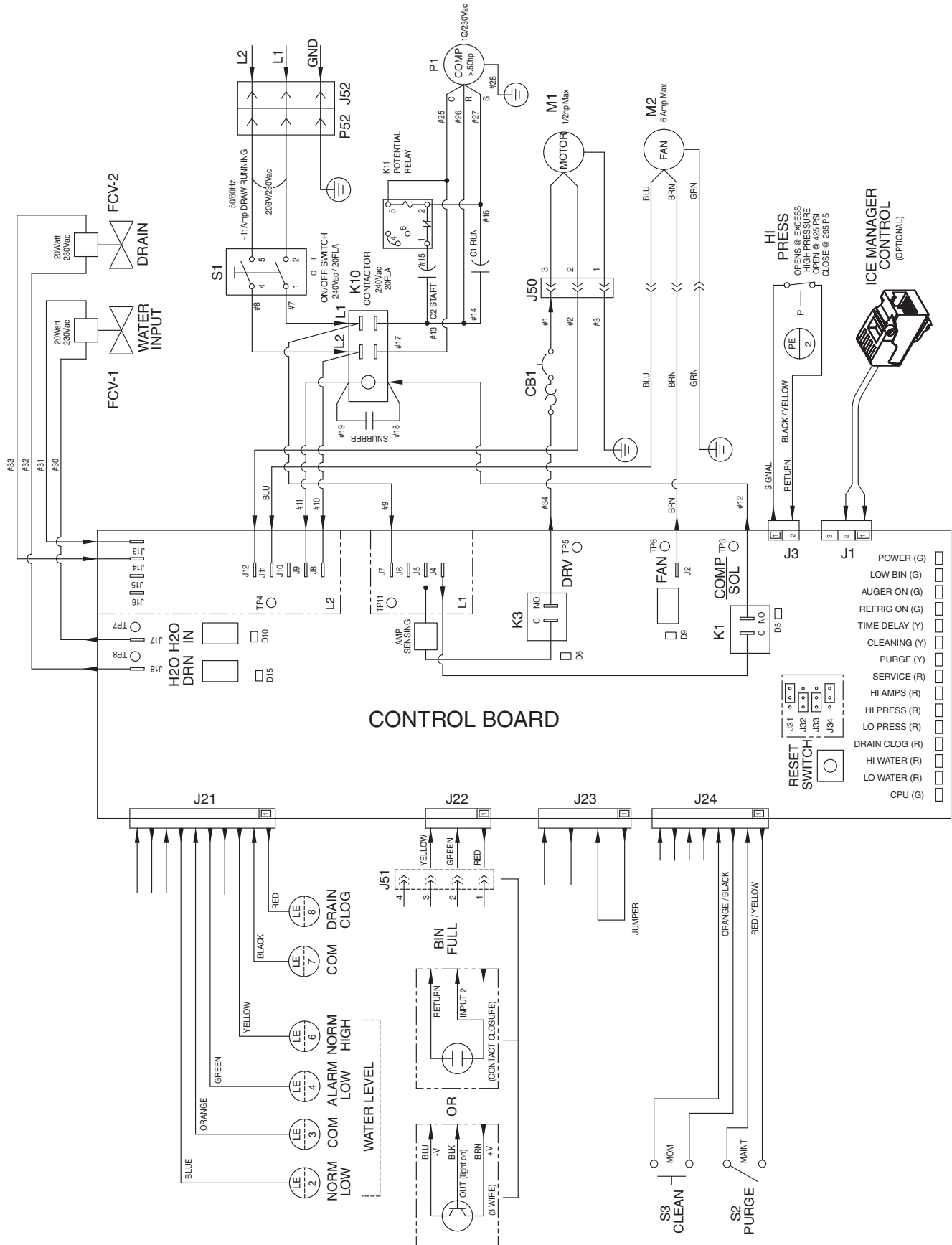
**Relay output indication:**

Each relay on the board has an indicator light associated with its output. For example, when the relay for the water feed solenoid is energized, the adjacent indicator light glows green.

**Comp/Sol output:**

The output for the compressor is labeled COMP/SOL.

# Wiring diagram



### Compressor data

#### Compressor current draw at 230 VAC

##### Air-cooled

|                   |           |           |           |           |            |
|-------------------|-----------|-----------|-----------|-----------|------------|
| Ambient air temp. | 60 F/16 C | 70 F/21 C | 80 F/27 C | 90 F/32 C | 100 F/38 C |
|                   | 7.1       | 7.5       | 7.8       | 7.8       | 8.1        |

##### Water-cooled

|                      |           |           |           |           |           |
|----------------------|-----------|-----------|-----------|-----------|-----------|
| Condenser water temp | 50 F/10 C | 60 F/16 C | 70 F/21 C | 80 F/27 C | 90 F/32 C |
|                      | 7.0       | 7.0       | 7.4       | 6.7       | 8.0       |

**Locked rotor amps** 54

### Gearmotor data

#### Brother

|                   |                |
|-------------------|----------------|
| Gearmotor current | 2.8A (nominal) |
| Locked rotor amps | 15 amps        |

### Resistance of windings

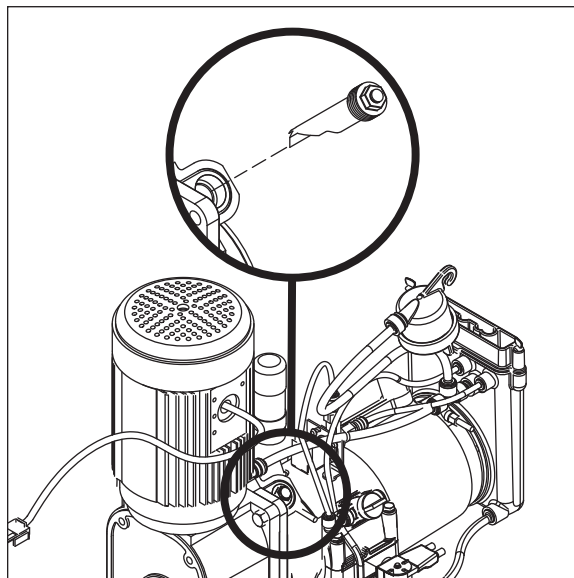
|                                 |      |
|---------------------------------|------|
| 208-230 vac gearmotor (Brother) | 6.2Ω |
| Compressor start winding        | 3.0Ω |
| Compressor run winding          | 1.4Ω |
| Fan motor                       | 38Ω  |

## Mechanical system

### Evaporator disassembly

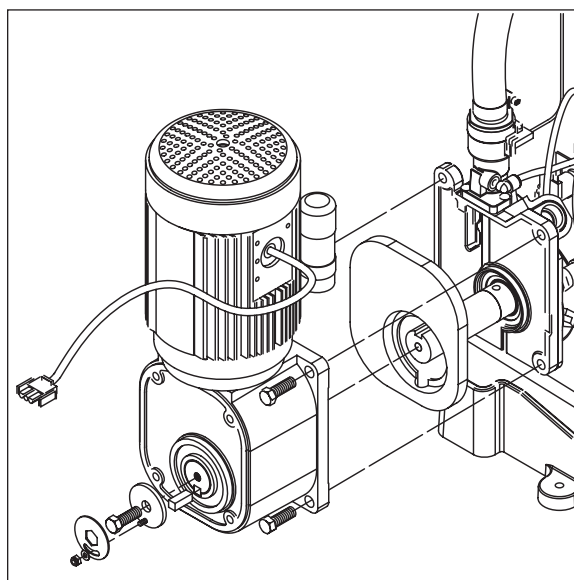
1. Press PURGE button to purge evaporator, and then turn power OFF.
2. Unscrew and remove stream divider as shown.

Fig. 13



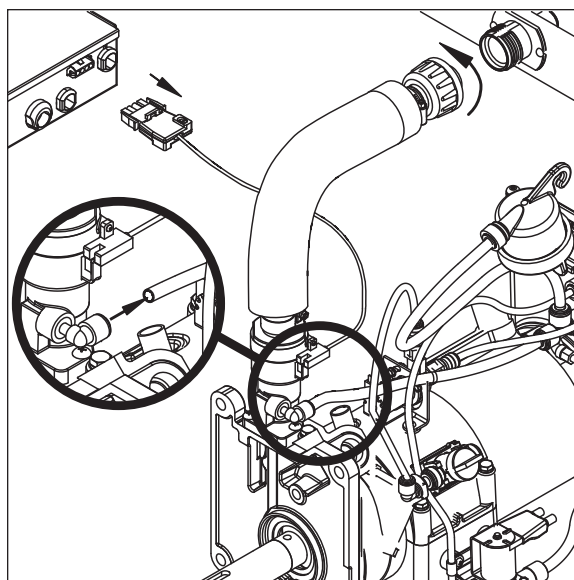
3. Unplug and remove gearmotor as shown.
4. Remove all traces of petrol-gel from the auger shaft.

Fig. 14



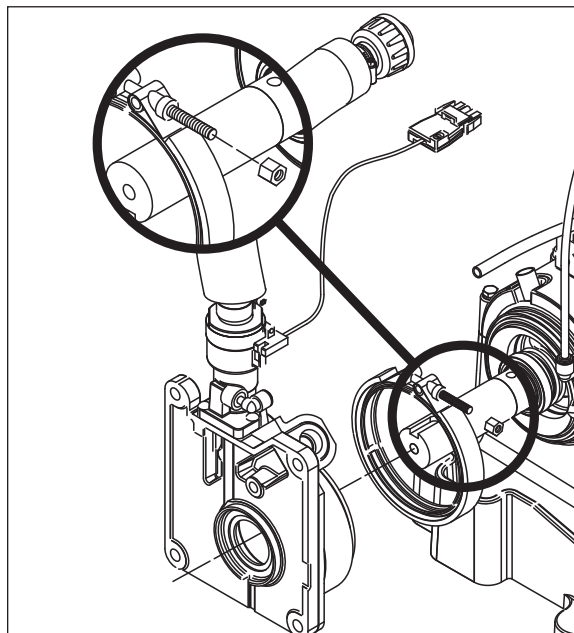
5. Unscrew and disconnect transport tube from louvered docking assembly.
6. Unplug sensor at the electrical box.
7. Remove vent tube from shuttle housing as shown.

Fig. 15



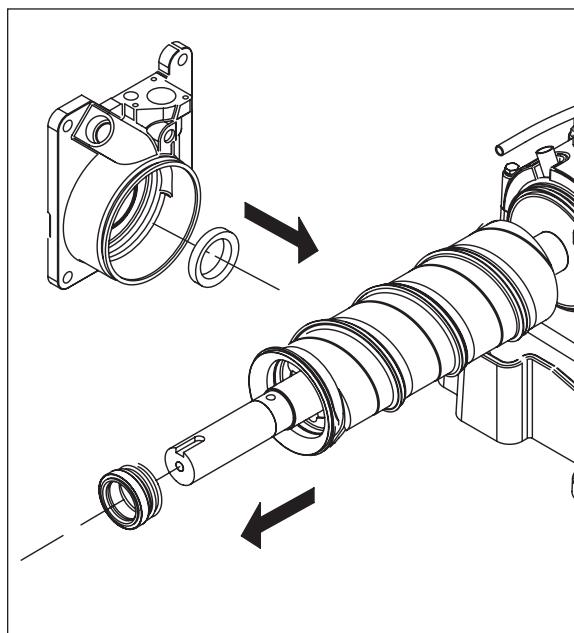
8. Loosen nut on V-band clamp and remove.
9. Remove V-band clamp from front of evaporator.
10. Remove main housing as shown.

**Fig. 16**



11. Remove and discard mating ring and seal.
12. Carefully remove auger.

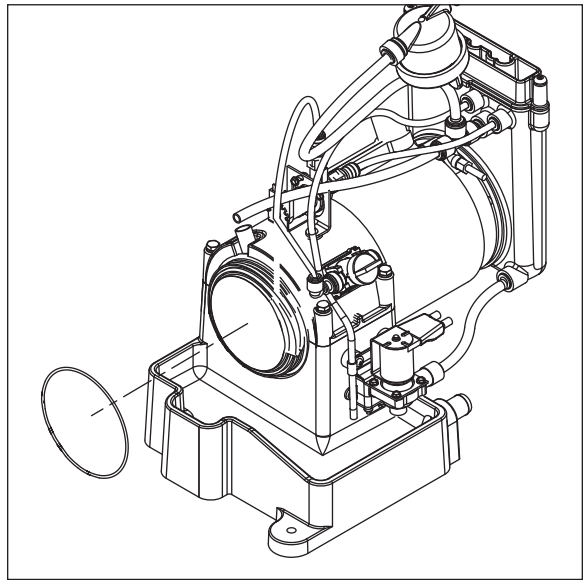
**Fig. 17**



### Evaporator reassembly

1. Remove and inspect O ring seal. Discard if damaged in any way.
2. Clean O ring groove. Lubricate O ring with petrol-gel and reinstall.

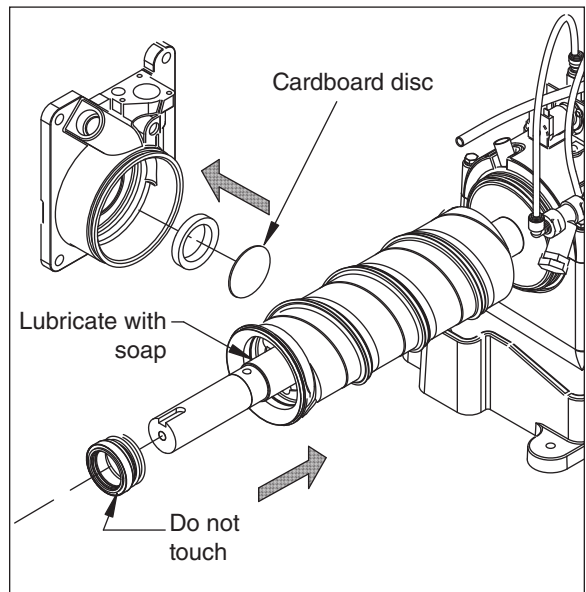
Fig. 18



3. Press new mating ring into main housing as shown.
4. Lube the shaft with liquid soap in the area shown and slip on seal and spring.

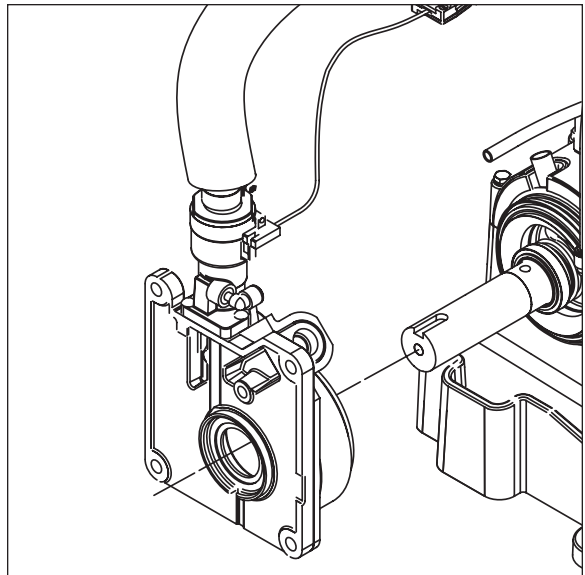
**Note:** Do not touch the sealing surfaces. Use cardboard disk to install.

Fig. 19



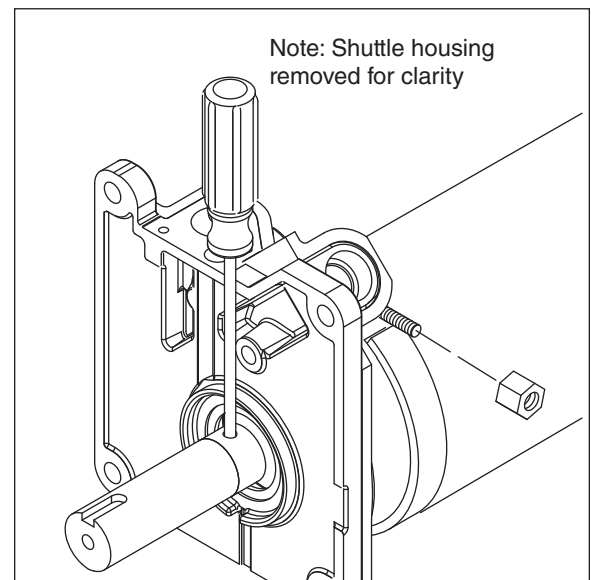
5. Reinstall main housing as shown.

Fig. 20



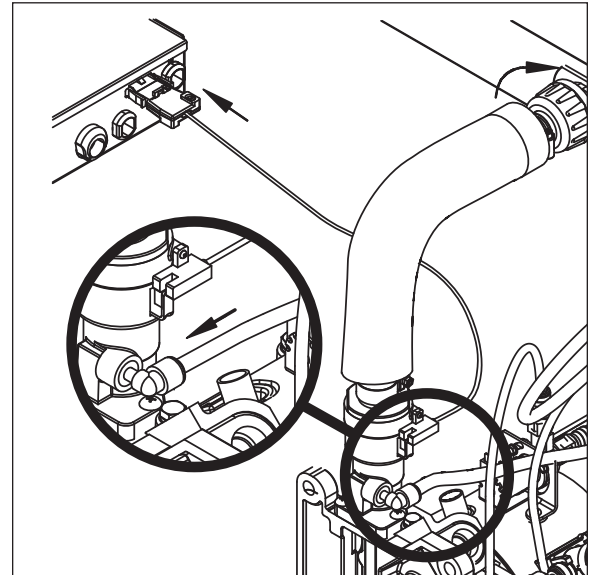
6. Orient auger shaft with keyway in the upward position.
7. Force main housing into position against evaporator and place 1/4" (7mm) diameter Phillips screwdriver into hole in the auger shaft.
8. Replace V-band clamp as shown.
9. Replace nut on V-band clamp and tighten.
10. Remove screwdriver.

**Fig. 21**



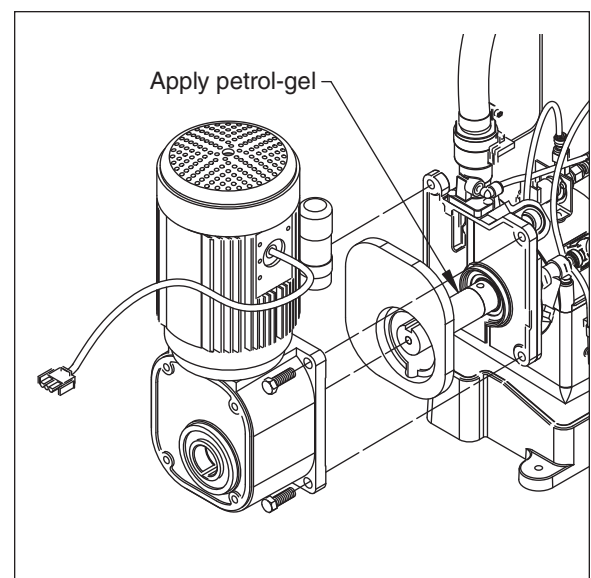
11. Reconnect transport tube to louvered docking assembly.
12. Plug sensor in at the electrical box.
13. Reconnect vent tube to the shuttle housing as shown.

**Fig. 22**



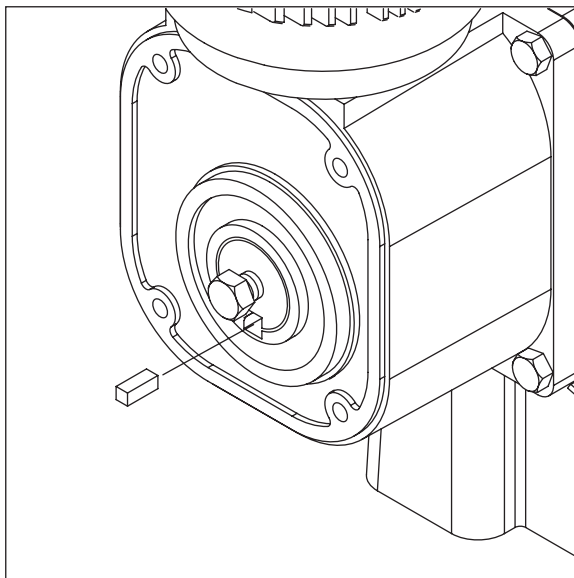
14. Apply a coat of petrol-gel to the auger shaft.
15. Install gearmotor, making sure that insulation is properly seated between gearmotor and main housing as shown.
16. Firmly tighten four gearmotor bolts in place.

**Fig. 23**



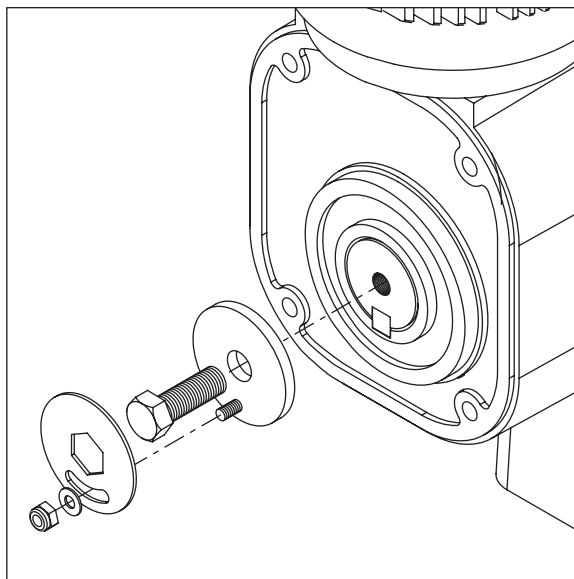
17. Insert a bolt into the auger shaft and finger tighten.
18. Using a wrench, rotate the shaft clockwise to align the keyways in the gear housing and the shaft so as to accept the key.
19. Insert the key into the keyway.

**Fig. 24**



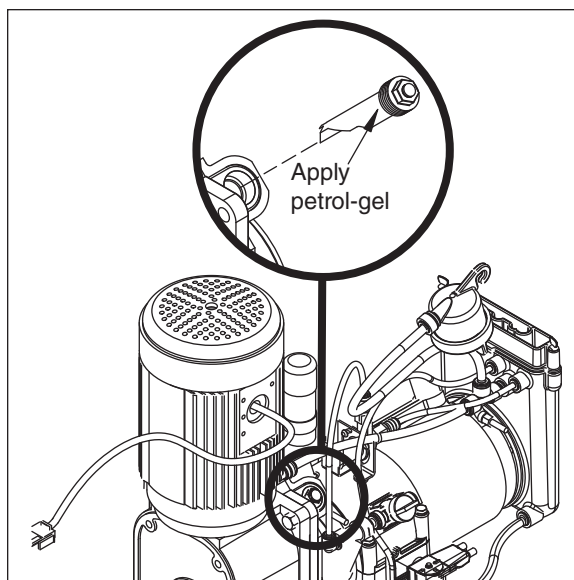
20. Remove bolt and reinstall the washer and bolt. Place retainer over bolt and secure with nut and washer.

**Fig. 25**



21. Lubricate body of stream divider with petrol-gel and reinstall.
22. Plug gearmotor power cord into electrical box.

**Fig. 26**



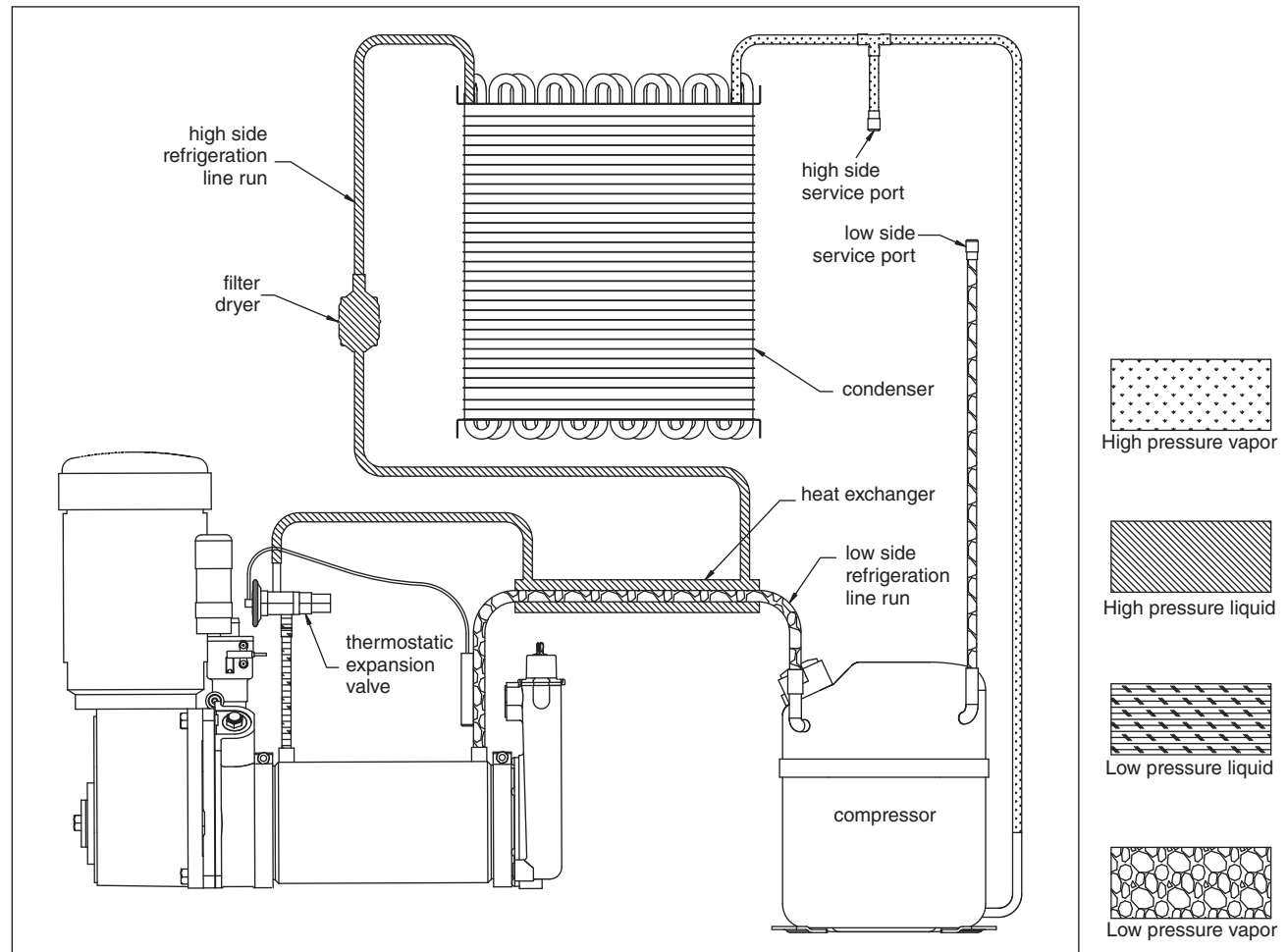
# Refrigeration system

## Refrigerant pressure data

| Air-cooled condensers (air)       | 60 F/16 C | 70 F/21 C | 80 F/27 C | 90 F/32 C | 100 F/38 C |
|-----------------------------------|-----------|-----------|-----------|-----------|------------|
| Pressure (psig) discharge/suction | 218/31    | 241/33    | 277/35    | 313/38    | 349/41     |
| Water-cooled condensers (water)   | 60 F/16 C | 70 F/21 C | 80 F/27 C | 90 F/32 C | 100 F/38 C |
| Pressure (psig) discharge/suction | 219/33    | 225/33    | 231/33    | 232/34    | 236/40     |

**Note:** The water control valve is factory set to maintain  $230 \pm 15$  psi discharge pressure @ 70 F water.

## Refrigeration system diagram



## Refrigeration charge

All service on refrigeration systems must be performed in accordance with all federal, state and local laws. It is the responsibility of the technician to ensure that these requirements are met. Recharging ice machine to other than factory specifications will void the warranty.

| R404A ice machine charge specifications |             |                  |
|-----------------------------------------|-------------|------------------|
| Model                                   | Charge      | Refrigerant type |
| HCC/HMC1000A (air-cooled)               | 24oz (652g) | R404A            |
| HCC/HMC1000W (water-cooled)             | 15oz (426g) | R404A            |

## Refrigerant replacement requirements

1. Non-contaminated refrigerant removed from any Follett refrigeration system can be recycled and returned to the same system after completing repairs. Recycled refrigerant must be stored in a clean, approved storage container. If additional refrigerant is required, virgin or reclaimed refrigerant that meets ARI standard 700-88 must be used.
2. In the event of system contamination (for example, a compressor burn out, refrigerant leak, presence of non-condensibles or moisture), the system must be repaired, evacuated and recharged using virgin or reclaimed refrigerant that meets ARI standard 700-88.
3. Follett Corporation does not approve of recovered refrigerants. Improper refrigeration servicing procedures will void the factory warranty.

## Evacuation

Evacuate the system to a level of 500 microns. When the 500 micron level is reached, close all valves. Allow the system to sit for approximately 20 minutes. During this period the system pressure should not rise. If the system pressure rises and stabilizes there is moisture in the system and further evacuation is needed. If the pressure continues to rise check the system for leaks.

| Ambients                       | Minimum   | Maximum      |
|--------------------------------|-----------|--------------|
| Air temperature <sup>1</sup>   | 50 F/10 C | 100 F/37.8 C |
| Water temperature <sup>2</sup> | 45 F/7 C  | 90 F/32.2 C  |

<sup>1</sup>Ambient air temperature is measured at the air-cooled condenser coil inlet.

<sup>2</sup>Ambient water temperature is measured in the ice machine water reservoir.

## Ice capacity test

Ice machine production capacity can only be determined by weighing ice produced in a specific time period.

1. Replace all panels on ice machine.
2. Run ice machine for at least 15 minutes.
3. Weigh and record weight of container used to catch ice.
4. Catch ice for 15 or 20 minutes.
5. Weigh harvested ice and record total weight.
6. Subtract weight of container from total weight.
7. Convert fractions of pounds to decimal equivalents (ex. 6 lbs 8oz = 6.5 lbs).
8. Calculate production using following formula:

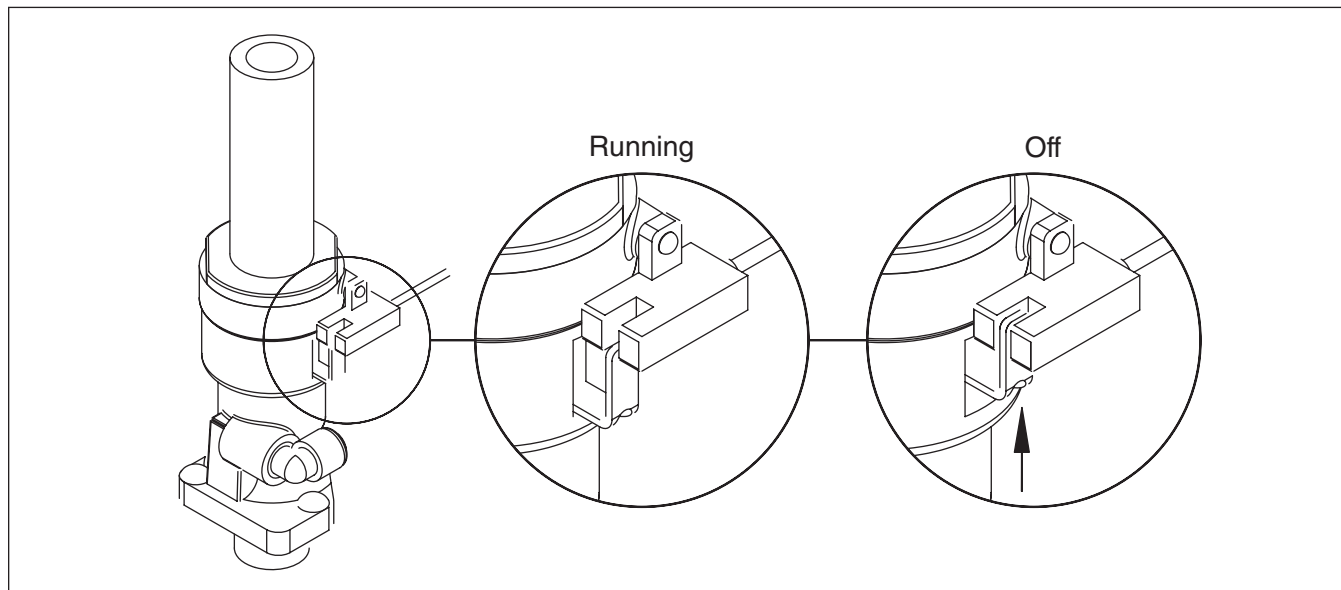
$$\frac{1440 \text{ min.} \times \text{wt. of ice produced}}{\text{Total test time in minutes}} = \text{Production capacity/24 hr.}$$

9. Calculated amount per 24 hours should be checked against rated capacity for same ambient and water temperatures in Ice Production Tables.

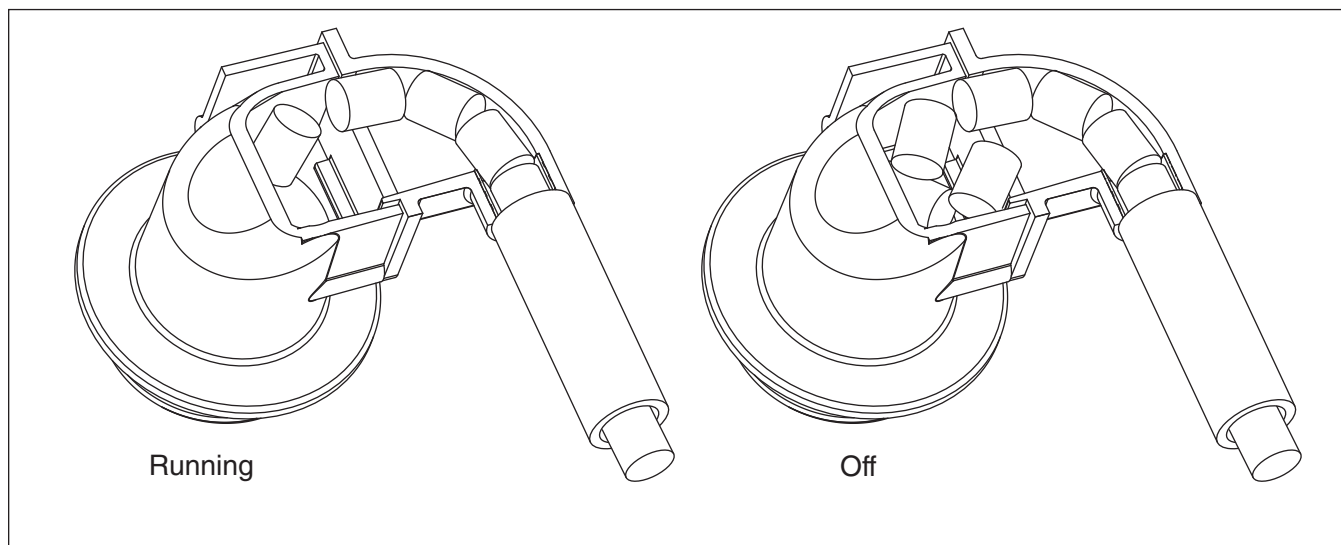
## **“Bin full” detection system**

The Follett Horizon ice machine incorporates a unique “bin full” detection system that consists of the shuttle and actuator. The shuttle incorporates a flag and sensor. Referencing the figure below, the normal running position of the flag is down, out of the sensor. When the bin fills to the top and ice can no longer move through the tube, the machine will force the shuttle flag up into the sensor, shutting the machine off. The shuttle actuator, located above the ice bin allows the ice to curl up within it when the bin is full. In this way, there are no loads generated that would tend to lift off the lid of the bin.

### **Shuttle flag and sensor**



### **Shuttle actuator**



Please see “Service” section for a description of each function.

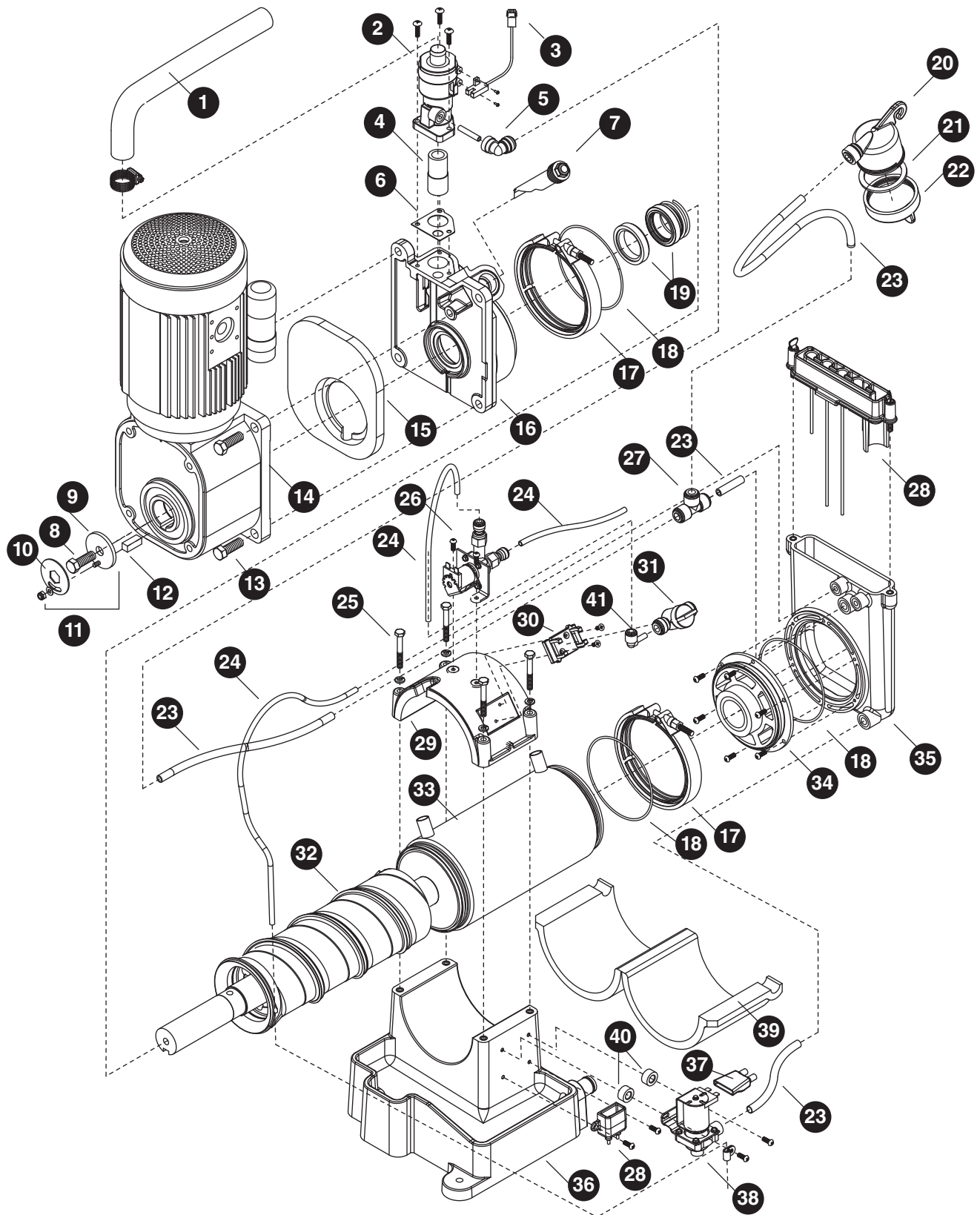
26

| Ice machine disposition                                                                                                                                                                                                                                                                                                                                      | Possible causes                                                                                                                                                                                                                                                                                                          | Corrective action                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legend:    ● ON    ○ OFF    ◐ ON or OFF    ✖ FLASHING                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                      |
| <p>6. Ice machine is not making ice.<br/>HI PRESSURE.</p> <p> CPU    LO WATER    HI WATER    DRAIN CLOG<br/> ✖    ○    ○    ○ </p> <p> HI PRESS    HI AMPS    SERVICE    PURGE    CLEANING    TIME DELAY    REFRIG ON    AUGER ON    LOW BIN    POWER<br/> ●    ○    ○    ○    ○    ○    ○    ○    ○    ○ </p>                                               | <p>1. High ambient temperatures &gt;100 F (38 C).</p> <p>2. Poor ventilation or air recirculation.</p> <p>3. Clogged condenser.</p> <p>4. Fan not working properly. No air flow.</p> <ul style="list-style-type: none"> <li>Blocked fan blades</li> <li>No fan output from PC board</li> <li>Faulty fan motor</li> </ul> | <p>1. Air condition area to below 100 F (38 C).</p> <p>2. Reposition ice machine or properly ventilate. Prevent ice machine exhaust from recirculating.</p> <p>3. Clean condenser grille.</p> <p>4. Correct air flow.</p> <ul style="list-style-type: none"> <li>Remove any blockage from fan blades</li> <li>Replace PC board</li> <li>Replace fan motor</li> </ul> |
| <p>7. Ice machine is not making ice.<br/>Drain clog.</p> <p> CPU    LO WATER    HI WATER    DRAIN CLOG<br/> ✖    ○    ○    ● </p> <p> HI PRESS    HI AMPS    SERVICE    PURGE    CLEANING    TIME DELAY    REFRIG ON    AUGER ON    LOW BIN    POWER<br/> ○    ○    ●    ○    ○    ○    ○    ○    ○    ○ </p>                                                | <p>1. Drain hose kinked or plugged causing water to back up.</p> <p>2. Improper floor drain routing/pitch causing water to back up.</p> <p>3. High TDS levels and leaking drain solenoid may cause an errant drain clog.</p>                                                                                             | <p>1. Remove kink or blockage from drain hose.</p> <p>2. Re-route floor drain.</p> <p>3. Clean area around drain sensor and/or replace Drain solenoid valve.</p>                                                                                                                                                                                                     |
| <p>8. Ice machine is making ice.<br/>Excessive water in bin or coming into bin from transport tube.</p> <p> CPU    LO WATER    HI WATER    DRAIN CLOG<br/> ✖    ○    ○    ○ </p> <p> HI PRESS    HI AMPS    SERVICE    PURGE    CLEANING    TIME DELAY    REFRIG ON    AUGER ON    LOW BIN    POWER<br/> ○    ○    ○    ○    ○    ○    ●    ●    ●    ● </p> | <p>1. Failed water sensors. assumes there is no water when there is water.</p> <p>2. Blocked reservoir vent.</p> <p>3. Defective water feed solenoid valve. Stuck in open position.</p>                                                                                                                                  | <p>1. Clean or replace water probe assembly. Check wiring connections.</p> <p>2. Clean or replace vent tubes.</p> <p>3. Replace water feed solenoid valve.</p>                                                                                                                                                                                                       |
| <p>9. Ice machine is not making ice.<br/>Lo water.</p> <p> CPU    LO WATER    HI WATER    DRAIN CLOG<br/> ✖    ●    ○    ○ </p> <p> HI PRESS    HI AMPS    SERVICE    PURGE    CLEANING    TIME DELAY    REFRIG ON    AUGER ON    LOW BIN    POWER<br/> ○    ○    ○    ○    ○    ○    ○    ○    ○    ● </p>                                                  | <p>1. Water supply is turned off.</p> <p>2. Low water pressure.</p> <p>3. Defective water feed solenoid valve. Stuck in closed position.</p> <p>4. No water feed output from PC board.</p>                                                                                                                               | <p>1. Turn water supply on. If evaporator was completely empty the reset button may have to be pressed to restart the ice machine.</p> <p>2. Ice machine will eventually start when water reaches normal lo level.</p> <p>3. Replace water feed solenoid valve.</p> <p>4. Replace PC board.</p>                                                                      |

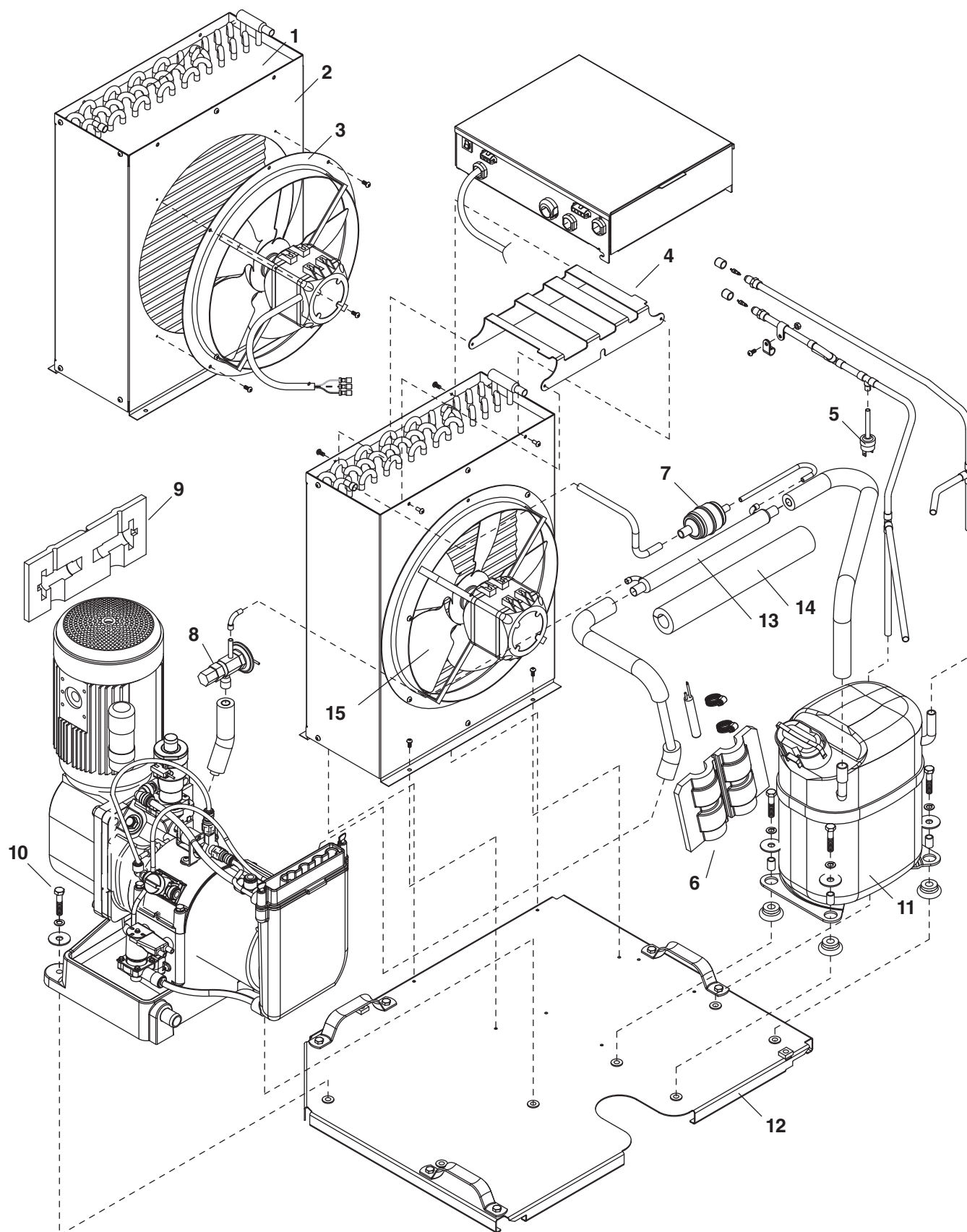
# Replacement parts

## Evaporator assembly

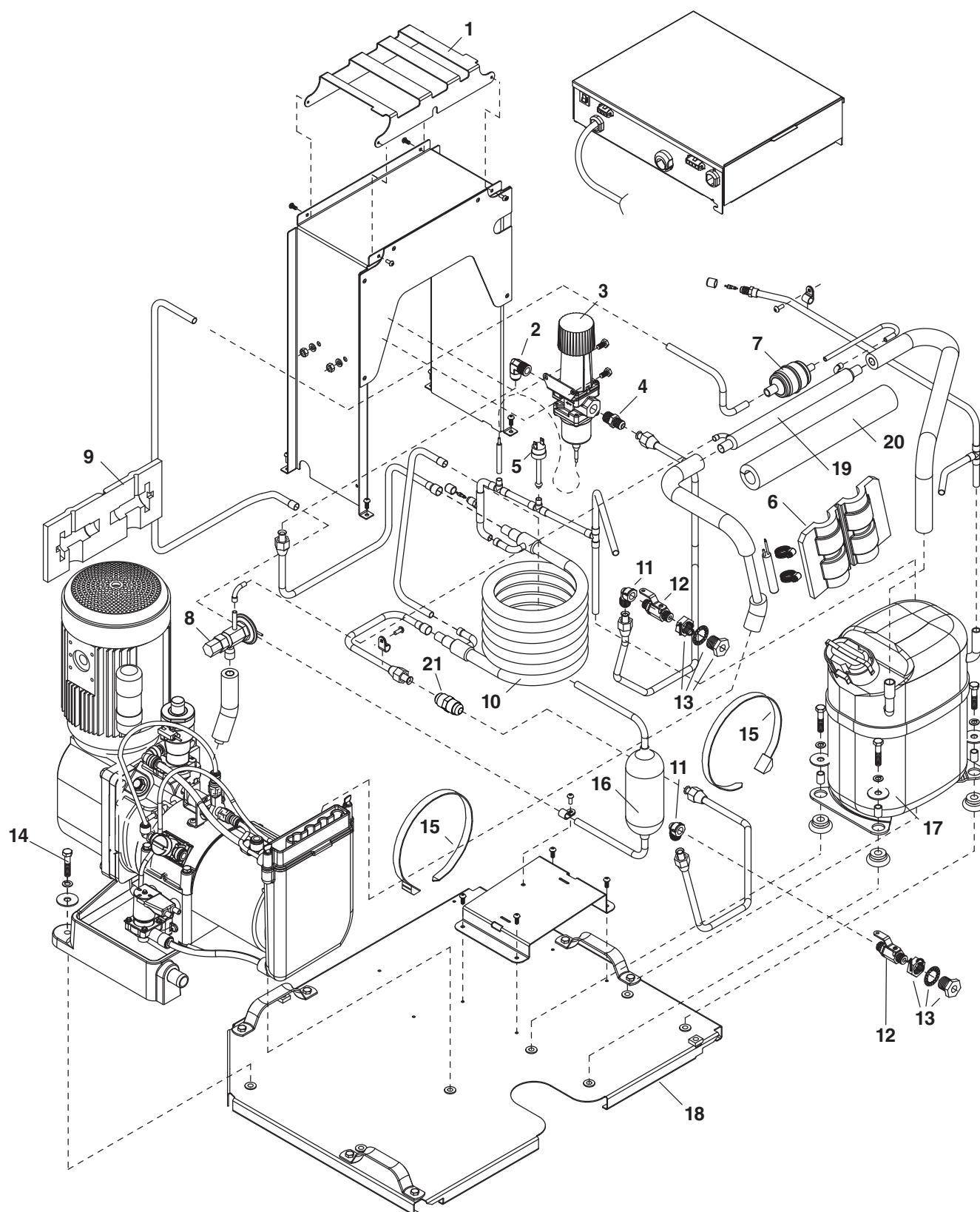
Order parts online  
[www.follettice.com](http://www.follettice.com)



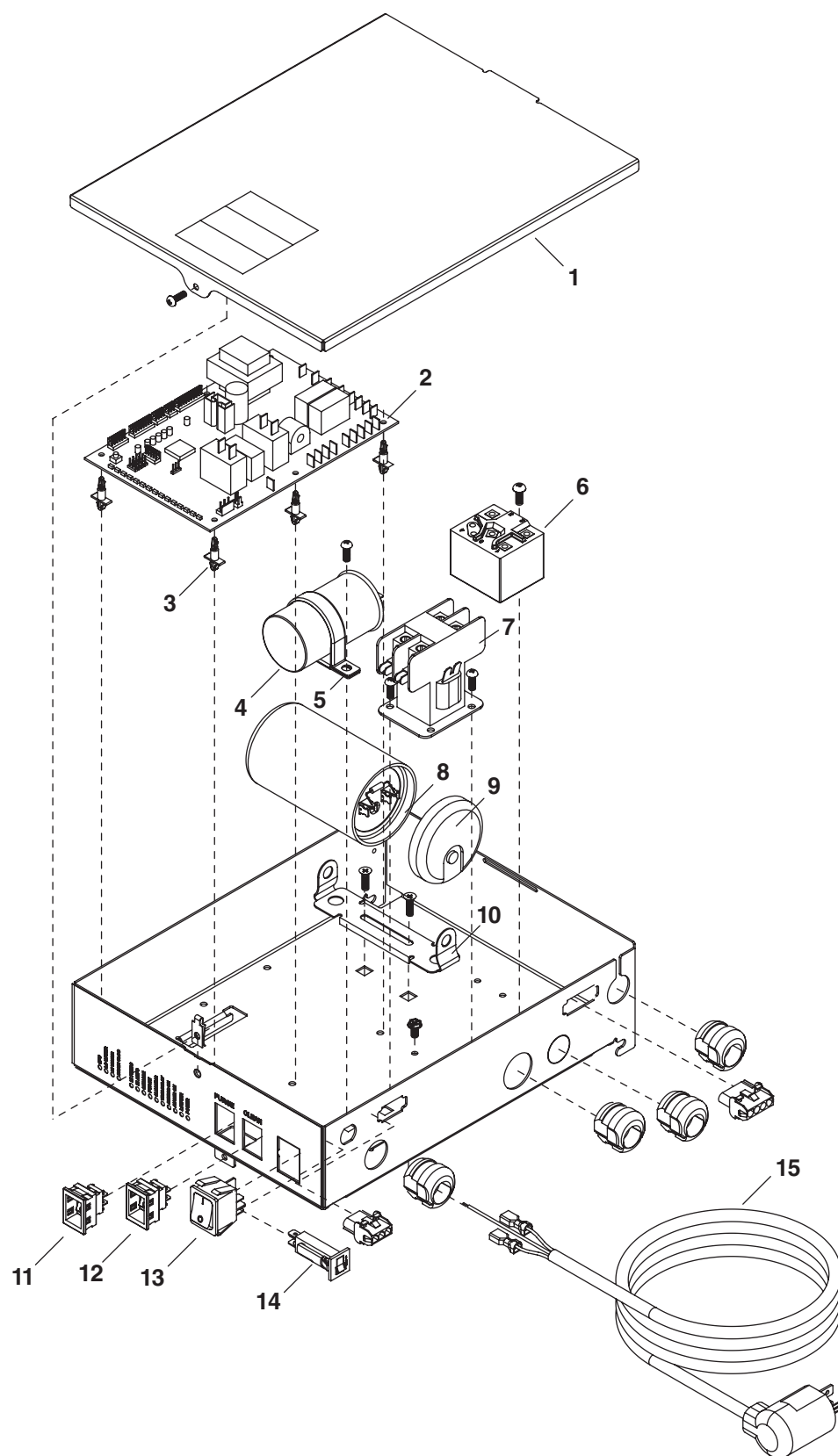
| Reference # | Description                                                    | Part #   |
|-------------|----------------------------------------------------------------|----------|
| 1           | Tube, ice transport, molded                                    | 00175299 |
| 2           | Shuttle assembly (includes gasket and nozzle)                  | 00130815 |
| 3           | Switch, optical                                                | 00130849 |
| 4           | Compression nozzle                                             | 00115774 |
| 5           | Elbow, water                                                   | 00134502 |
| 6           | Gasket, shuttle                                                | 00115600 |
| 7           | Stream divider                                                 | 00142513 |
| 8           | Auger bolt                                                     | 00116988 |
| 9           | Washer                                                         | 00161513 |
| 10          | Retainer, auger bolt                                           | 00161356 |
| 11          | Kit, auger bolt (auger bolt, washer, retainer, nut and washer) | 00161406 |
| 12          | Key                                                            | 00117804 |
| 13          | Bolts, gearmotor mounting (4)                                  | 00130641 |
| 14          | Gearmotor, 240V (includes capacitor)                           | 00130807 |
| 15          | Gasket, gearmotor                                              | 00121632 |
| 16          | Main housing (includes 00112946 & 00116962)                    | 00142539 |
| 17          | Coupling, V-band                                               | 00130708 |
| 18          | O ring                                                         | 00116962 |
| 19          | Seal, auger shaft                                              | 00112946 |
| 20          | Cup, sanitizer                                                 | 00130674 |
| 21          | Gasket, sanitizer                                              | 00124032 |
| 22          | Cap, sanitizer (includes 00124032)                             | 00130880 |
| 23          | Tubing, water, 3/8" OD (per foot)                              | 502719   |
| 24          | Tubing, water, 1/4" OD                                         | 502079   |
| 25          | Hardware, mounting, evaporator cap                             | 00130989 |
| 26          | Solenoid, water feed (240V)                                    | 00130831 |
| 27          | Tee, water                                                     | 00134494 |
| 28          | Sensor assembly, water level and drain clog                    | 00171363 |
| 29          | Cap, evaporator (includes 00125468 & 00130989)                 | 00130740 |
| 30          | Clip, water shut-off valve                                     | 502922   |
| 31          | Valve, shut-off, water                                         | 502921   |
| 32          | Auger (includes 00112946 & 00116962)                           | 00945717 |
| 33          | Evaporator (includes 00112946, (2) 00116962 & 00121616)        | 00130724 |
| 34          | Journal housing and bearing (includes (2) 00116962)            | 00130716 |
| 35          | Reservoir, water                                               | 00130690 |
| 36          | Base, evaporator                                               | 00130732 |
| 37          | Boot, solenoid                                                 | 00160309 |
| 38          | Solenoid, purge (240V)                                         | 00130765 |
| 39          | Insulation, evaporator                                         | 00121616 |
| 40          | Spacers, solenoid                                              | 00160317 |
| 41          | Elbow, 1/4" tube x 3/8" stem                                   | 00988030 |
| Not shown   | Insulation, evaporator cap                                     | 00125468 |
| Not shown   | Condensate pan                                                 | 00161612 |
| Not shown   | Shuttle assembly, Micro Chewblet (includes gasket and nozzle)  | 00985028 |
| Not shown   | Pan, gearbox condensate (includes silicone)                    | 01051796 |



| Reference # | Description                                                    | Part #   |
|-------------|----------------------------------------------------------------|----------|
| 1           | Condenser (includes 00130922)                                  | 00130914 |
| 2           | Shroud, condenser                                              | 00130922 |
| 3           | Fan motor assembly                                             | 00130930 |
| 4           | Electrical box support                                         | 00153635 |
| 5           | Cut-out, high pressure safety                                  | 00117077 |
| 6           | Insulation, bulb, TXV                                          | 00106534 |
| 7           | Drier                                                          | 502724   |
| 8           | Valve, expansion, thermal (includes 502830 and 00106534)       | 00130997 |
| 9           | Insulation, TXV                                                | 502830   |
| 10          | Hardware, evaporator mounting base (set of four)               | 00130971 |
| 11          | Compressor (includes start and run capacitors, relay and drier | 00969063 |
| 12          | Base, ice machine                                              | 00130856 |
| 13          | Heat exchanger (includes 00172361)                             | 00172353 |
| 14          | Heat exchanger insulation                                      | 00172361 |
| 15          | Fan blade                                                      | 00170290 |

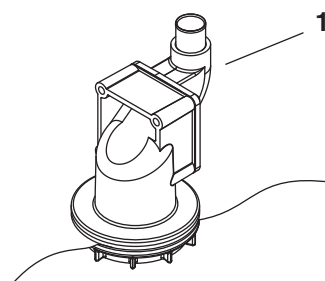
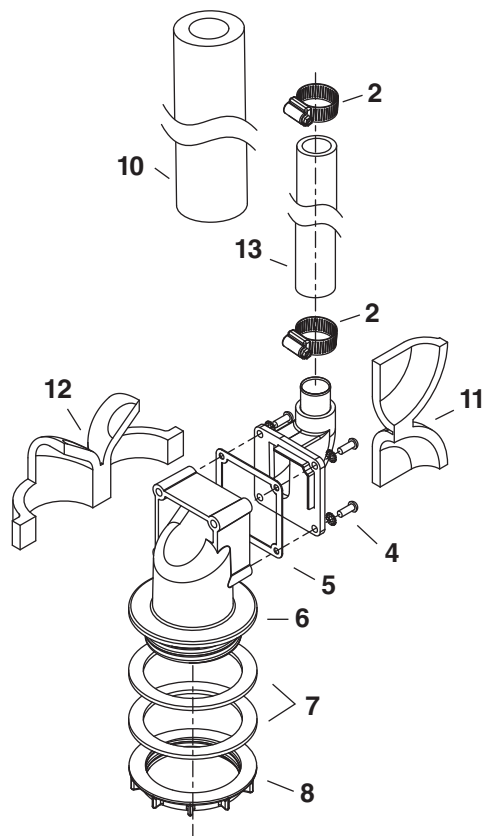


| Reference # | Description                                                    | Part #   |
|-------------|----------------------------------------------------------------|----------|
| 1           | Electrical box support                                         | 00153635 |
| 2           | Elbow, water                                                   | 00129486 |
| 3           | Valve, water regulating                                        | 00131052 |
| 4           | Union, water                                                   | 202148   |
| 5           | Cut-out, high pressure safety                                  | 00117077 |
| 6           | Insulation, bulb, TXV                                          | 00106534 |
| 7           | Drier                                                          | 502724   |
| 8           | Valve, expansion, thermal (includes 502830 and 00106534)       | 00130997 |
| 9           | Insulation, TXV                                                | 502830   |
| 10          | Condenser, w/c                                                 | 00117234 |
| 11          | Elbow, water, 90°                                              | 00129478 |
| 12          | Valve, shut-off, water                                         | 502222   |
| 13          | Coupling                                                       | 206411   |
| 14          | Hardware, evaporator mounting base                             | 00130971 |
| 15          | Ty-rap                                                         | 204584   |
| 16          | Receiver                                                       | 00123109 |
| 17          | Compressor (includes start and run capacitors, relay and drier | 00969063 |
| 18          | Base, ice machine                                              | 00130856 |
| 19          | Heat exchanger (includes 00172361)                             | 00172353 |
| 20          | Heat exchanger insulation                                      | 00172361 |
| 21          | Coupling, 3/8" double flare                                    | 01039494 |

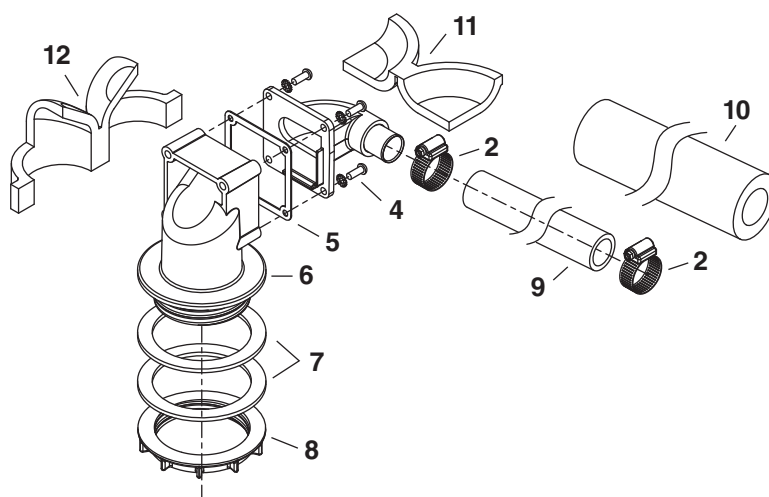
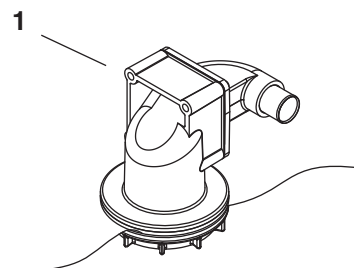


| Reference # | Description                                        | Part #   |
|-------------|----------------------------------------------------|----------|
| 1           | Cover, electrical box, air/water-cooled            | 00130872 |
| 2           | Board, control circuit, 240V (includes 00130906)   | 00132902 |
| 3           | Stand off's (set of 6)                             | 00130906 |
| 4           | Capacitor, compressor run                          | 00121814 |
| 5           | Clamp, run capacitor                               | 00133603 |
| 6           | Relay, compressor starting (includes wire harness) | 01157123 |
| 7           | Contactactor                                       | 00917195 |
| 8           | Capacitor, compressor starting                     | 00121798 |
| 9           | Cap, capacitor                                     | 00133587 |
| 10          | Bracket, capacitor                                 | 207625   |
| 11          | Switch, evaporator purge                           | 00114371 |
| 12          | Switch, evaporator clean                           | 00117036 |
| 13          | Switch, ice machine power                          | 208867   |
| 14          | Circuit breaker, 4 amp                             | 00126912 |
| 15          | Cord, power, 240V                                  | 00192096 |

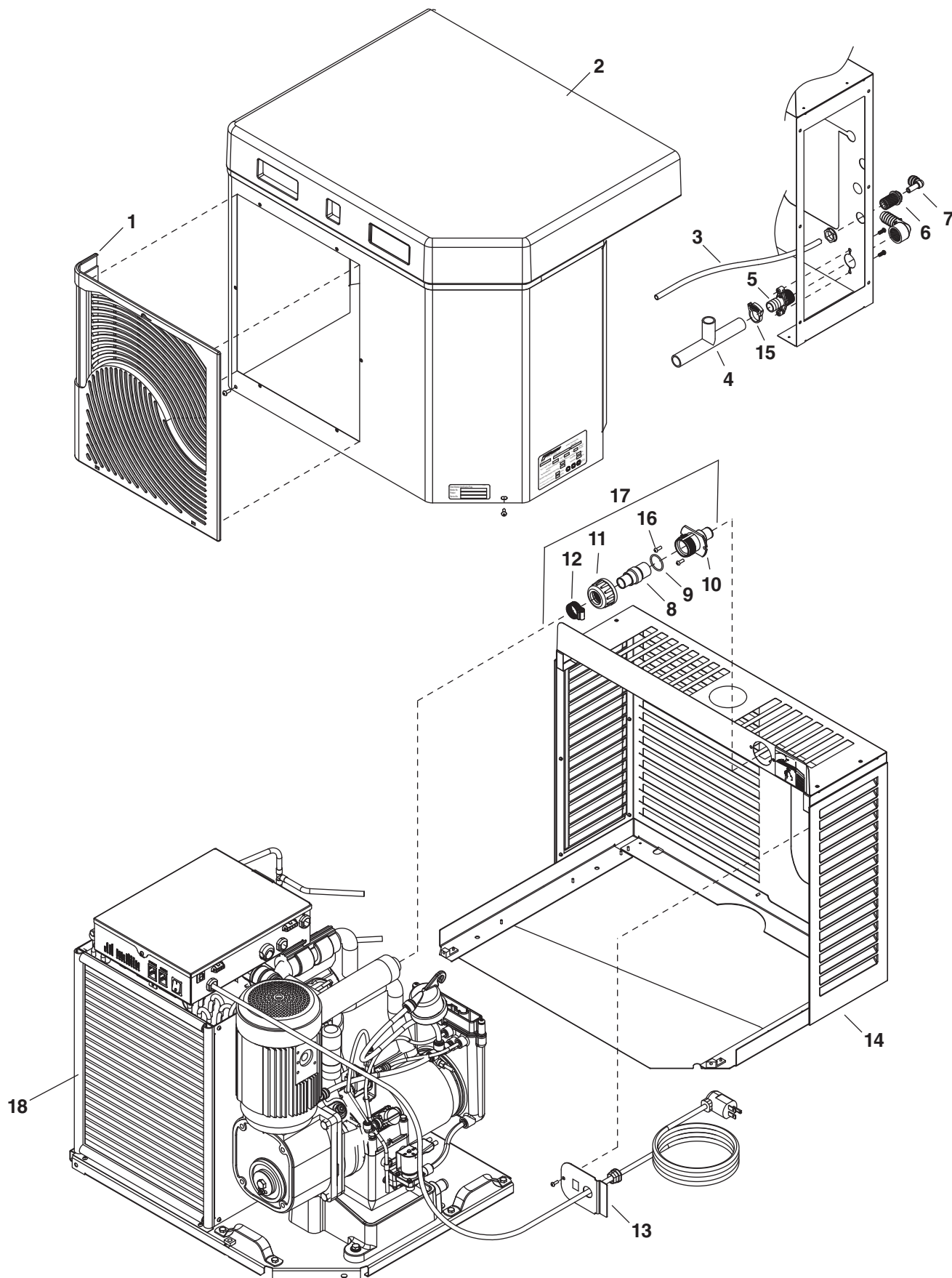
Top mount configuration



RIDE model configuration



| Reference # | Description                                                                                                              | Part #   |
|-------------|--------------------------------------------------------------------------------------------------------------------------|----------|
| 1           | Shuttle actuator                                                                                                         | 00171322 |
| 2           | Clamp                                                                                                                    | 500377   |
| 3           | Actuator elbow (includes 00167122 and 209100)                                                                            | 00171264 |
| 4           | Screws                                                                                                                   | 209100   |
| 5           | Gasket                                                                                                                   | 00167122 |
| 6           | Actuator body                                                                                                            | 00171272 |
| 7           | Gasket, coupling                                                                                                         | 00126532 |
| 8           | Ring, locking (includes 00126532)                                                                                        | 00171371 |
| 9           | Ice transport tube, 10' (3m)                                                                                             | 00171280 |
| 9           | Ice transport tube, 20' (6m)                                                                                             | 00171298 |
| 10          | Insulation, transport tube                                                                                               | 501176   |
| Not shown   | Insulated polywire ice transport tube, per foot                                                                          | 00174896 |
| 11          | Insulation, elbow                                                                                                        | 00168922 |
| 12          | Insulation, actuator                                                                                                     | 00168930 |
| 13          | Ice transport tube, top mount, 30" (762mm)                                                                               | 00171306 |
| Not shown   | Integration kit, top mount                                                                                               | 00171389 |
| Not shown   | Integration kit, RIDE model (includes 10' (3m) of tube and insulation)                                                   | 00171397 |
| Not shown   | Extension-fill tube, 9"                                                                                                  | 00135723 |
| Not shown   | Extension-fill tube, 4"                                                                                                  | 00153684 |
| Not shown   | Diverter plate (single agitator Cornelius dispensers and left-hand dispense chute on dual-agitator Cornelius dispensers) | 307277   |
| Not shown   | Diverter plate (right-hand dispense chute on dual-agitator dispensers)                                                   | 00996207 |
| Not shown   | Follett SafeCLEAN ice machine cleaner (case of 24 x 7oz packets)                                                         | 00132001 |
| Not shown   | Sani-Sponge kit                                                                                                          | 00132068 |



| <b>Reference #</b> | <b>Description</b>                                                                  | <b>Part #</b> |
|--------------------|-------------------------------------------------------------------------------------|---------------|
| 1                  | Grille, intake                                                                      | 00122846      |
| 2                  | Front cover, air- & water-cooled (includes 00122846)                                | 00130625      |
| 3                  | Tubing, water, 1/4" OD                                                              | 502719        |
| 4                  | Tubing, drain                                                                       | 00144923      |
| 5                  | Fitting, drain                                                                      | 00109728      |
| 6                  | Fitting, water inlet                                                                | 502924        |
| 7                  | Elbow, water inlet                                                                  | 502925        |
| 8                  | Coupling (includes 00144675)                                                        | 00171207      |
| 9                  | O ring                                                                              | 00144675      |
| 10                 | Bulkhead fitting                                                                    | 00171215      |
| 11                 | Nut                                                                                 | 00902338      |
| 12                 | Hose clamp                                                                          | 500377        |
| 13                 | Plate, strain relief                                                                | 00192070      |
| 14                 | Louvered docking assembly<br>(includes reference #'s 3, 4, 5, 6, 7, 10, 13, 15, 16) | 00130658      |
| 15                 | Clamp, drain line                                                                   | 00114520      |
| 16                 | Screws                                                                              | 208568        |
| 17                 | Bulkhead connector kit                                                              | 00171223      |
| 18                 | Gasket, condenser                                                                   | 00135574      |
| Not Shown          | Louver, intake/exhaust (13.75"x17.75")                                              | 00128066      |
| Not Shown          | Gasket, air intake                                                                  | 00913582      |

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