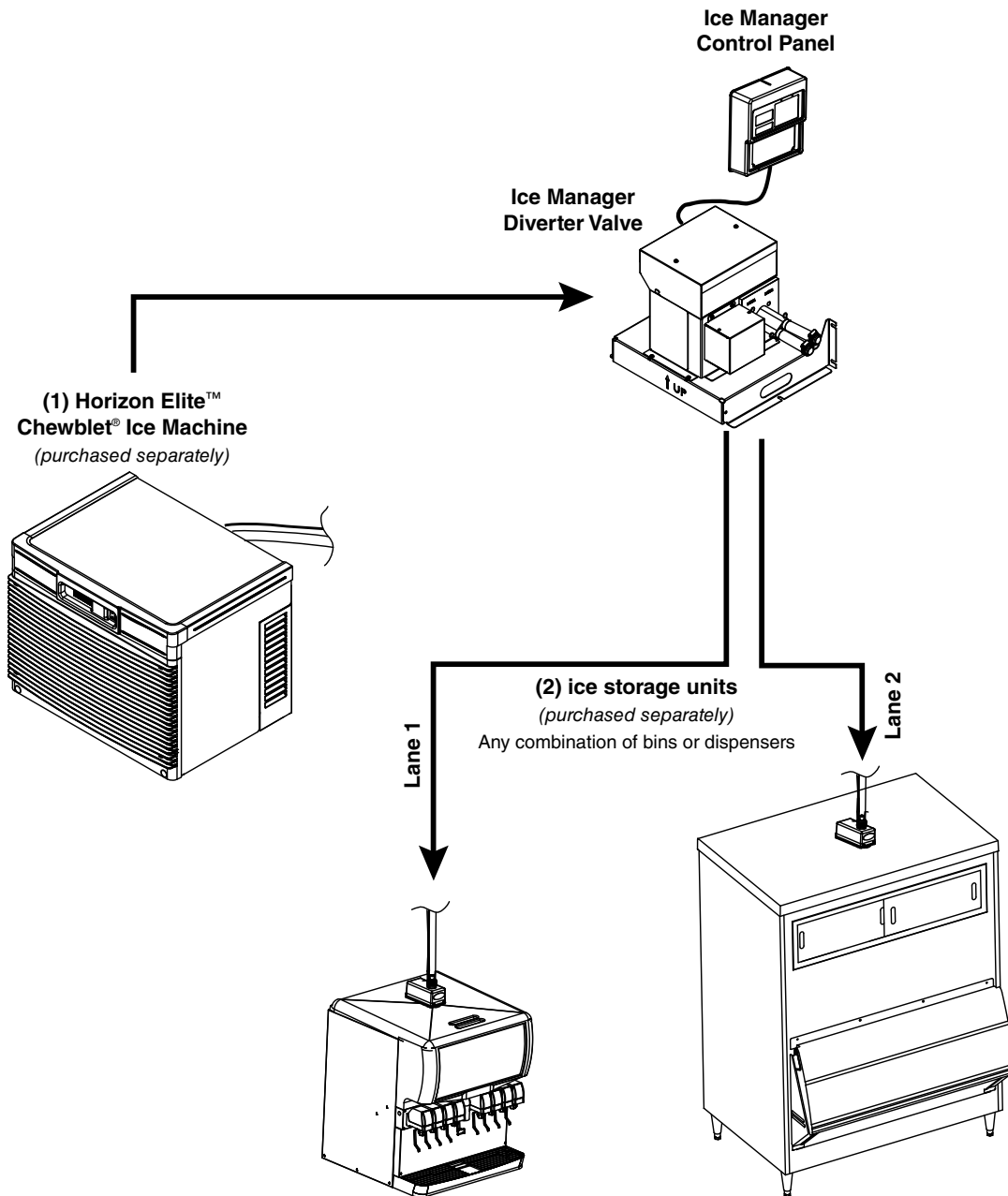


Ice Manager™ Diverter Valve System IMDV-2CM

Installation, Operation and
Service Manual



Special tools required

3.50" (88.9 mm) hole saw: Required for ice and beverage dispensers manufactured by others or existing bins

2.50" (63.5 mm) hole saw: Required for drop-in dispensers

1.75" (44.5 mm) hole saw: Required for drop-in dispensers

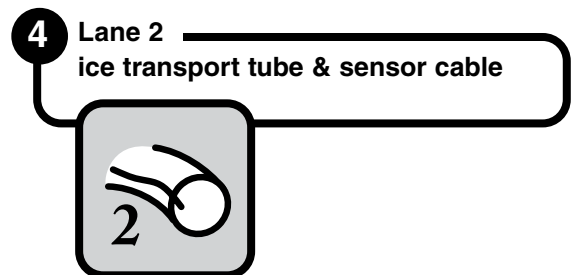
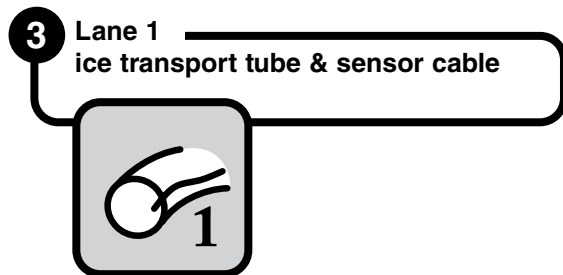
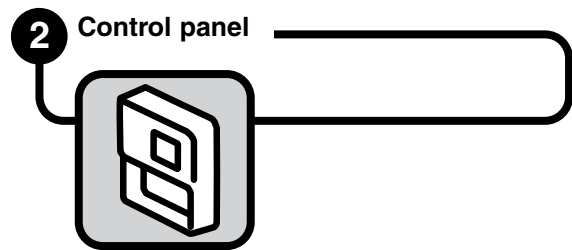
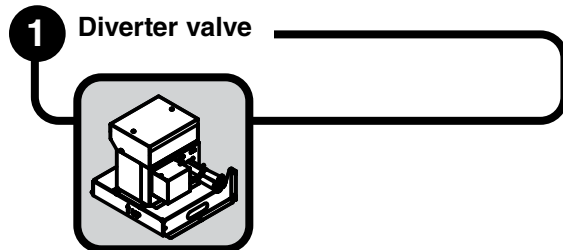
Ice Manager diverter valve system

The Ice Manager diverter valve system delivers ice to two ice storage units enabling a single ice machine to meet demand for ice at two locations. The system's sensors monitor ice levels in each storage unit and automatically switch ice delivery to the appropriate location.

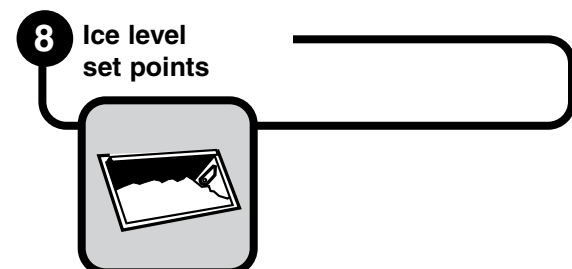
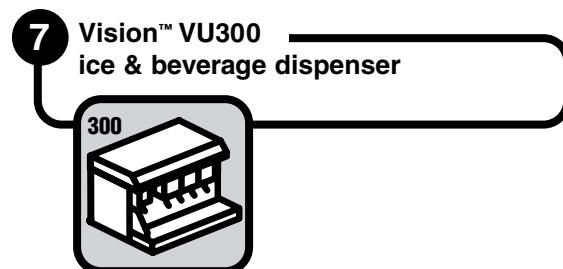
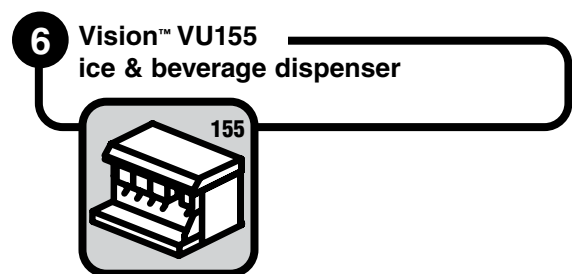
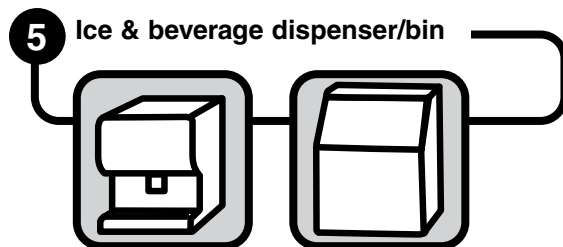
Carefully review system overview (pages 4 & 5) and be sure that you have a copy of the Follett approved site survey before proceeding with installation steps.

After thorough review of the site survey, install Horizon ice machine and dispenser/bin(s) using the installation guide provided with each unit.

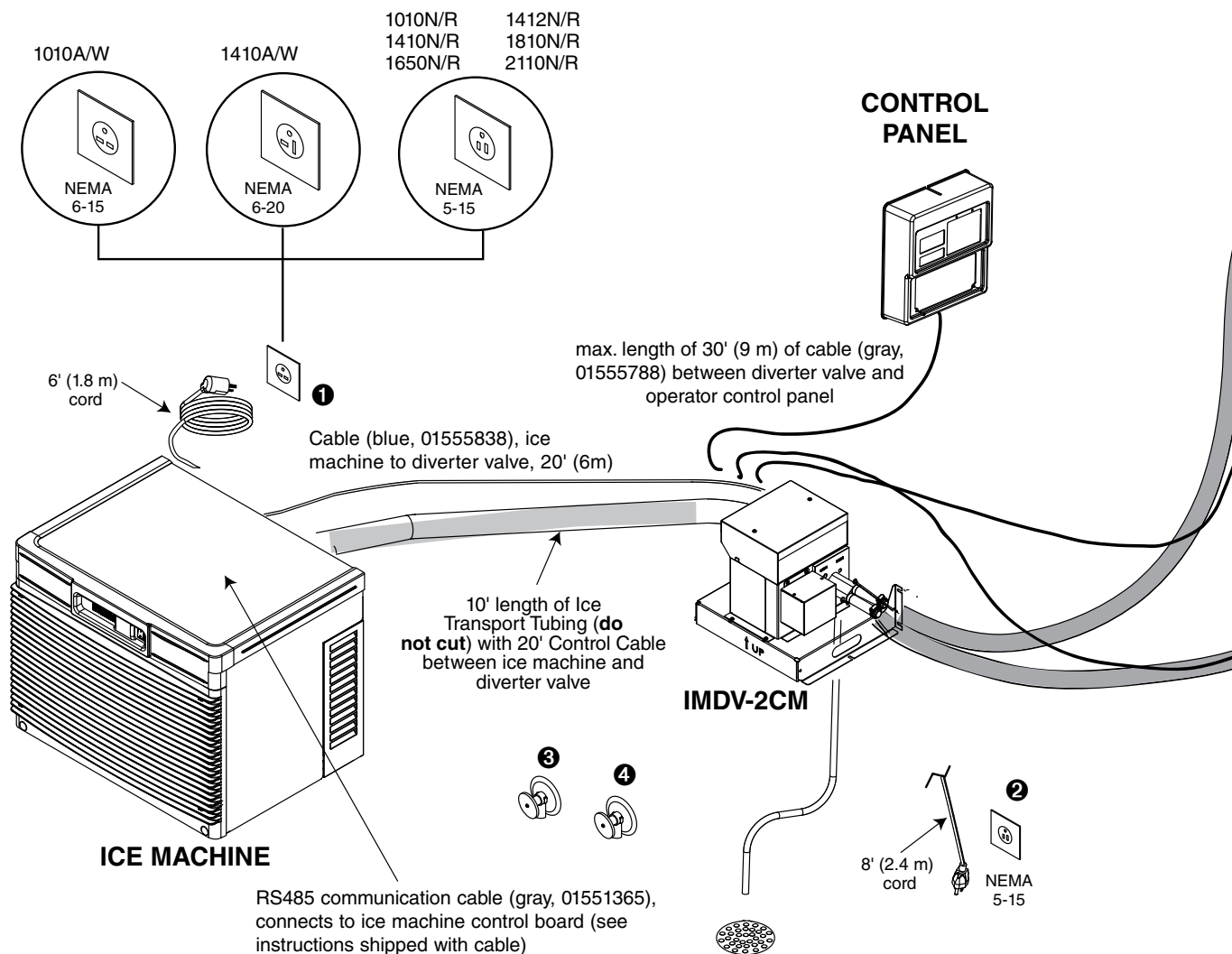
Read and complete installation sections 1 through 4.



Read and complete installation sections below that apply to your specific application.



Ice Manager - Site preparation and system overview



Electrical - ice machine ① requires dedicated circuit

- 1010 (A/W) 208-230/60/1, 11A, max. ice machine fuse 15A
- 1410 (A/W) 208-230/60/1, -5%/+10% under peak load. 16A, max. ice machine fuse 20A
- 1010/1410/1810/2110 (R/N)
Evap. 115/60/1, 6A; max. fuse 15A
- 1650 (R/N)
Evap. 115/60/1, 6A; max. fuse 15A

Condenser (R models only)

	1010R		1410R		1412R	1810R		2110R	
	Single	3-Phase	Single	3-Phase	3-Phase	Single	3-Phase	Single	3-Phase
Electrical	208-230V, 60 Hz								
Max Circuit HVACR Breaker Size	15A	15A	30A	25A	20A	45A	25A	45A	30A
Min Circuit Ampacity	10.7A	9.9A	19.3A	14.2A	12A	26.2A	15.7A	27.1A	19.9A

Electrical - Ice Manager ②

- 115/60/1, 1.5 amps; max. fuse 15 amps

Drains

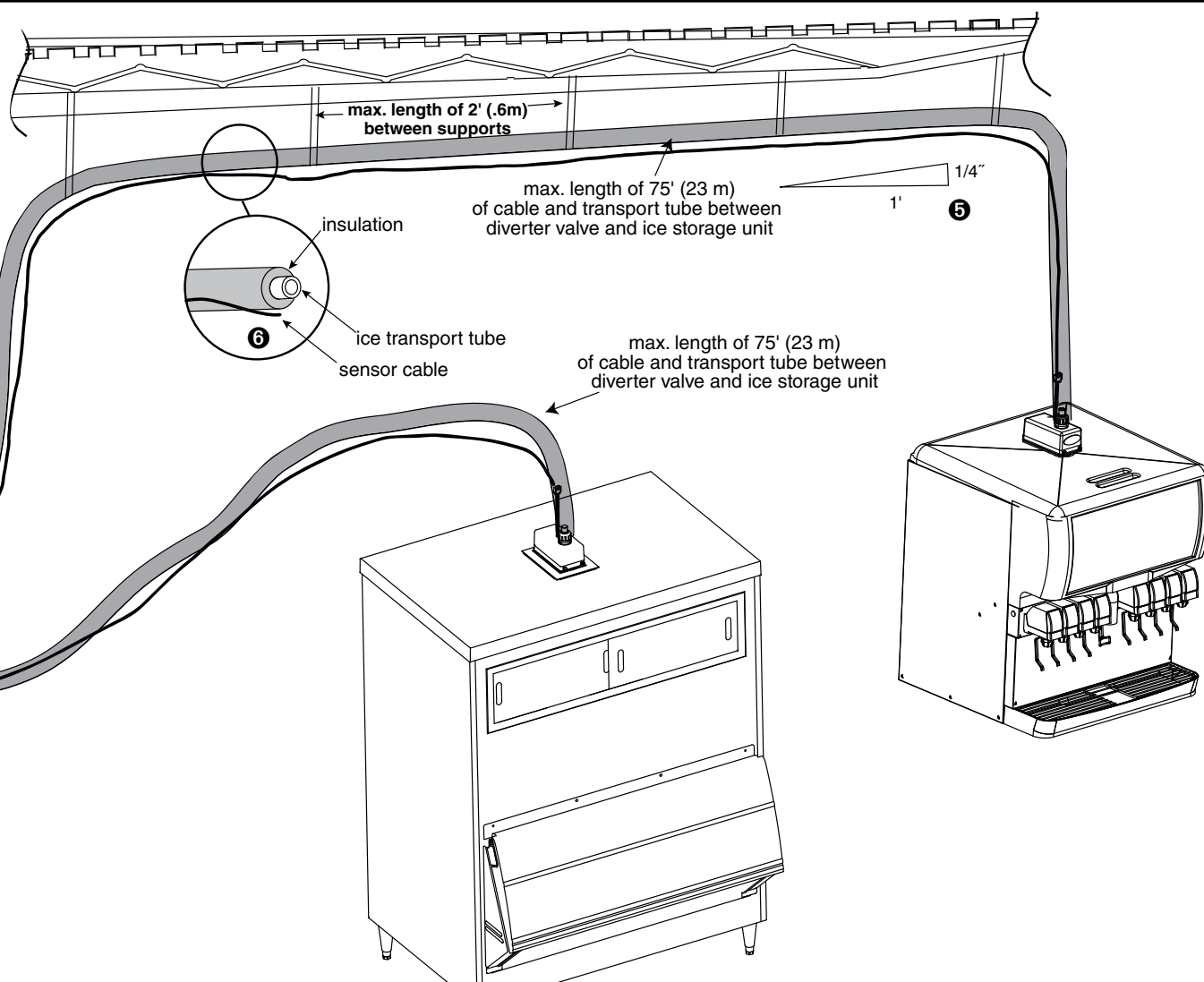
- Ice machine - 3/4" MPT - 3/4" FPT x barb, elbow and silicone drain hose provided, no vent required
- Ice Manager - 3/8" (9.5mm) barb - 15 ft. (4.6m) 3/8" (9.5mm) I.D. tubing provided

Potable water supply - ice machine ③

- 10 - 70 psi (69 - 483kpa)
- 45 F to 90 F (7 C to 32 C)
- Follett recommends the use of an in-line water filter (item# 00130286)

Condenser water supply for water-cooled systems ④

- 10 psi min.; 150 psi max. (69kpa min.; 1034kpa max.)
- 45 F to 90 F (7 C to 32 C)
- 1.5 gallons per minute (5.68 liters per minute)



Temperature and humidity requirements

- All components, including ice transport tube, must be operated in ambient temperatures between 40 F and 120 F (5 C and 49 C)
- Relative humidity not to exceed 55%

Ice transport tube requirements

- Maximum vertical rise of 10' (3m) from ice machine to highest elevation of tube
- Use one continuous piece of ice transport tube. Do not splice.
- Horizontal run should be pitched so that melt water drains back to ice machine. Ice transport tube run must have at least 1/4" per foot pitch (6.4mm/0.3m) ⑤
- Secure ice transport tube as needed to eliminate dips and traps - PVC chase support is recommended
- Insulate all ice transport tube runs, making sure that sensor cable runs outside of the insulation ⑥

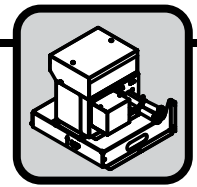
Ice transport tube and cable distance requirements

- Ice machine to diverter valve - *continuous* run of 10' (3m) (do not cut)
- Diverter valve cable to operator control panel - length of 30' (9 m)
- Diverter valve to ice receptacle - maximum run of 75' (23 m)
- Distance between ice transport tube supports - maximum of 2' (0.6m) - PVC chase support is recommended

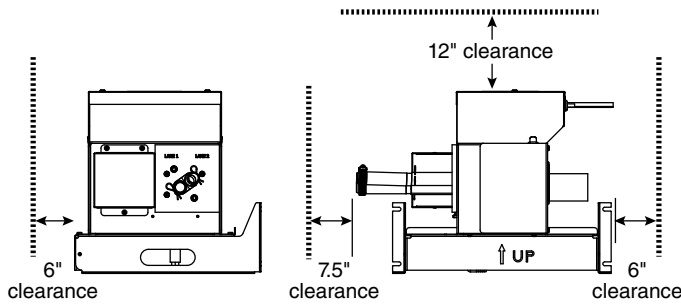
Operating temperature requirements

- Ice Manager diverter valve system components, including ice transport tube must be operated in ambient temperatures between 40 F and 120 F (4.5 C and 49 C)

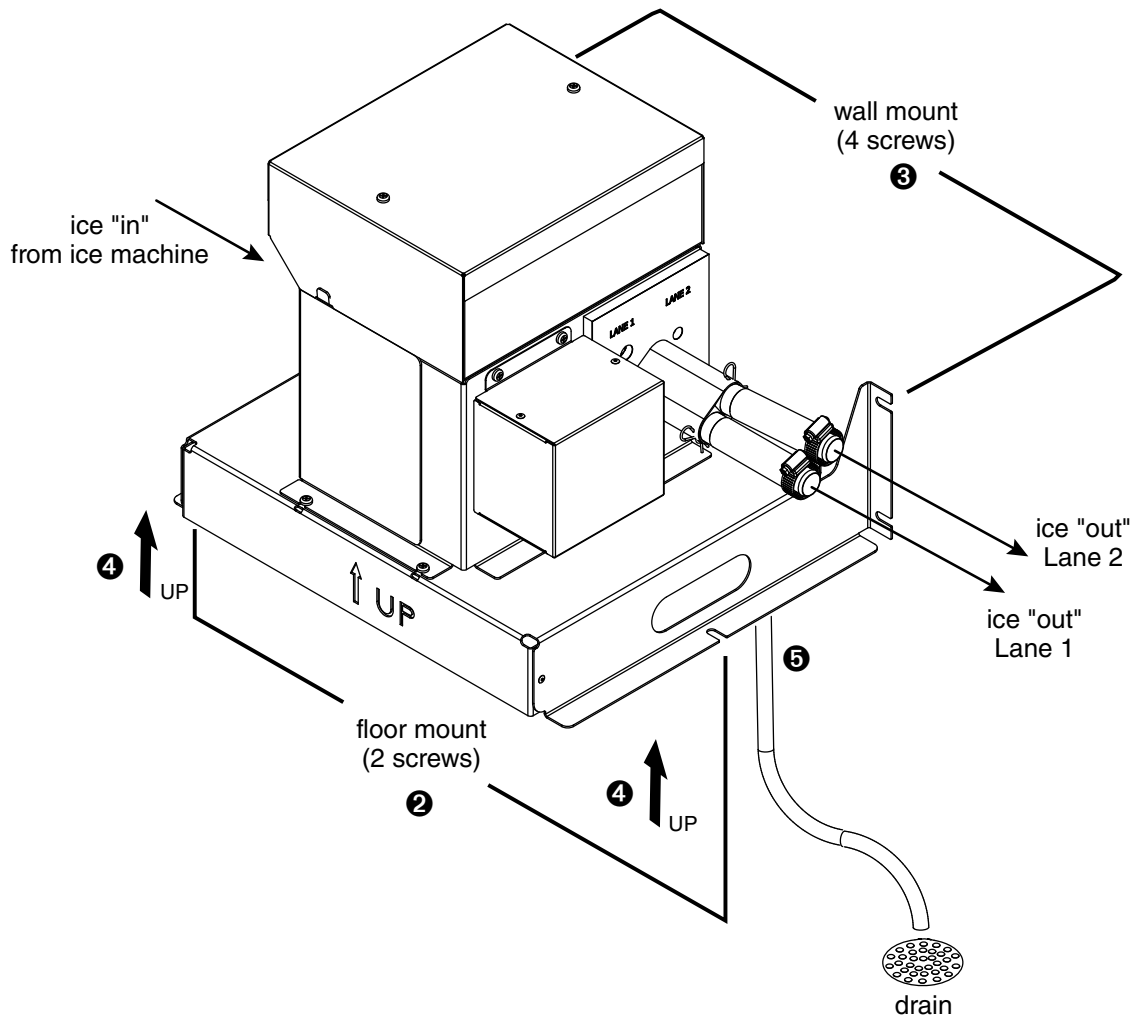
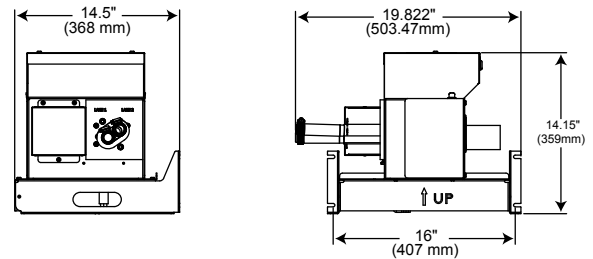
1 Diverter valve



Diverter Valve Required Clearances ①



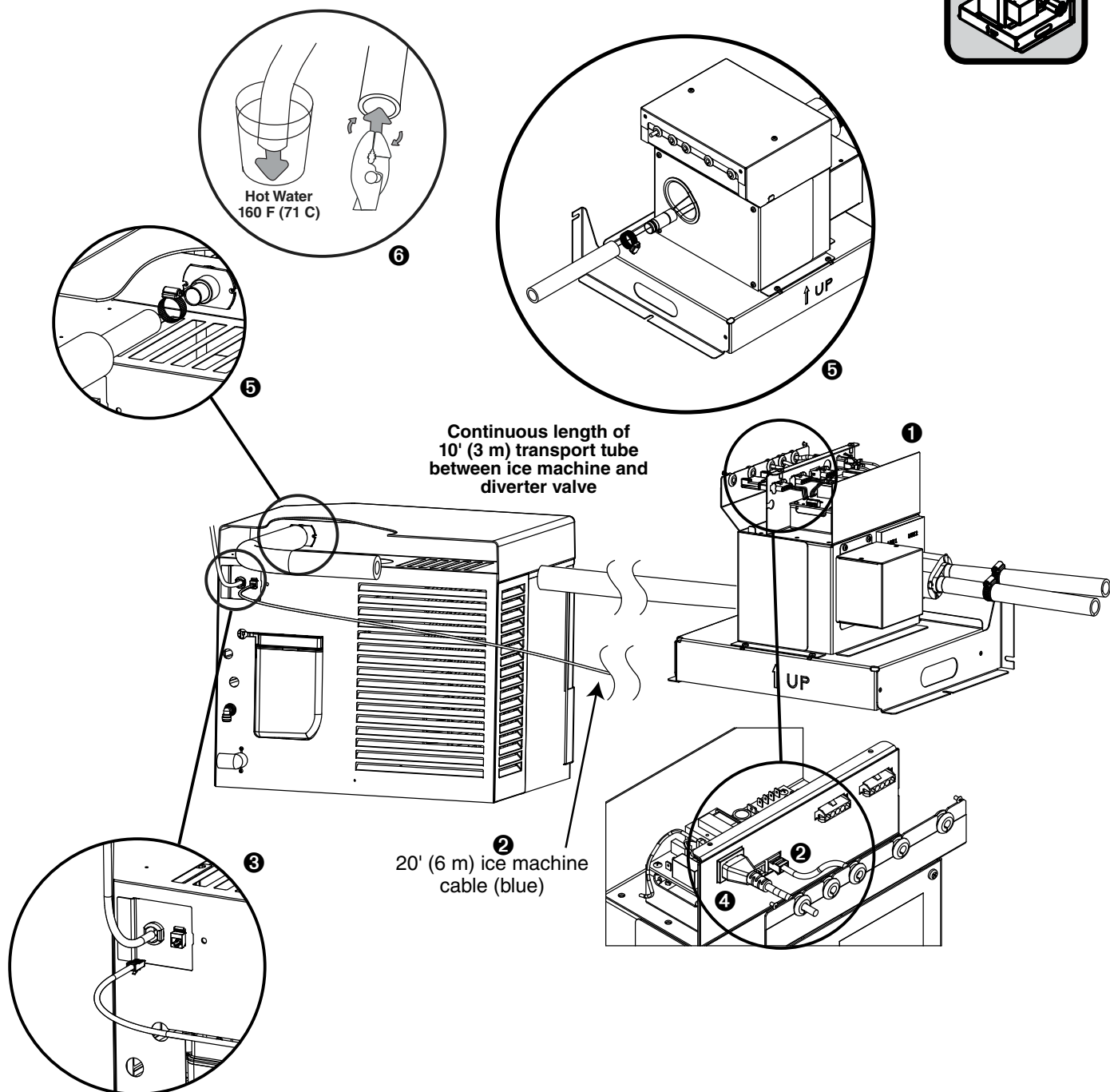
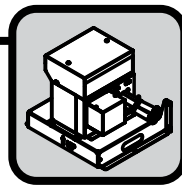
Diverter Valve Dimensions



Mount diverter valve

- Minimum side clearances of 6" (153mm) required ①
- Minimum top clearance of 12" (305mm) required ①
- Diverter valve bracket may be mounted on the floor ② or on the wall ③ using (4) anchors capable of supporting min. 40 lb (18kg)
- Diverter valve unit MUST face up ④
- Drain tube connects to fitting on underside of diverter valve ⑤

1 Diverter valve

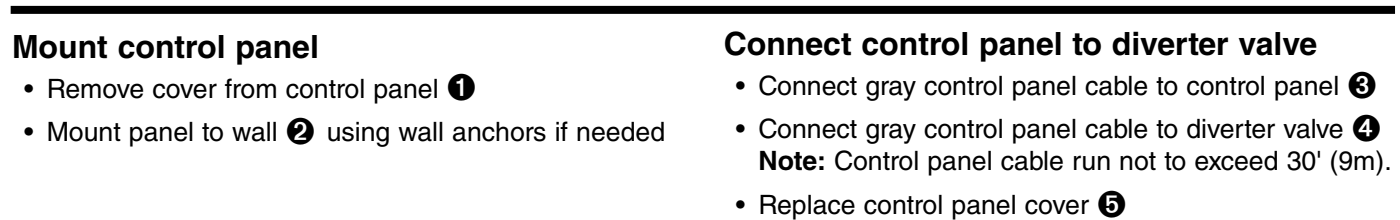


Connect diverter valve to ice machine†

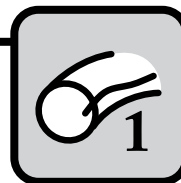
- Remove connection cover from diverter valve ①
- Connect blue ice machine cable to diverter valve ②
Note: Control cable run not to exceed 10' (3m).
- Connect blue ice machine control cable to ice machine ③
- Connect power cord to diverter valve ④
- Run insulated ice transport tube to diverter valve ⑤ using guidelines in "Site Preparation - Overview" on

pages 4 & 5. Heat end of transport tube in cup of 160 F (71 C) hot water to soften and spread with pliers ⑥ before making connection to ease assembly and prevent stainless coupler edge from cutting inner wall of tube.
Note: MINIMUM length of 10' (3 m) of transport tube between ice machine and diverter valve.

† If Horizon ice machine is an existing unit, install applicable retrofit kit before completing this portion of installation (retrofit instructions are included with retrofit kit).

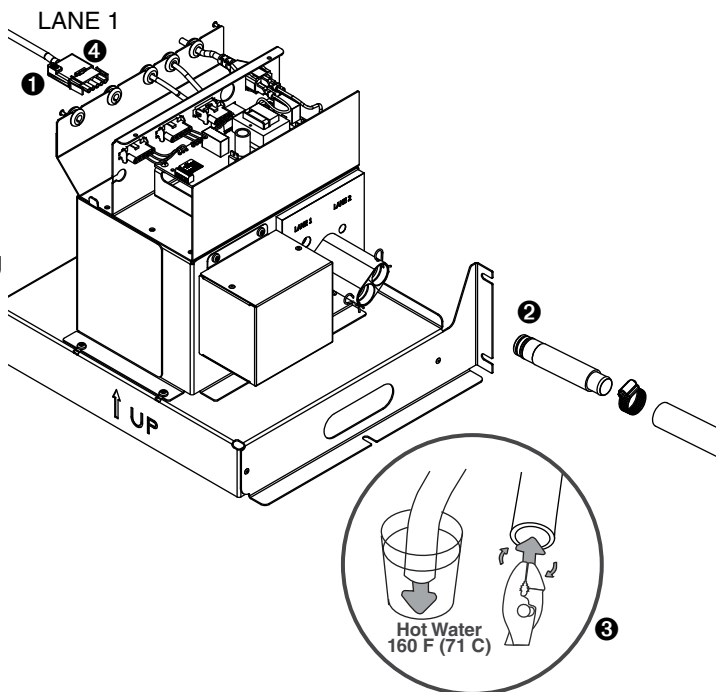


3 Lane 1

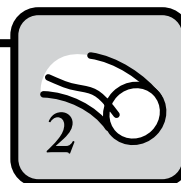


Ice transport tube and sensor cable

- Use the site survey to identify lane 1 dispenser or bin
- Measure ice transport tube run and sensor cable run from lane 1 dispenser/bin to diverter valve
- Verify that run lengths comply with requirements on pages 4 & 5
- Insulate ice transport tube
- Secure insulated ice transport tube and sensor cable as needed from dispenser/bin to diverter valve, being certain to prevent dips and traps from forming. See guidelines on pages 4 & 5.
- Pitch tube at least 1/4" per foot (6.4mm/0.3m). Tube must drain away from bin.
- Connect lane 1 sensor cable ❶ and insulated ice transport tube ❷ to diverter valve
- Heat end of transport tube in cup of 160 F (71 C) hot water to soften and spread with pliers ❸ before making connection to ease assembly
- Visually inspect inside of plastic coupling for burrs and remove as needed
- Tighten hose clamp
- Attach **Lane 1** identification label to Lane 1 sensor cable ❹

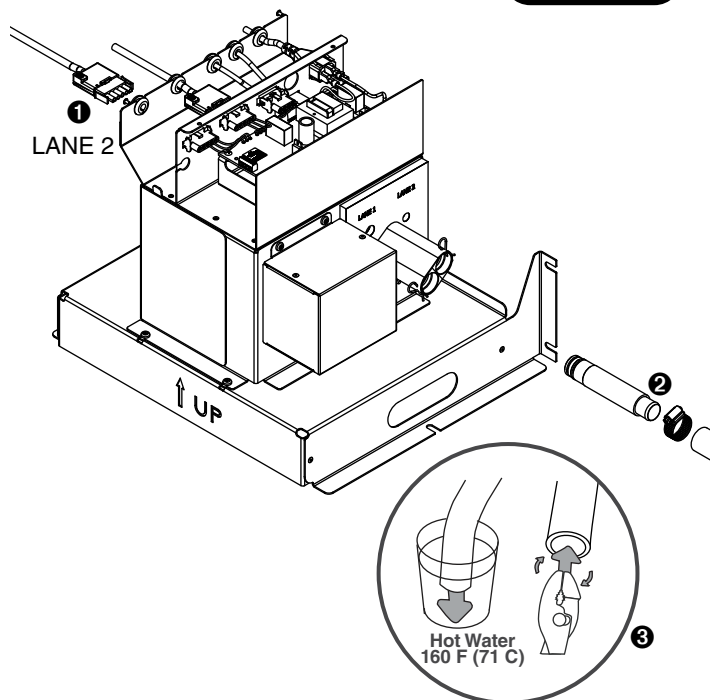


4 Lane 2

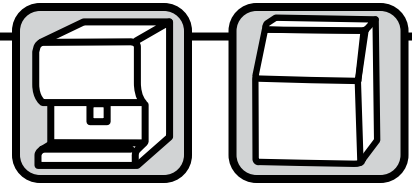


Ice transport tube and sensor cable

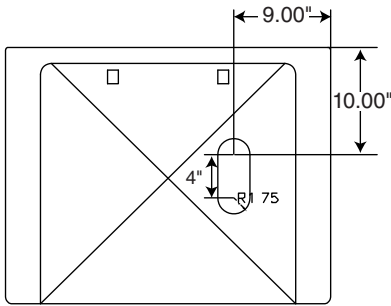
- Use the site survey to identify lane 2 dispenser or bin
- Measure ice transport tube run and sensor cable run from lane 2 dispenser/bin to diverter valve
- Verify that run lengths comply with requirements on pages 4 & 5
- Insulate ice transport tube
- Secure insulated ice transport tube and sensor cable as needed from dispenser/bin to diverter valve, being certain to prevent dips and traps from forming
- Pitch tube at least 1/4" per foot (6.4mm/0.3m). Tube must drain away from bin.
- Connect lane 2 sensor cable ❶ and insulated ice transport tube ❷ to diverter valve
- Heat end of transport tube in cup of 160 F (71 C) hot water to soften and spread with pliers ❸ before making connection to ease assembly
- Visually inspect inside of plastic coupling for burrs and remove as needed
- Tighten hose clamp



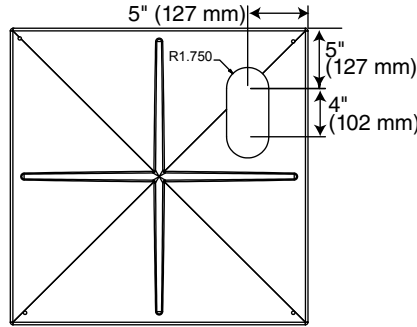
5 Ice & beverage dispenser/bin



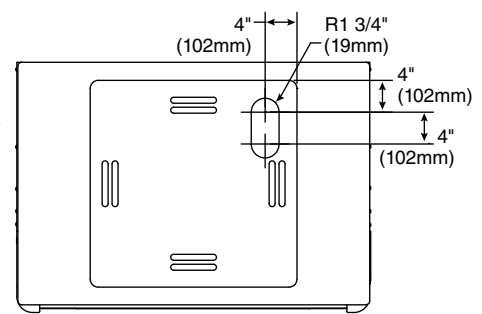
30" Lancer Sensation and Touchpoint w/IMDV



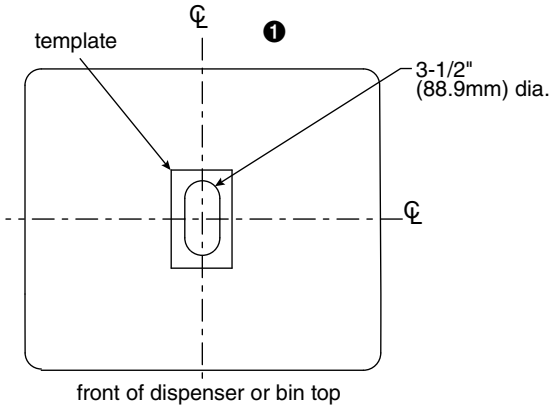
110CM Symphony Plus w/IMDV



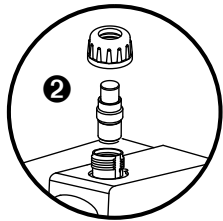
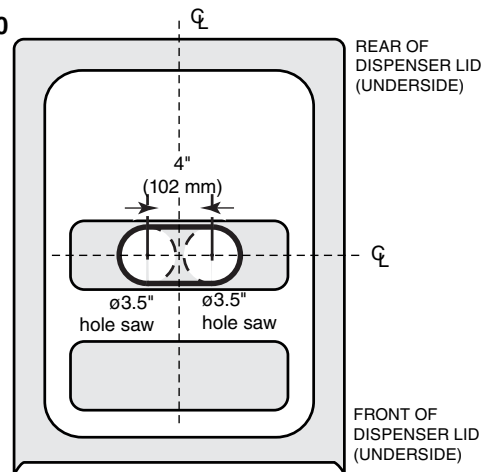
ED300 dispenser only



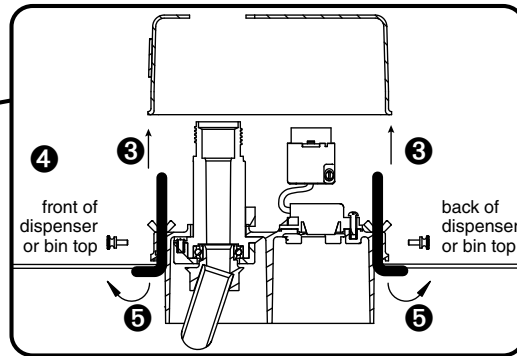
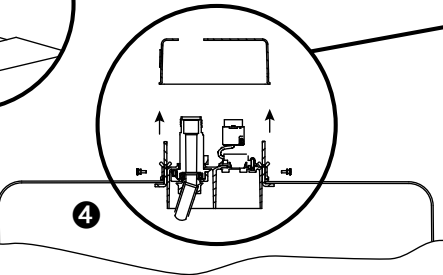
All other dispensers



Freestyle 9000



front of dispenser or bin top



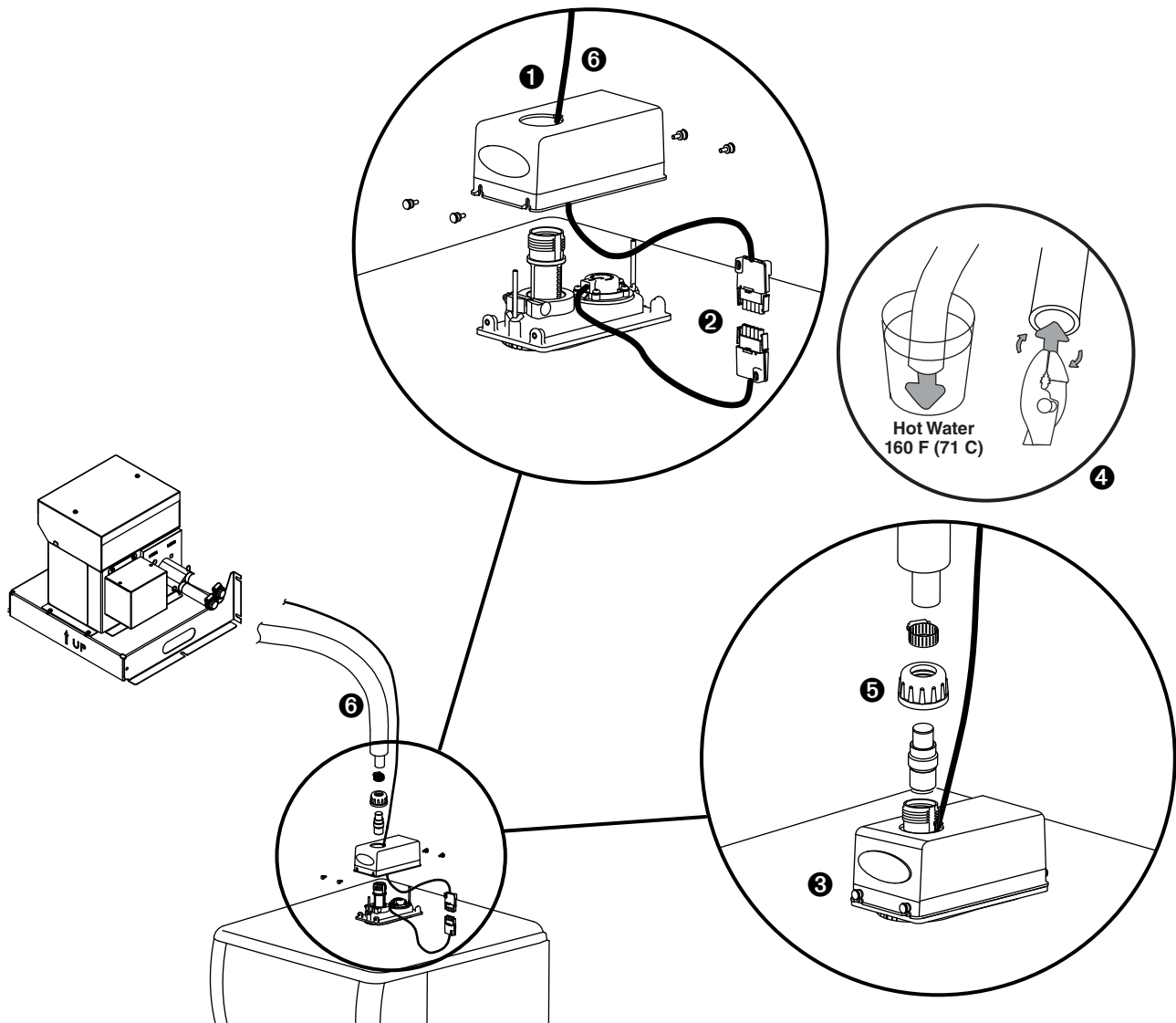
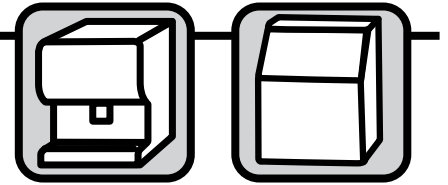
Prepare ice & beverage dispenser/bin top

- Using drawing above for your application, locate the proper location of ice & beverage dispenser (IBD) to place the supplied template **1**
- Using supplied template and 3.5" dia. hole saw, cut holes per template

Note: Use a hand saw or similar tool to complete the cut out.

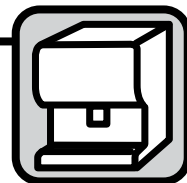
Mount sensor distribution unit

- Unscrew cap nut and remove center assembly **2**
- Loosen screws and remove cover **3**
- Turn short arm of angle rods so unit can be lowered into hole of IBD top
- Position unit into IBD top with tube at the front **4**
- Turn angle rods to face outward **5**
- Tighten wing nuts until arms of both rods press firmly against underside of IBD top securing body of sensor distribution unit

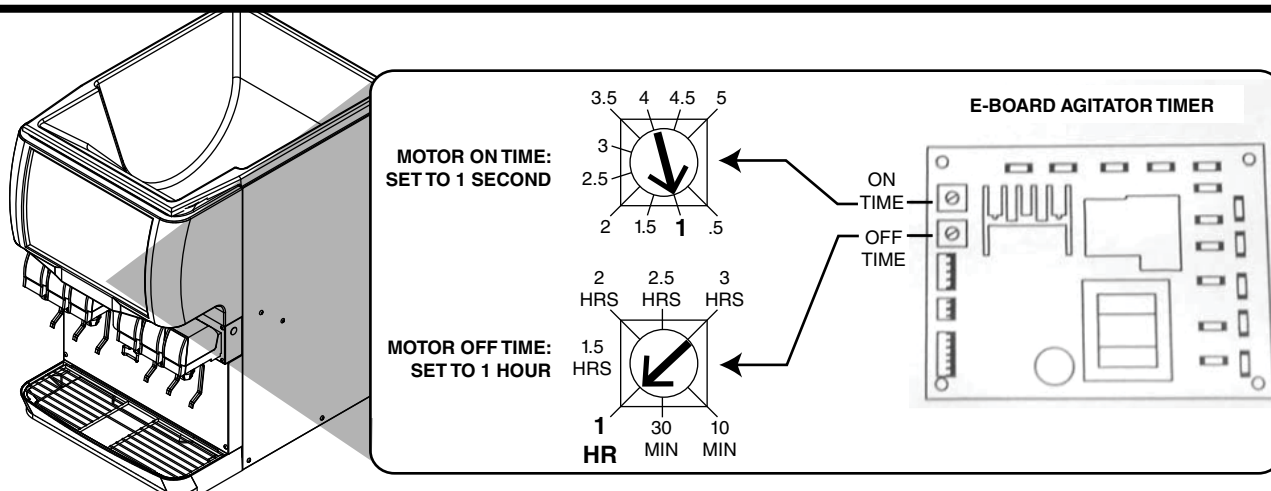


Connect ice transport tube & sensor cable

- Thread sensor cable through top of sensor distribution unit **1**
- Connect sensor pigtail to sensor cable **2**
- Tuck cable inside sensor unit replace top and tighten screws **3**
- Heat end of transport tube in cup of 160 F (71 C) hot water to soften and spread with pliers **4** before making connection to ease assembly and prevent stainless coupler edge from cutting inner wall of tube.
- Connect insulated ice transport tube **5**
- Attach **Lane 1** identification label to Lane 1 sensor cable and Lane 1 ice transport tube **6**
- **NOTE: SENSOR CABLE CONNECTION MUST INSIDE OF THE COVER**



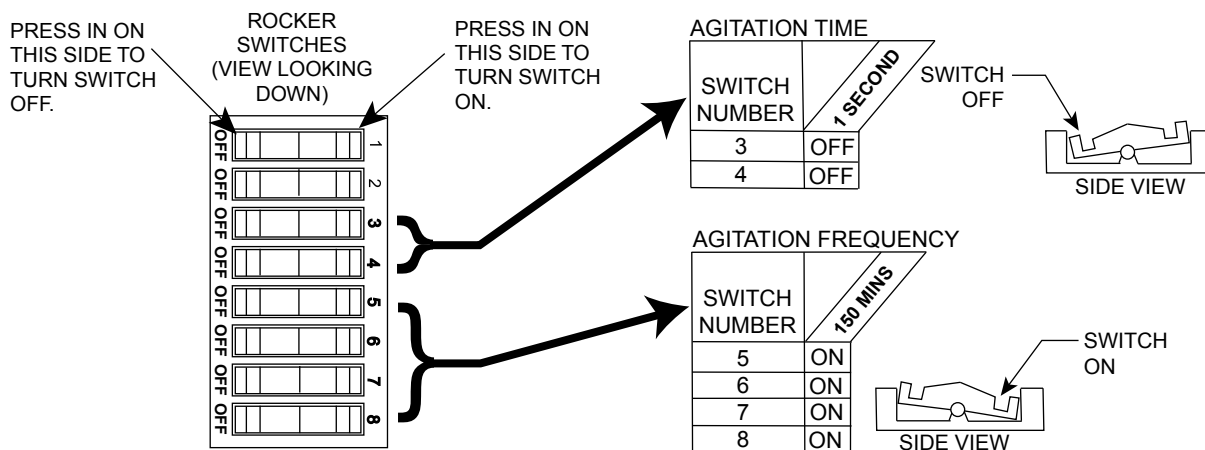
Agitation adjustments – CORNELIUS



Cornelius models ED, DB, DF, IDC and FLAVOR FUSION

Adjust the agitation timer located on the Cornelius PC board to 1 second on, 1 hour off. Note: See Cornelius manual or call Cornelius Technical Service at 1-800-238-3600 for more information.

Agitation adjustments – LANCER 4500 SERIES

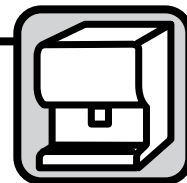


Lancer 4500 series only

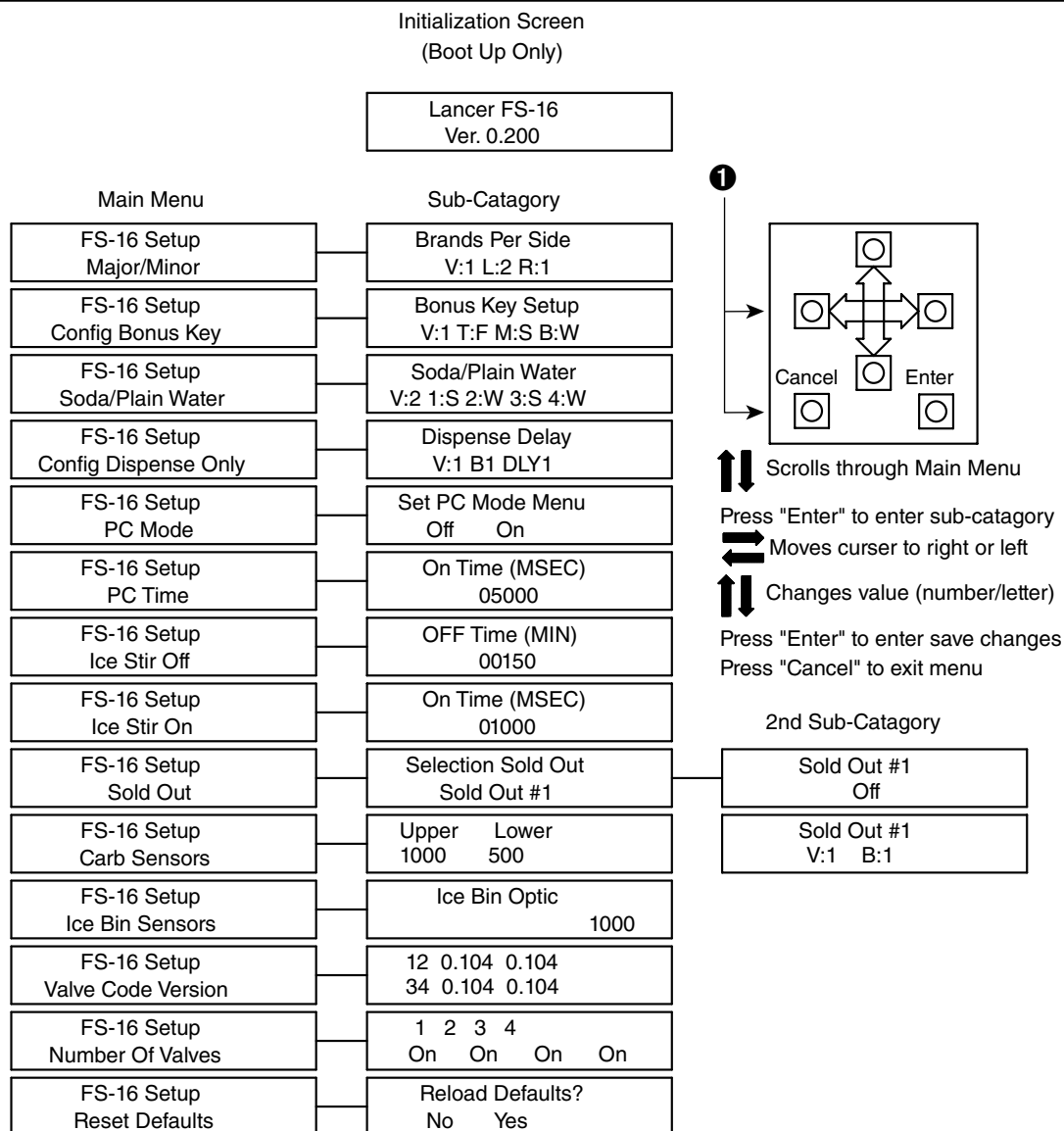
Adjust the agitation time to 1 second, and the agitation frequency to 150 minutes. See Lancer manual or call Lancer Customer Service at 1-888-846-6729 for more information.

Agitation adjustments – LANCER Sensation and Touchpoint, Ser/vebd

No agitation adjustment required



Agitation adjustments – LANCER FS SERIES



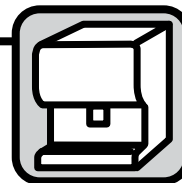
Lancer FS series only

- Hold down "cancel" and "left button" to get to hidden menu 1
- Type in code 6655
- Type in 150 minutes "off time" and 1010 milliseconds (1 second of time) as the preferred setting

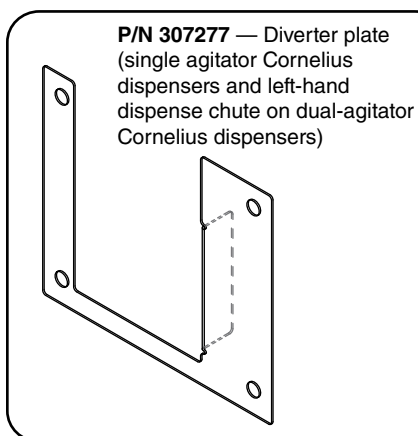
Note: See Lancer manual or call Lancer Customer Service at 1-888-846-6729 for more information.

Agitation adjustments – Coke Freestyle 9000

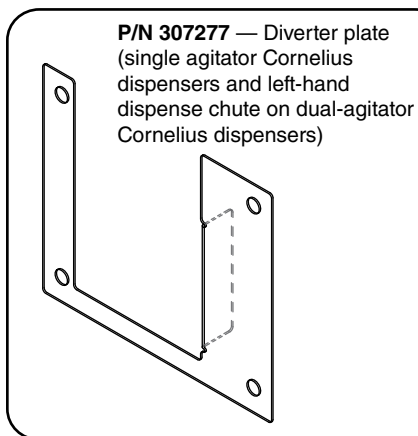
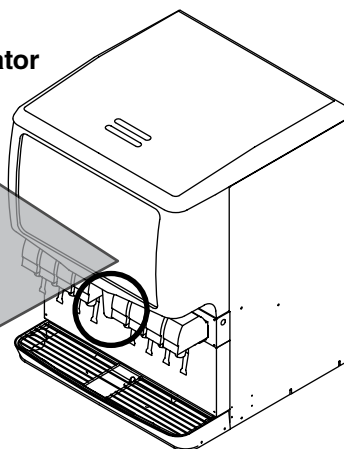
Call Coca-Cola at 800-241-COKE (2653) and request a Freestyle Senior Tech.



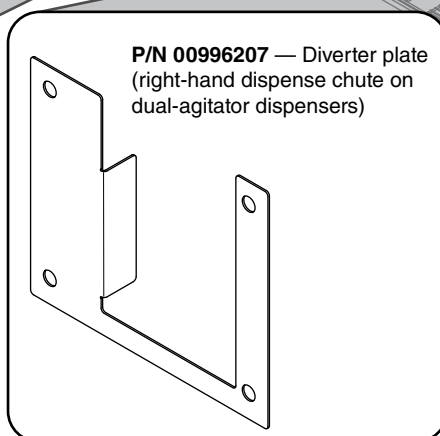
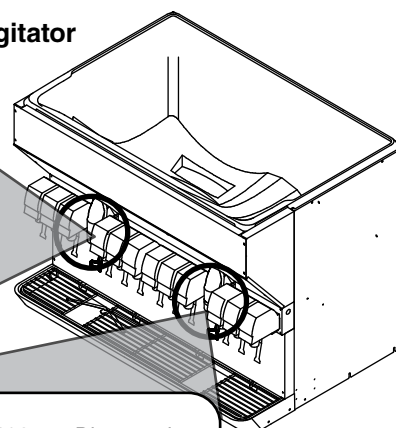
Dispenser diverter plate overview – CORNELIUS, ED, DF AND DB SERIES



Single Agitator



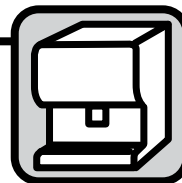
Dual Agitator



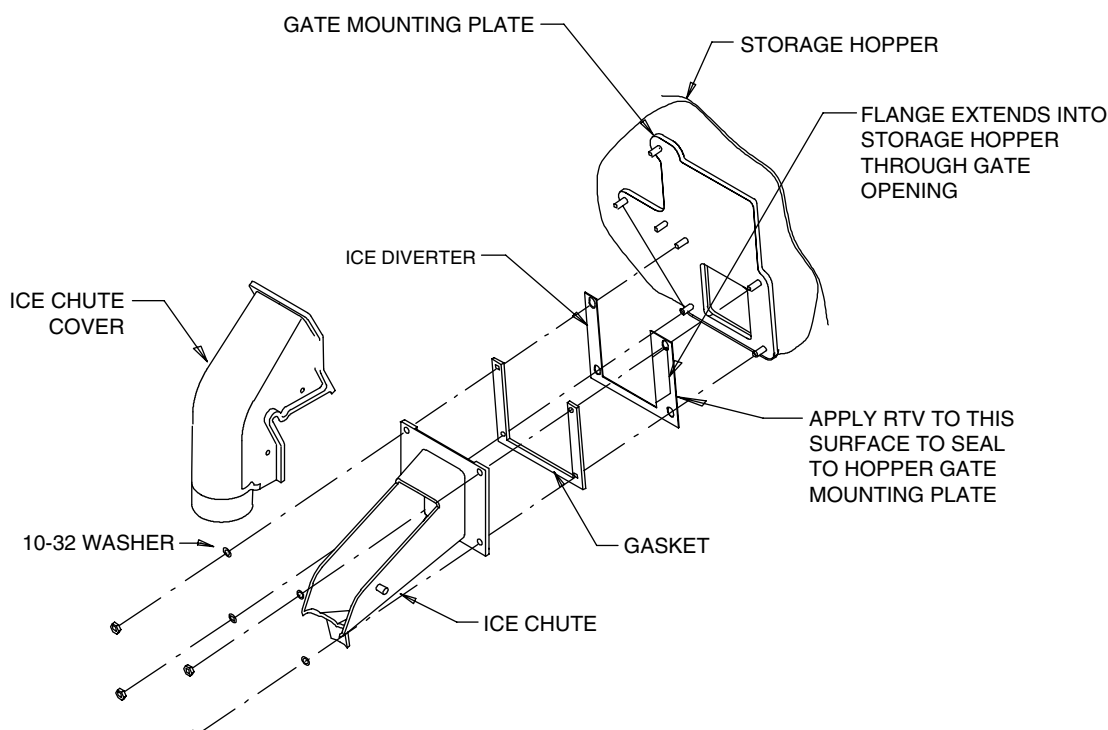
Cornelius ED, DF and DB series only

These dispensers require the installation of an ice diverter at the dispenser opening.

- Disassemble chute assembly
- Discard factory restrictor plate ❶
- Replace with alternate diverter plate ❷ (supplied)



Dispenser diverter plate installation – CORNELIUS ED, DF and DB SERIES



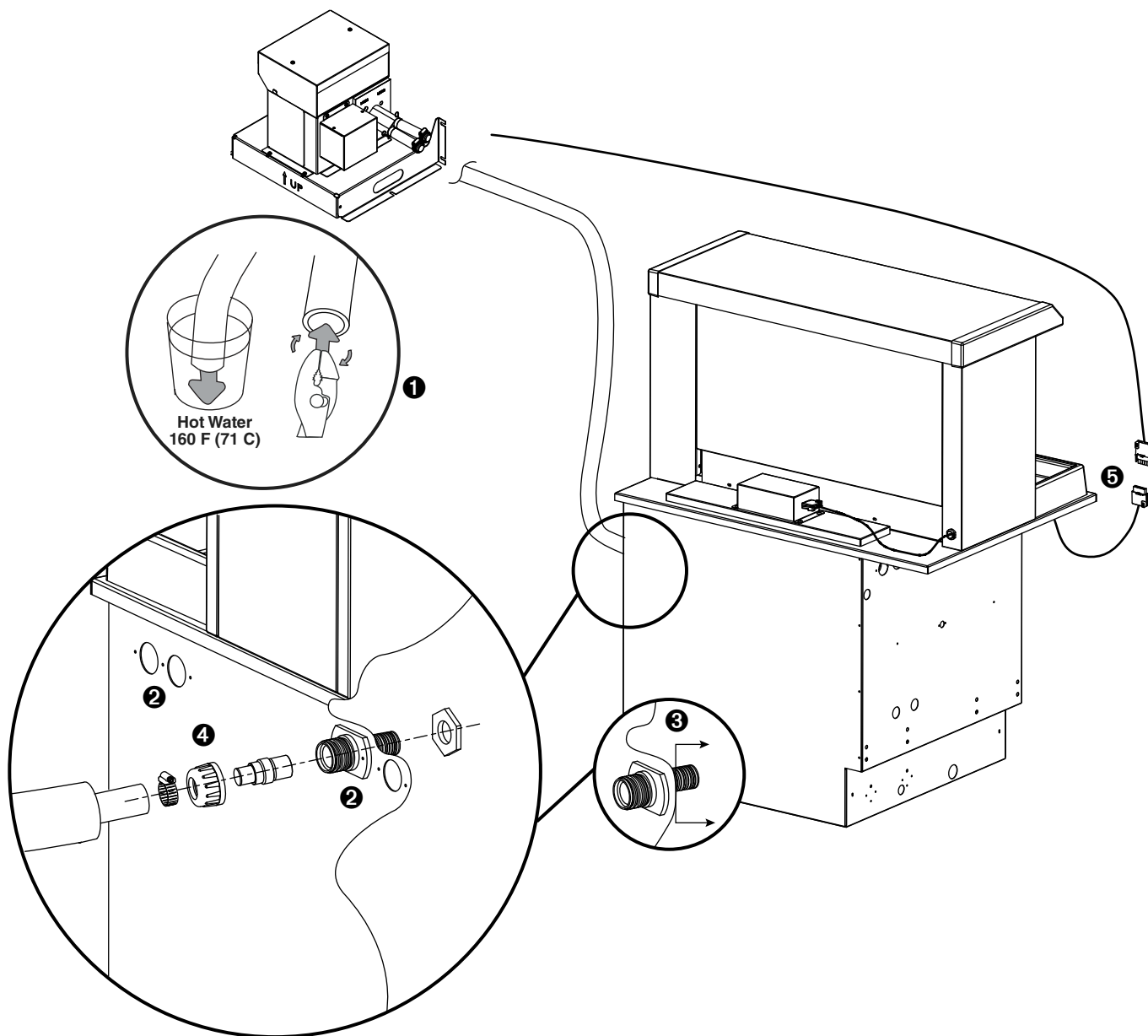
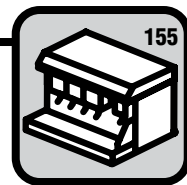
Cornelius ED, DF and DB series only

These dispensers require the installation of an ice diverter at the dispenser opening.

- Disassemble chute assembly
- Discard factory restrictor plate
- Replace with alternate diverter plate (supplied)

Agitation adjustments – Cornelius IDC and Flavor Fusion

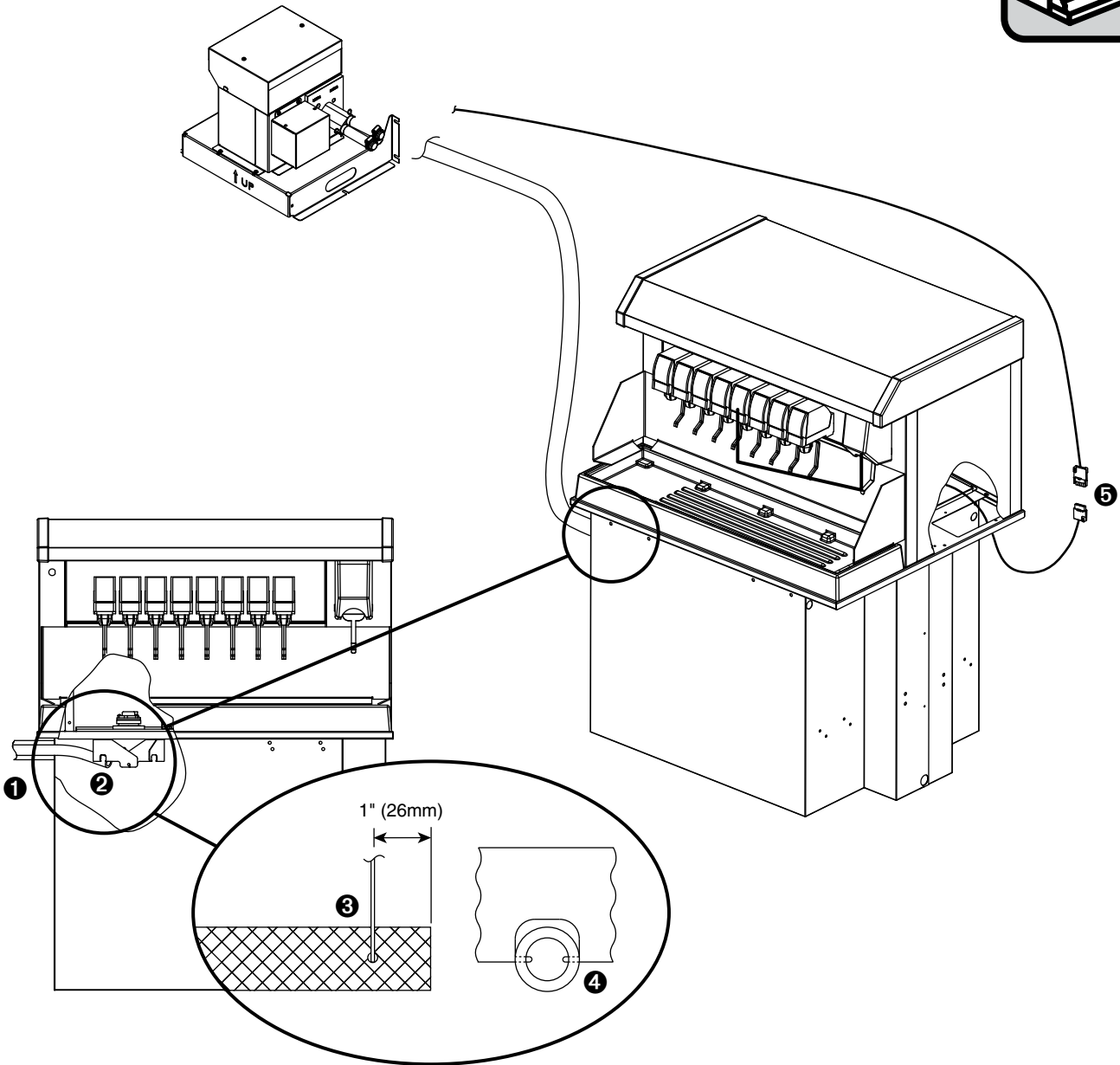
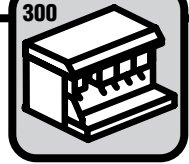
These dispensers require modifications for compatibility with Chewblet ice. Agitation times must be set to 1 second ON, 1 hour OFF and the ice restrictor plate must be adjusted to the fully open position. See your beverage supplier for these modifications.



Vision VU155 dispenser ice transport tube and sensor cable†

- Heat end of transport tube in cup of 160 F (71 C) hot water to soften and spread with pliers **1** before making connection to ease assembly and prevent stainless coupler edge from cutting inner wall of tube
- Install ice transport tube fitting in one of four pre-drilled rear holes in VU155 dispenser **2**
Note: If threaded end extends into dispenser it must be cut flush to inner nut. **3**

- Attach ice transport tube to fitting **4**. Cut transport tube to proper length and support the tube at least every 2 ft. (.6m) to avoid dips or traps that will result in standing water.
 - Connect sensor pigtail to sensor cable **5**
- † If VU155 is an existing unit install retrofit kit part# 00185165 before completing this portion of installation (retrofit instructions included with retrofit kit).



Vision VU300 dispenser ice transport tube and sensor cable†

- Insert ice transport tube through one of the four pre-drilled holes in the VU300 dispenser. **1** Be sure to cut transport tube to proper length to avoid dips or traps.
- Locate mounting tabs **2**
- Using a 3/16" bit, drill through the ice tube 1" (26mm) from end of ice transport tube creating two holes **3**

- Slightly compress end of tube to engage holes in mounting tabs **4**
- Connect sensor cable **5**

† If VU300 is an existing unit install retrofit kit part# 00185173 before completing this portion of installation (retrofit instructions included with retrofit kit).

8 Ice level set points

Ice level set point recommendations are shown in the table below. Please contact Follett Technical Services toll free at (877) 612-5086 or +1 (610) 252-7301 prior to changing ice level set points.

	IBD, Bin and Vision settings		ID50 Factory settings
LANE 1	Full 10" Min 14" Dif 3"	LANE 1	Full 8" Min 8" Dif 2"
LANE 2	Full 10" Dif 3"	LANE 2	Full 10" Dif 3"

To view ice levels

1. Locate LCD screen on Ice Manager control panel. Initial screen will show ice levels for lane 1 and lane 2 and diverter valve status (Fig. 1).

To view set points

1. Press and hold both MODE SELECT and LANE 1 buttons until LANE 1 SETUP appears on the display (Fig. 2).
Note: Default/factory-set ice level sensor settings are shown.
2. To view Lane 2, press MODE SELECT to navigate to lane 2 setup (Fig. 3).

To change set points

1. Press and hold both MODE SELECT and LANE 1 buttons until LANE 1 SETUP appears on the display (Fig. 2).
Note: Default/factory-set ice level sensor settings are shown.
2. Press LANE 1 button to move through FULL, MIN and DIF ice level sensor settings. When selected, choice will flash (Fig. 4).
3. Press MODE SELECT button to change ice level sensor set point (Fig. 5).
4. Press LANE 1 button to increase ice level sensor set point and LANE 2 to decrease ice level sensor set point, (Fig. 6) to correspond to the drop-in dispenser ice level sensor settings listed in table above.
5. Press MODE SELECT to save new ice level sensor setting (Fig. 7).
6. Press LANE 1 to continue to navigate through and set the Full, Min, and Dif ice level sensor settings for lane 1 (Fig. 8).
7. Press MODE SELECT to navigate to lane 2 setup (Fig. 9).
8. Repeat steps 2 through 6 to complete changes to lane 2 ice level sensor settings.

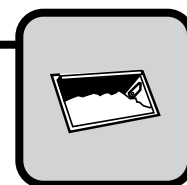


Fig. 1

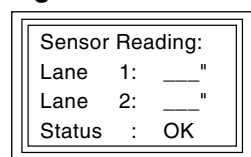


Fig. 2

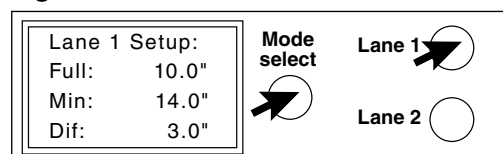


Fig. 3

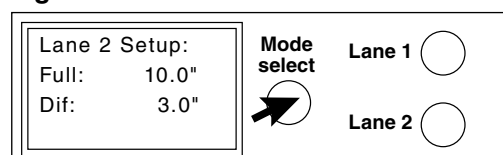


Fig. 4

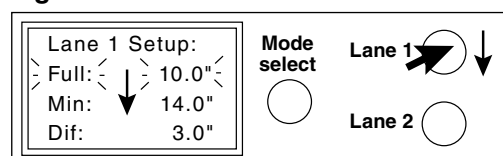


Fig. 5

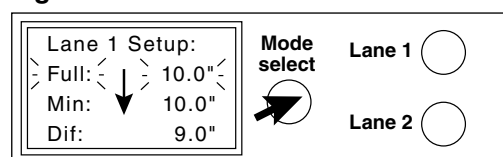


Fig. 6

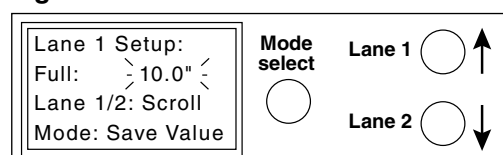


Fig. 7

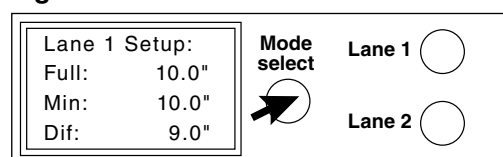


Fig. 8

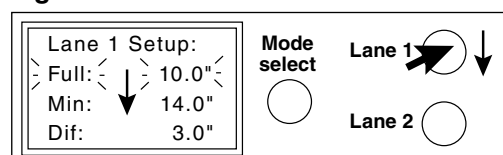
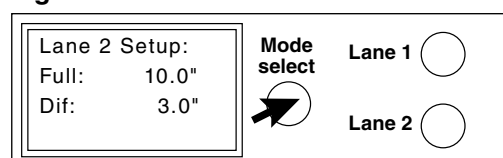


Fig. 9



Before Operating Equipment

Ice Manager Diverter Valve System must be cleaned and sanitized.

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



WARNING

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



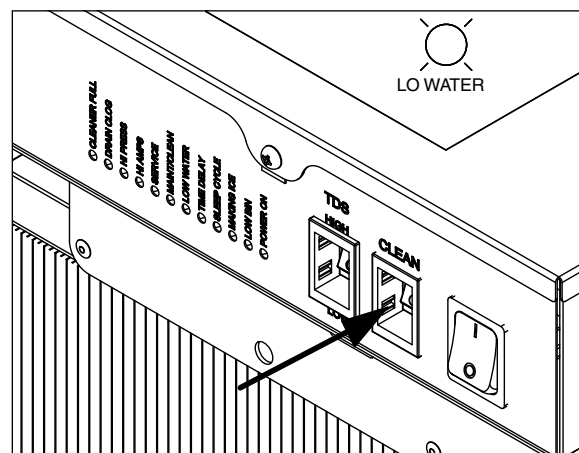
CAUTION

- Use only Follett approved SafeCLEAN Plus™
- Do not mix SafeCLEAN Plus™
- 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 from each lane before putting ice machine and Ice Manager system back into service.

Fig. 1

1. Press the CLEAN button. The machine will drain. The auger will run for a short time and then stop. Wait for the LOW WATER light to come on.



2. Follow the directions on the SafeCLEAN Plus packaging to mix 1 gal. (3.8 L) of Follett SafeCLEAN Plus solution. Use 100 F (38 C) water.
3. Using a 1 quart (1 L) container, slowly fill cleaning cup until CLEANER FULL light comes on. Do not overfill.
4. Place one SaniSponge™ cleaning sponge in remaining sanitizing and cleaning solution and retain for Step 23.

Note: Do not use bleach to sanitize or clean the icemaker.

Fig. 2

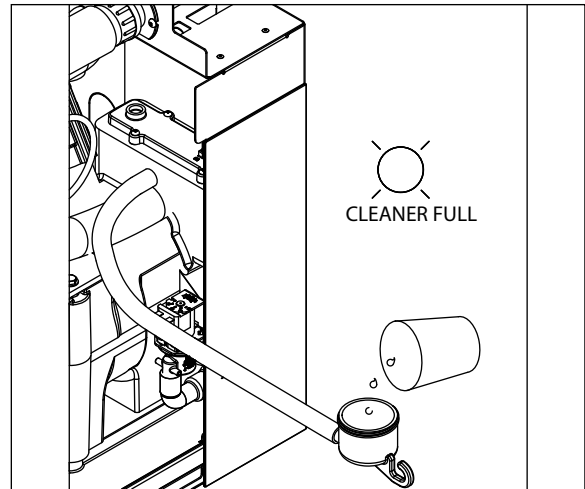
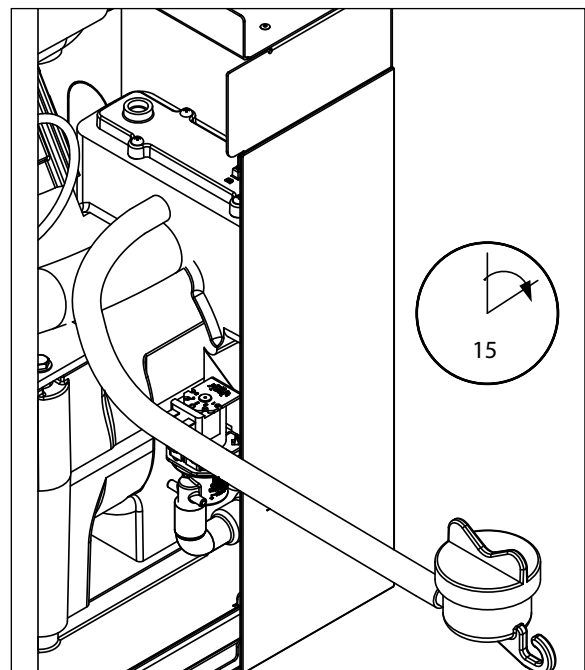


Fig. 3



5. Replace cover on cleaner cup. Machine will clean, then flush 3 times in approximately 15 minutes. Wait until machine restarts.

Fig. 4

Follow the directions on the SafeCLEAN Plus packaging to mix 1 gal. (3.8 L) of Follett SafeCLEAN Plus solution. Use 100 F (38 C) water.

6. To clean/sanitize ice transport tube – Press power switch OFF

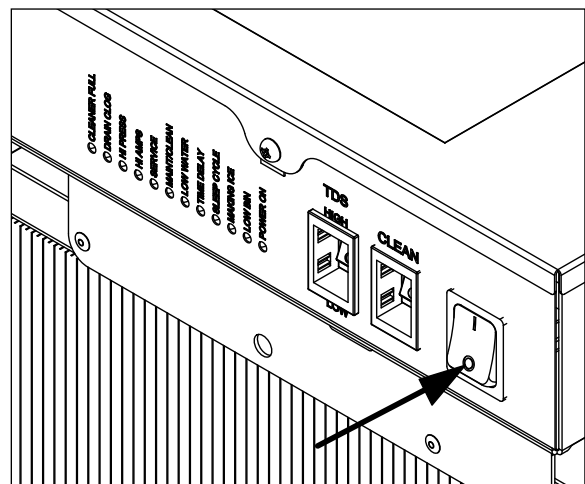


Fig. 5

7. Locate Ice Manager control panel.

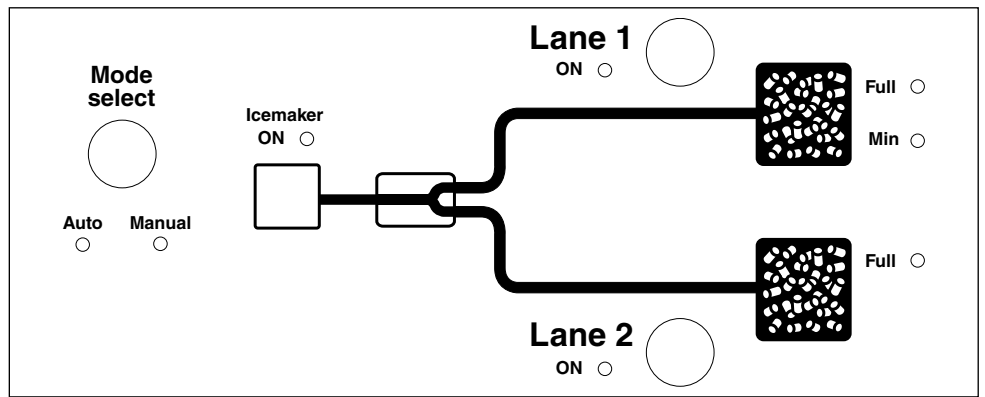


Fig. 6

8. To clean and sanitize Lanes 1 and 2, diverter valve must be in manual mode. Press the MODE SELECT button on the Ice Manager control panel. Manual light will come on. If auto light comes on, press MODE SELECT button again.

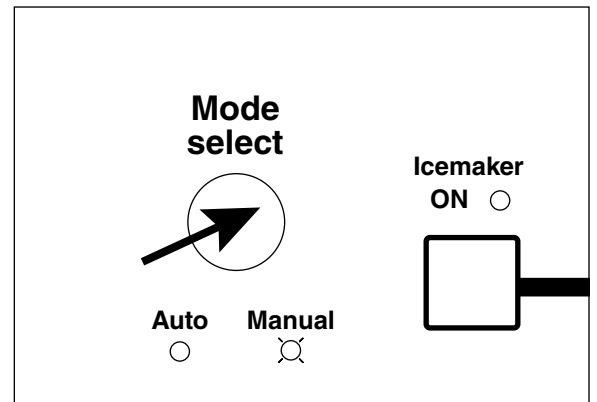
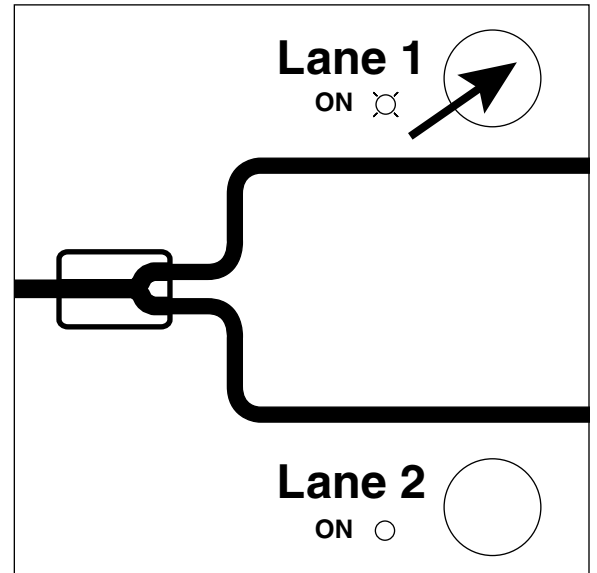


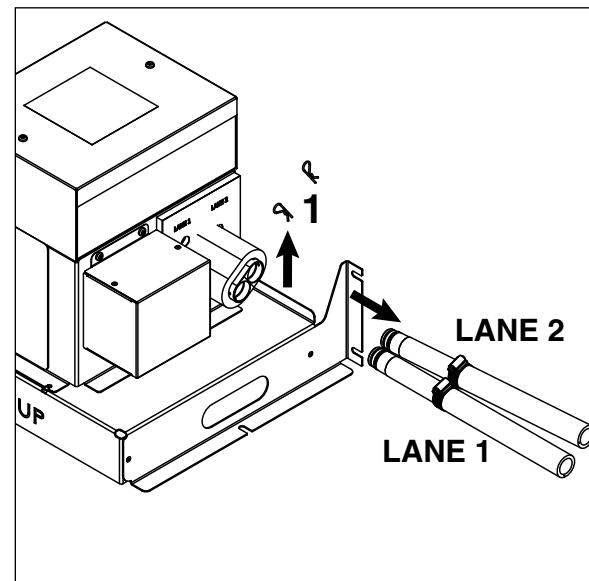
Fig. 7

9. **To clean and sanitize Lane 1** – Press LANE 1 button. Lane 1 light will come on.



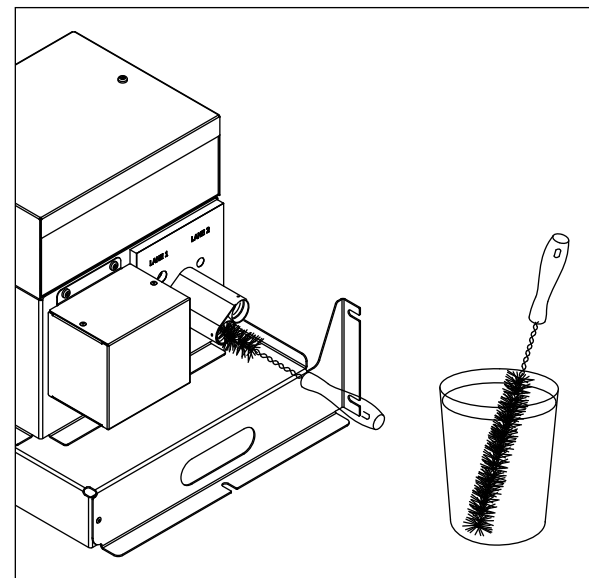
10. Disconnect ice transport tubes from diverter valve unit by removing the cotter pins (Fig. 8.1). Be sure to note Lane 1 and Lane 2 connections to avoid confusion when reattaching.

Fig. 8



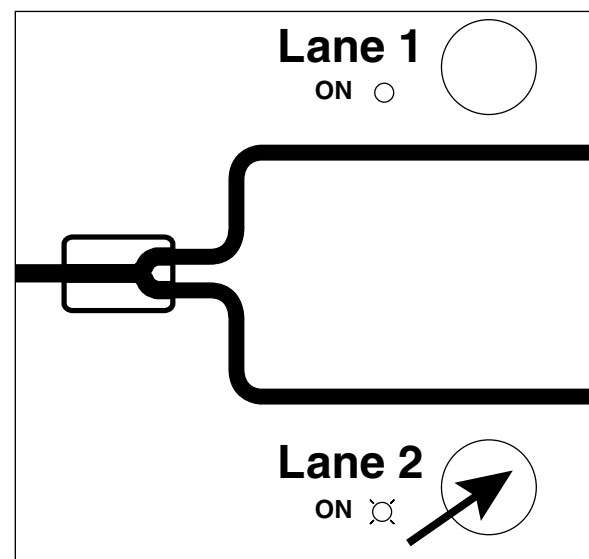
11. Soak supplied brush in cleaning/sanitizing solution and scrub inside of the diverter valve Lane 1 for at least 60 s, re-wetting the brush as needed.

Fig. 9



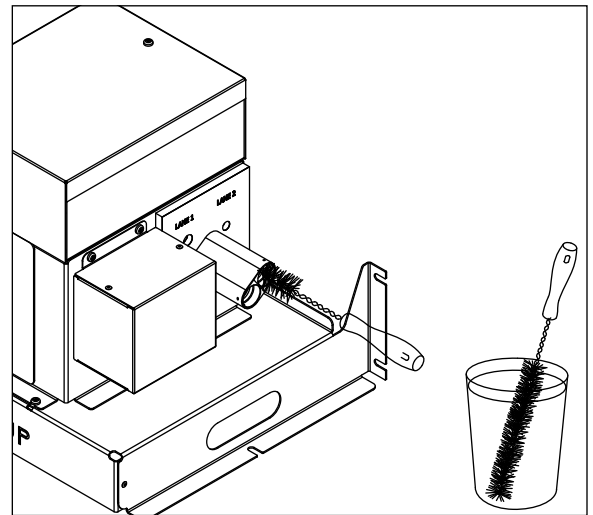
12. To clean and sanitize Lane 2 – Press LANE 2 button. Lane 2 light will come on.

Fig. 10



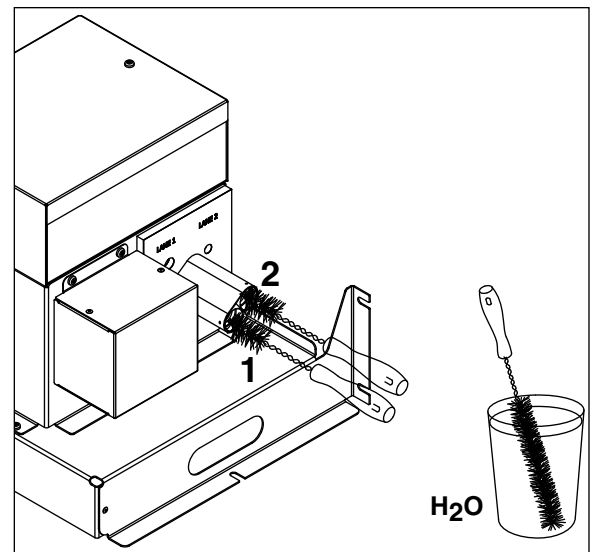
13. Soak supplied brush in cleaning/sanitizing solution and scrub inside of the diverter valve Lane 2 for at least 60 s, re-wetting the brush as needed.

Fig. 11



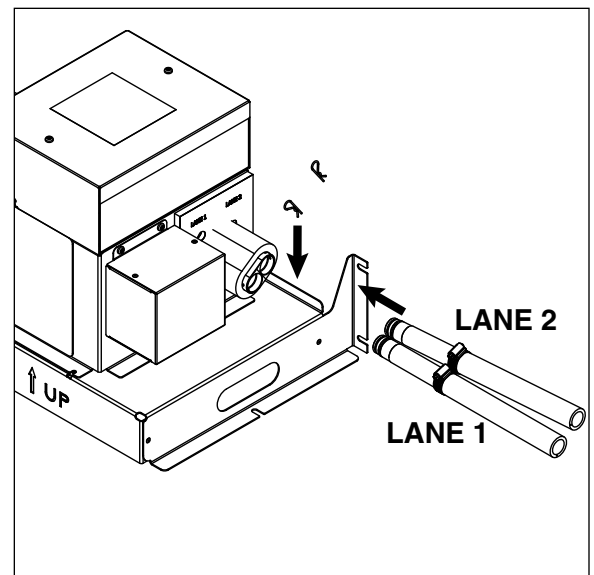
14. Rinse brush in potable, 100 F (38 C) water. Rinse Lane 1 (Fig. 12.1), Lane 2 (Fig. 12.2), and inlet (Fig. 12.3) with clean potable water for at least 60 s to be sure each lane is rinsed thoroughly.

Fig. 12



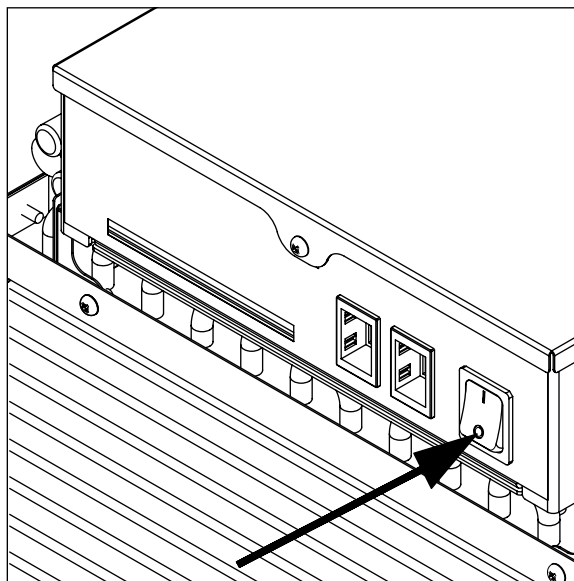
15. Re-connect ice transport tube to Lane 1 and Lane 2 and secure with cotter pins.
16. Re-insulate Lane 1 and Lane 2 tube connections as needed with new insulation tape.

Fig. 13



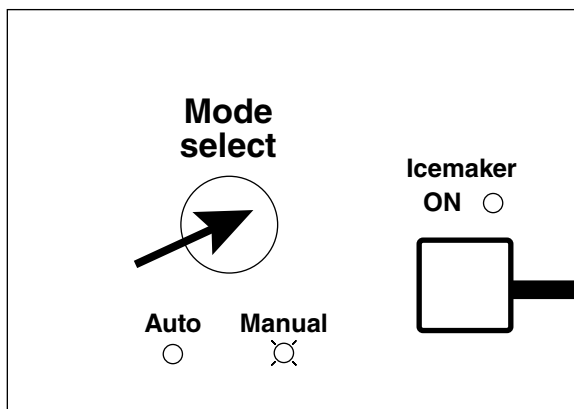
17. To clean and sanitize Lane 1 ice transport tube –
Press ice machine power switch OFF.

Fig. 14



18. Verify that Ice Manager is in manual mode. Manual light should be on. If auto light is on, press MODE SELECT button to switch to manual mode.

Fig. 15



19. Press LANE 1 button. Lane 1 light will come on.

Fig. 16

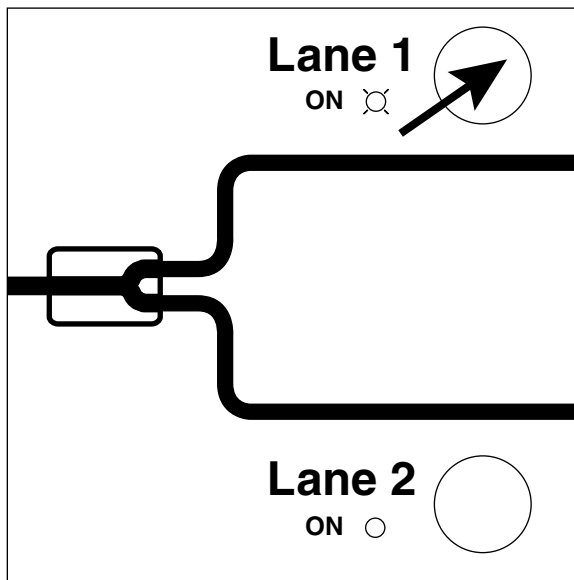


Fig. 17

20. Disconnect coupling from ice machine as shown.

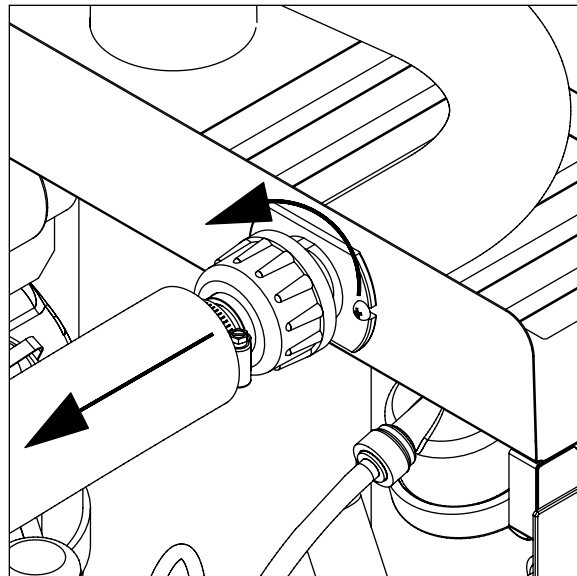


Fig. 18

- 21.** Using disposable food service grade gloves, insert dry Sani-Sponge.
- 22.** Insert Sani-Sponge soaked in SafeClean Plus (from Step 4).
- 23.** Push both Sani-Sponges down ice transport tube with supplied pusher tube.

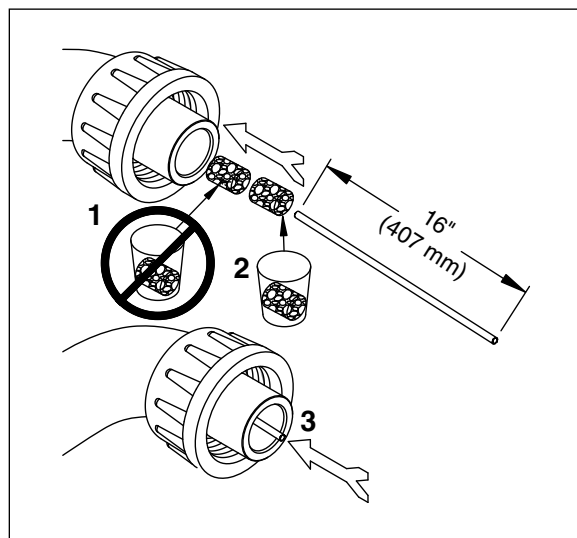
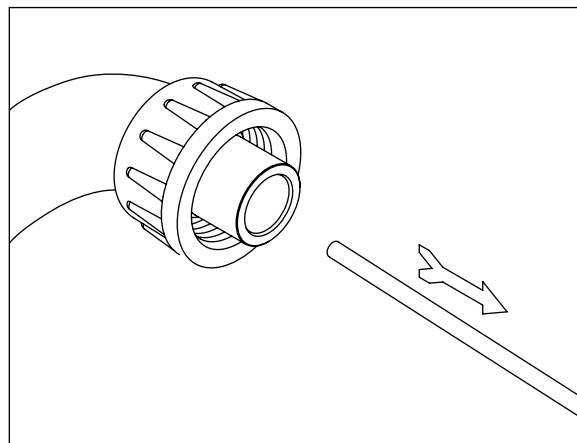


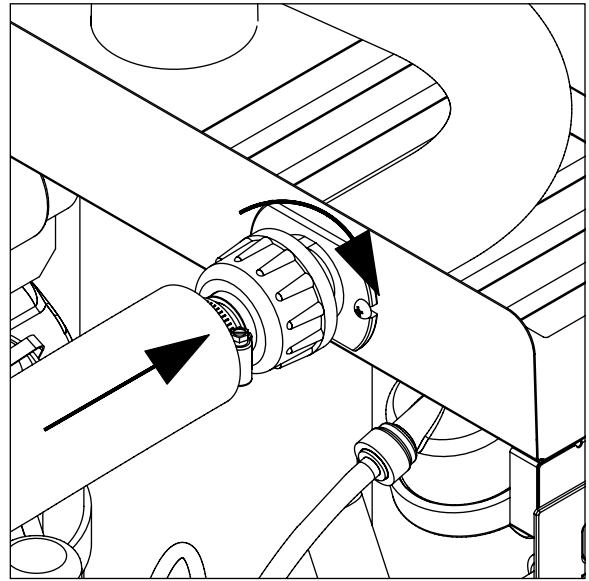
Fig. 19

- 24.** Remove 16" (407 mm) pusher tube.



- 25. Reconnect coupling. Press ice machine power switch ON. Ice pushes Sani-Sponges through tube.**

Fig. 20



- 26. 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 (3 kg) of ice from unit. Discard ice and Sani-Sponge.**

Fig. 21

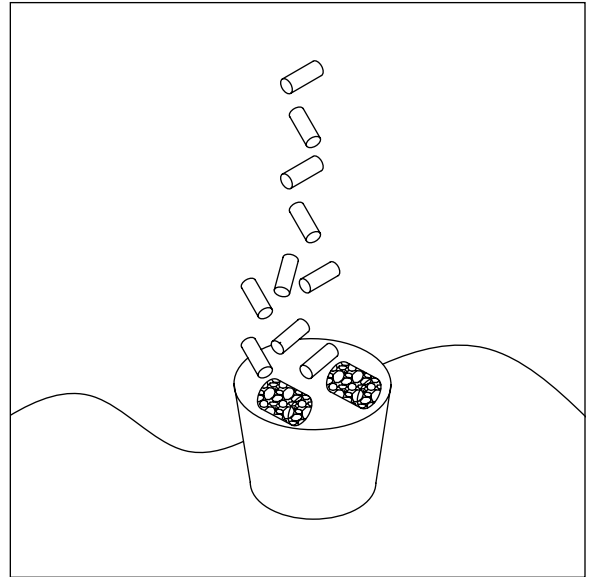


Fig. 22

- 27. To clean and sanitize Lane 2 ice transport tube – Press ice machine power switch OFF.**

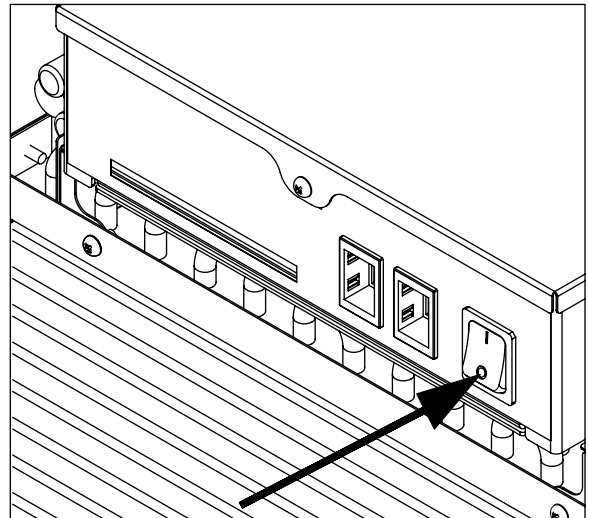


Fig. 23

28. Verify that Ice Manager is in manual mode. Manual light should be on. If auto light is on, press MODE SELECT button to switch to manual mode.

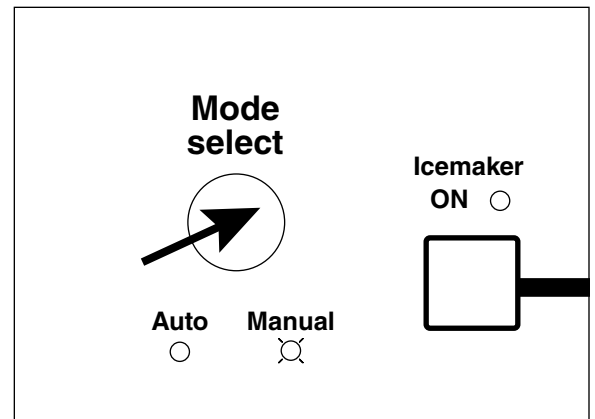


Fig. 24

29. Press LANE 2 button. Lane 2 light will come on.

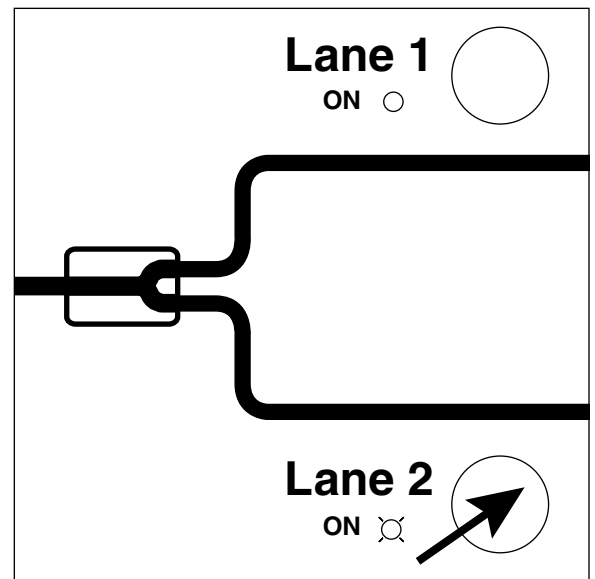
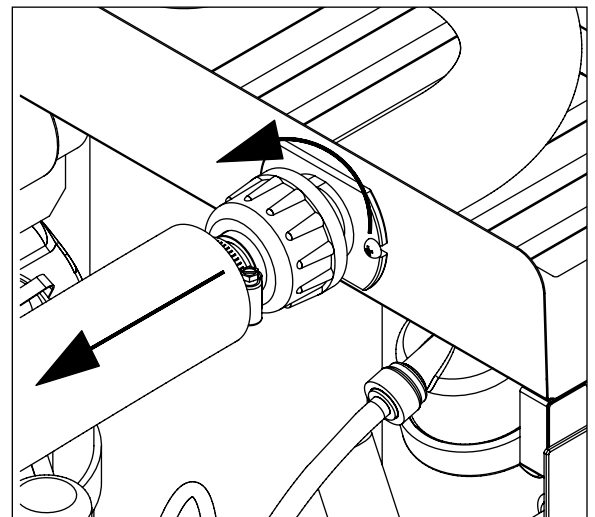


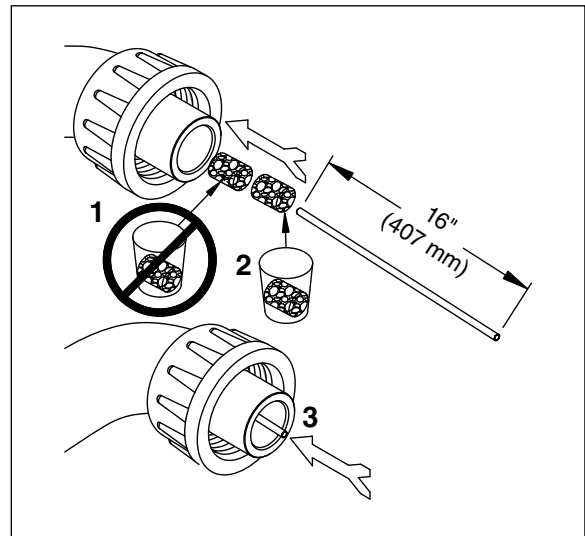
Fig. 25

30. Disconnect coupling from ice machine as shown.



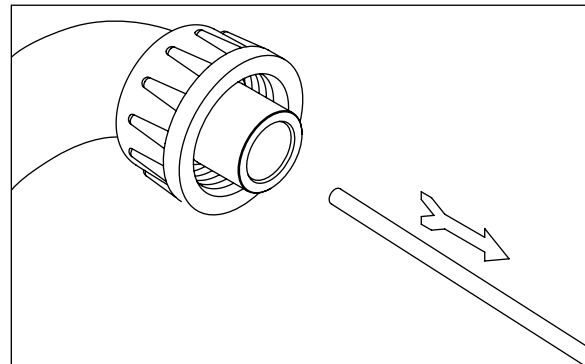
31. Using disposable food service grade gloves, insert dry Sani-Sponge.
32. Insert Sani-Sponge soaked in SafeClean Plus (from Step 4).
33. Push both Sani-Sponges down ice transport tube with supplied pusher tube.

Fig. 26



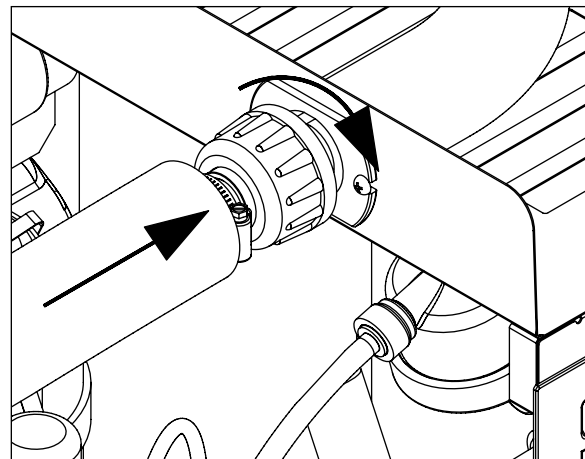
34. Remove and discard 16" (407 mm) pusher tube.

Fig. 27



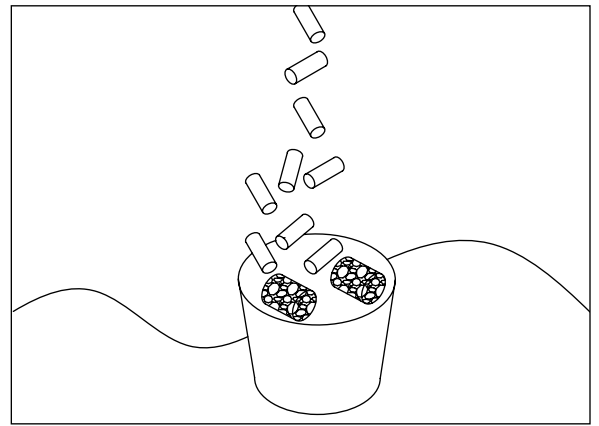
35. Reconnect coupling. Press ice machine power switch ON. Ice pushes Sani-Sponges through tube.

Fig. 28



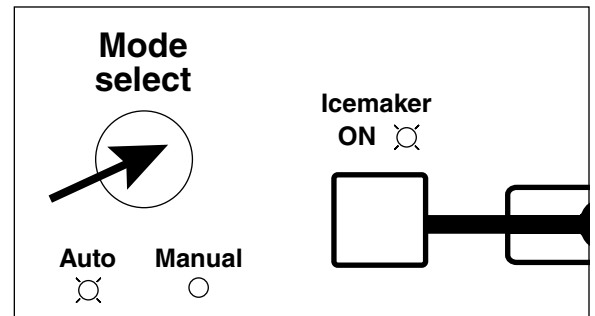
- 36.** Place a sanitary (2 gallon or larger) container in bin or dispenser to collect Sani-Sponges and ice for 10 minutes. Collect 5.5 lbs (3 kg) of ice from unit. Discard ice and Sani-Sponges.

Fig. 29



- 37.** Press MODE SELECT button on Ice Manager control panel to switch to auto mode. Auto light will come on.

Fig. 30



Operation

General information

The Ice Manger diverter valve system is designed to direct ice from one Horizon ice machine to two ice storage units. AUTO is the standard operating mode. When selected, ice is directed to the lane 1 storage unit until it reaches the MIN (minimum) set-point. Ice is then directed to the lane 2 storage unit and will continue to fill this lane until the FULL level is achieved. If at any time the ice level in lane 1 storage unit goes below the MIN set-point, ice will be directed back to lane 1 until the MIN level is satisfied. When lane 2 reaches its FULL level, ice will be directed back to lane 1. When both lanes reach their FULL level, the Horizon ice machine will shut off. The ice machine will be ready to start as soon as the ice level in either of the storage units drops below the FULL set-point.

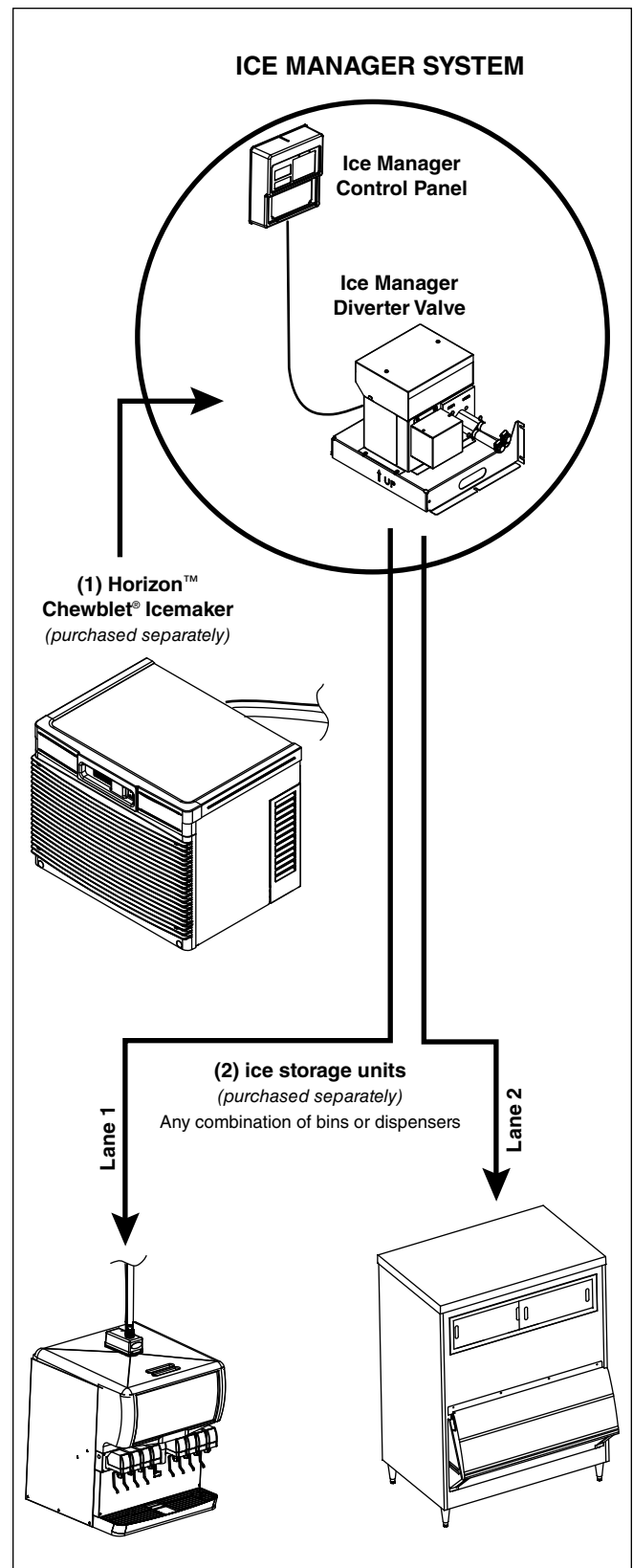
Audible alarm

In the event a system error occurs that could cause ice shortages, the audible alarm will be turned ON accompanied by an appropriate error message on the LED screen. To silence the alarm, press any of the push buttons on the control panel. This will silence the alarm for 4 hours, however the error message displayed on the LED screen will remain until the problem is addressed. After 4 hrs, if the error has not been addressed, the audible alarm will resume.

Placing the system in MANUAL MODE will also prevent the alarm from sounding. The error message on the LED screen will still flash, but the alarm will not resume.

See troubleshooting guide on page 36 for causes.

IMPORTANT: Ice Manager must be connected to the Ice Machine and powered up before turning on power to the Ice Machine.



Service

System components

Follett's Ice Manager diverter valve system consists of following major components:

- Diverter valve module
- Control panel module
- Ice transport tube lane 1 with a dedicated sensor cable 1
- Ice transport tube lane 2 with a dedicated sensor cable 2
- Ice level sensor / ice distribution module for lane 1
- Ice level sensor / ice distribution module for lane 2

System operation

The Ice Manager diverter valve system is designed to control the feeding of ice from one Horizon ice machine to two ice storage units. There are different ice level set-points for ice storage units.

The ice storage unit for lane 1 has two ice level set points, MIN and FULL, while the ice storage unit for lane 2 has only one - FULL. There is also a DIF (Differential) setting for each lane that initiates refill of ice.

Note: Ice Manager diverter valve system comes with factory pre-set values for MIN, FULL and DIF (differential) parameters. If required the pre-set values can be field modified. (See the ice level set point on page 18.)

Control logic

Ultrasonic sensors for lane 1 and lane 2 detect ice level and send an analog signal between 0.5vdc to 4.5vdc back to diverter valve control board. This signal is converted into distance (in inches) from the sensor face to the ice surface.

An appropriate light on the control panel comes on indicating the ice level reached either MIN or FULL levels for lane 1 or FULL level for a lane 2 units.

Auto mode

AUTO is the standard operating mode for the Ice Manager diverter valve system. In AUTO mode, the system will automatically direct the ice according to the sensor set point levels.

On start up, when AUTO mode is selected the diverter valve directs ice through lane 1 to the ice storage unit until the MIN level is satisfied.

The diverter valve will then switch and direct ice through lane 2 until its ice storage unit FULL level is satisfied.

If during this time the ice level in lane 1 ice storage unit drops below the MIN level, then the diverter valve will re-direct ice flow back to lane 1 and continue feeding ice through the lane 1 until the ice storage unit MIN level is satisfied again. The cycle will continue until FULL level for both ice storage units are reached.

When the ice level in both ice storage units is at the FULL level, the diverter valve shuts off the signal to the ice machine. When the delay period expires, the control logic will allow the ice machine to restart when either sensor detects ice level drop below the FULL set-point.

Note: There is a 30 second time delay function programmed into the control logic. This function requires 30 seconds of a steady ice level reading exceeding a set-point before the control logic initiates any action. Therefore, a momentary ice level change measured by the ice level sensors will not trigger a shut-down or divert.

Manual mode

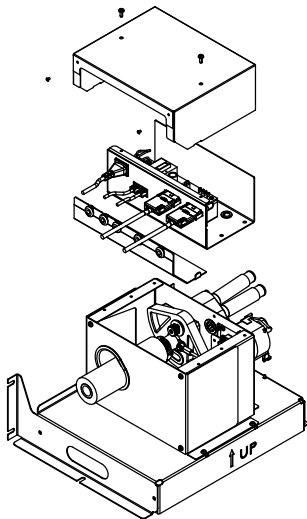
For Ice Manager diverter valve system cleaning and sanitizing, and some special situations (see a troubleshooting guide on page 36), a MANUAL mode is available. MANUAL mode overrides AUTO mode and allows the operator to select the lane.

In order to switch between AUTO and MANUAL modes push the MODE SELECT button located on the control panel. While in MANUAL mode, pressing either lane 1 or lane 2 buttons will divert ice flow accordingly.

Note: When in manual mode, ice level sensors will not control the divert action, however the ice sensors will continue to control the ice machine. When the FULL ice level in designated ice storage unit is satisfied the ice machine will be shut off.

Diverter valve module

There are three major functional components within the diverter valve.



Control board

The control board manages all functions of the Ice Manager diverter valve system based on signals received from lane 1 and lane 2 ice level sensors. It diverts ice flow from one lane to another, while ice storage units are filled and shuts off ice machine when both dispensers are at the FULL level.

The control board communicates with the Horizon ice machine and the sensors for the lane 1 and lane 2 via appropriate signal cables. It supplies 120/60/1 electrical power to the divert gearmotor assembly and monitors the divert gearmotor position status based on inputs from two magnetic switches mounted to the gearmotor bracket. It also provides 12vdc power to the control panel via the gray control cable.

Divert gearmotor

The divert gearmotor assembly is linked to the divert paddle assembly and manages ice flow direction.

Divert paddle

Located inside of the body of the diverter valve module, the divert paddle is driven by the gearmotor and switches ice flow from one internal channel to another.

Fig. 31

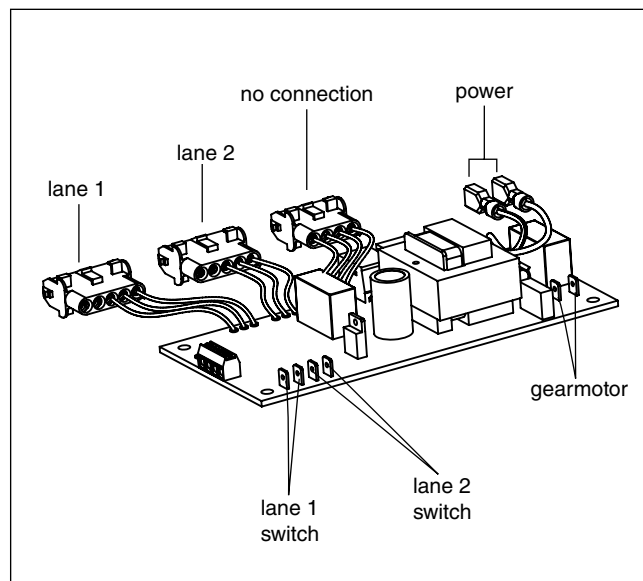


Fig. 32

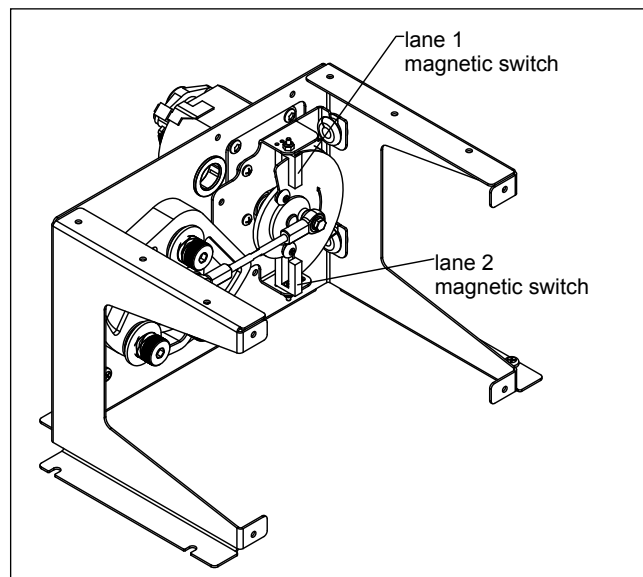
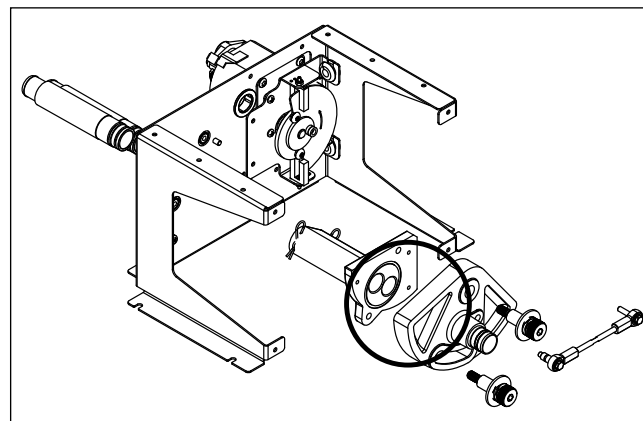
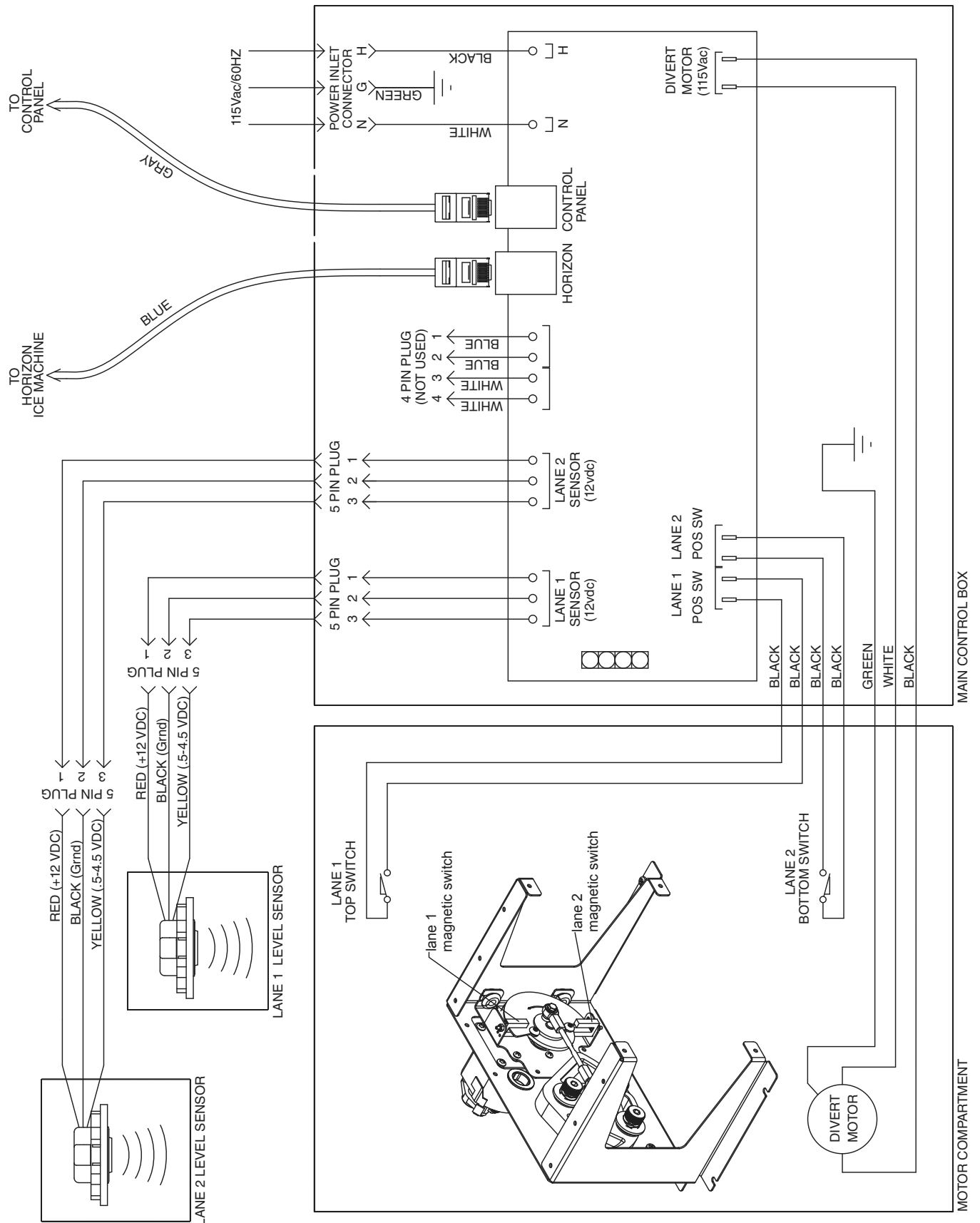


Fig. 33



Ice Manager diverter valve wiring diagram

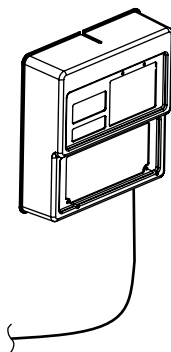


Control panel

(Fig. 39)

The control panel is powered with 12vdc coming from the diverter valve control board via the gray control cable. It contains a membrane switch and an LCD screen.

Note: The diverter valve control board receives power directly from the outlet. The system will be running even if the control panel is not operational.



Membrane switch

The membrane switch contains LED indicators offering a quick system status.

ICE MACHINE ON light - a steady LED indicates the ice machine is running.

LANE 1 ON light - a steady LED indicates ice is directed through lane 1

LANE 2 ON light - a steady LED indicates ice is directed through lane 2

FULL light – a steady LED indicates the ice has reached the FULL level set-point

MIN light – a steady LED indicates the ice has reached the minimum level set-point

LCD screen

The LCD screen shows ice level readings in both ice storage units and overall Ice Manager diverter valve system status. In case of System errors the LCD screen displays the nature of the failure and provides necessary details.

(See troubleshooting on page 26 for details.)

Audible alarm

In the event a system error occurs that could cause ice shortages, the audible alarm will be turned ON accompanied by an appropriate error message on the LCD screen. To silence the alarm, press any of the push buttons on the control panel. This will silence the alarm for 4 hours, however the error message displayed on the LCD screen will remain until the problem is addressed. After 4 hrs, if the error has not been addressed, the audible alarm will resume.

Placing the system in MANUAL MODE will also prevent the alarm from sounding. The error message on the LCD screen will still flash, but the alarm will not resume.

See troubleshooting guide for causes.

Fig. 34

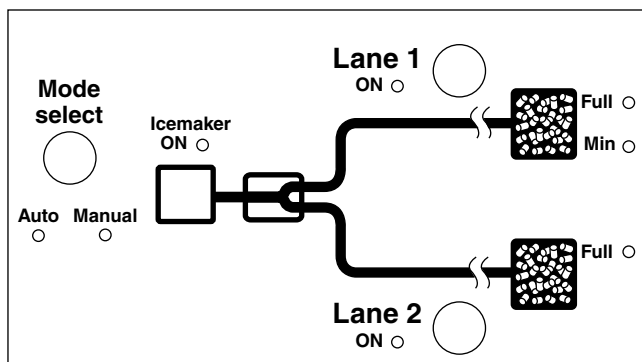
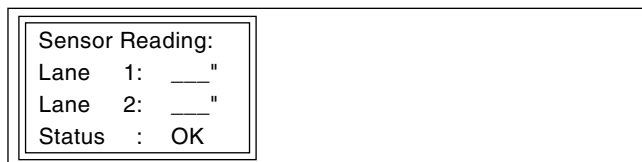


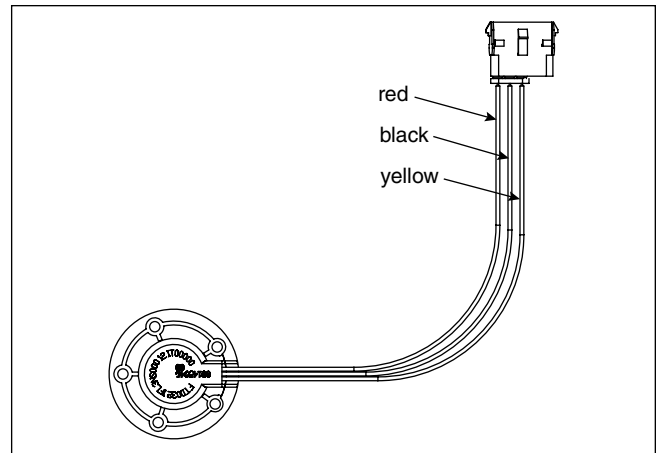
Fig. 35



Ultrasonic sensor

The ultrasonic sensor measures ice level in each ice storage unit. The sensor outputs an analog voltage between 0.5 Vdc and 4.5 vVdc corresponding the ice level distance from the face of the sensor.

Fig. 36



Troubleshooting

Ice shortage with audible alarm

To silence audible alarm press any push buttons on the face of the control panel. Use the chart below to diagnose the cause.

Control Panel Error Message	Indicator or Possible Cause	Corrective Action
Ice machine LED is flashing and ICEMAKER ERROR message is displayed	• Signal cable between Horizon ice machine and diverter valve module is not properly engaged	• Check the signal cable connections
	• Horizon ice machine has shut off on a SERVICE error	• Troubleshoot Horizon ice machine
Lane 1 or lane 2 LED is flashing and SENSOR ERROR message is displayed	• Malfunctioning sensor	• Check supply and return dc voltage at sensor connections. Supply should read 12vdc between red and black wires. Return should read between .5 - 4.5 vdc between yellow and black wires.
		• Recycle power to sensor and see if error clears.
Lane 1 or lane 2 LED is flashing and SENSOR CONNECT ERROR message is displayed	• Sensor is disconnected from a signal cable	• Check sensor connections to cable
	• Signal cable is disconnected from diverter valve	• Check signal cable connection to diverter valve
Both lane 1 and lane 2 LEDs are alternately flashing and DIVERT ERROR message is displayed	• Both upper (lane 1) and lower (lane 2) magnetic positioning switches mounted to the gearmotor bracket inside the diverter valve are in closed or open position at the same time.	• Check both magnetic positioning sensors. One should be closed when it is engaged by the positioning disc, while the other should be open. Note: To manually rotate the disc depress the gearmotor brake.
DIVERT TO L1 or DIVERT TO L2 message is displayed	• Divert valve fails to switch to another lane due to lane magnetic positioning switch not closing	• Check to be sure magnetic positioning switch is properly connected to the control board
		• Check the positioning switch for continuity while it is engaged by the positioning disc
	• Diverter valve fails to switch to another lane due to mechanical jamming inside the diverter valve	• Manually switch between lane 1 and lane 2 to free divert paddle
	• Mechanical linkage between the gearmotor and divert paddle is disconnected	• Check the linkage between the gearmotor and divert paddle

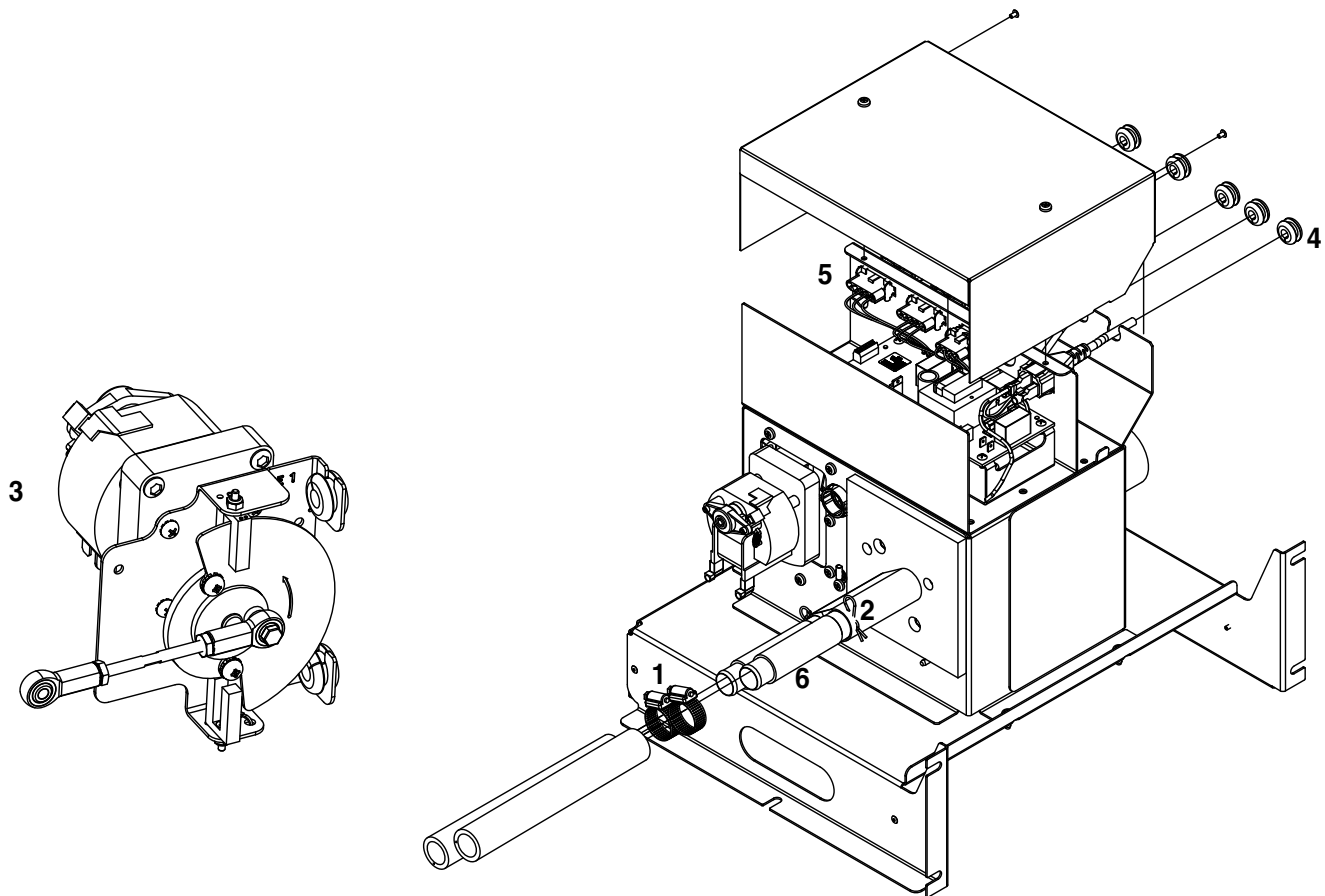
Ice shortage without audible alarm

Use the chart below to diagnose the cause.

Control Panel Error Message	Indicator or Possible Cause	Corrective Action
No error message	Signal cables and ice transport tubes are not connected to correct ice storage/ice dispenser (lane)	Check to be sure that signal cables and ice transport tubes are connected to correct lane
No error message	Ice level reading as displayed on control panel is significantly different from the actual distance between the ice and the sensor face	Recycle power to the diverter valve. Make sure to re-start the Horizon ice machine which will go into TIME DELAY mode
Icemaker LED is flashing and ICEMAKER ERROR message is displayed or Icemaker LED is not on when ice maker is running	Signal cable between Horizon ice machine and diverter valve module is not properly engaged	Check the signal cable connections
No error message	Horizon ice machine goes into TIME DELAY mode within a few minutes of start up of lane change	- Manually switch ice to another lane and restart Horizon ice machine. Let ice machine produce ice for 5 to 8 minutes and manually switch ice back to the “troublesome” lane. See if “start-up” ice clears through - If the above procedure does not work, investigate a potential ice lane restriction issue (i.e. transport tube, bulkhead fittings, sensor distribution unit, diverter valve) - A Time Delay Error where the ice maker’s shuttle is triggered by a blockage of ice could be caused by a misalignment of Lane 1 and 2 in the Ice Manager Diverter Valve (IMDV). Refer to the <i>IMDV-2CM Linkage Adjustment</i> Technical Bulletin found at https://www.follettice.com/tech-support-and-resources/products/ice-manager-diverter-valve-imdv-2cm - Check ice level set-points. Be sure they match factory settings or drop-in requirements shown in the Ice level set point section of this manual on page 18 - ITT from IM to IMDV too short (not 10 foot minimum required length)

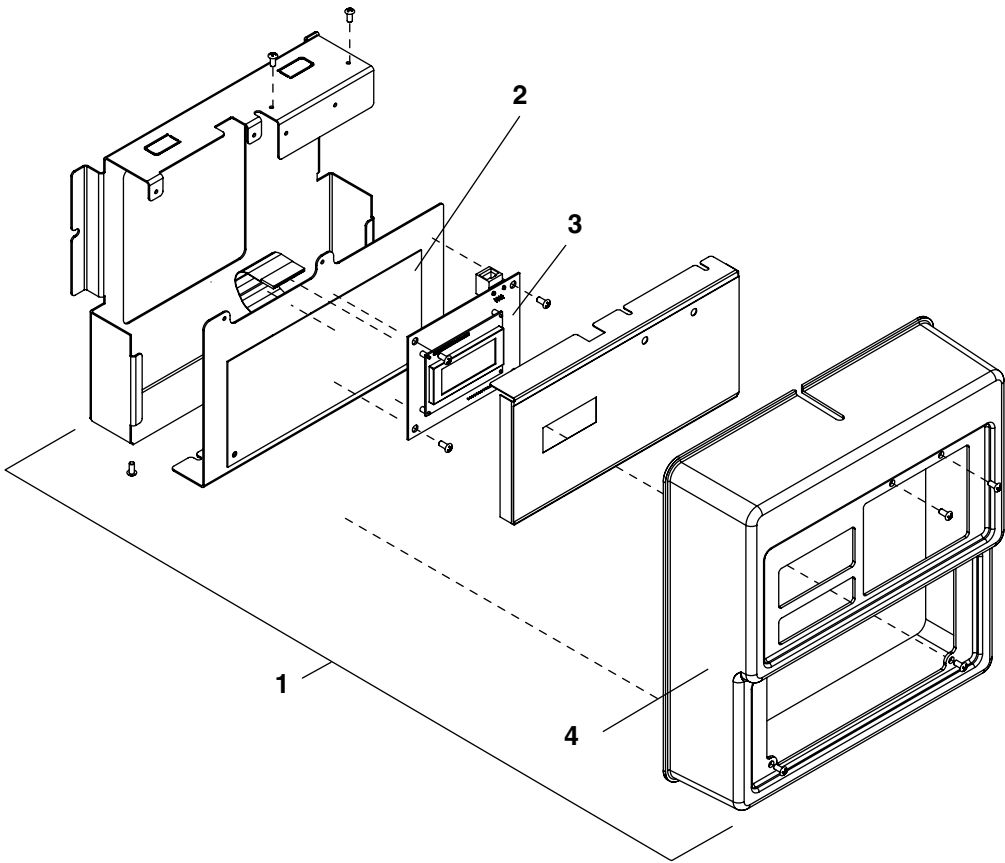
Service Parts

Diverter valve module



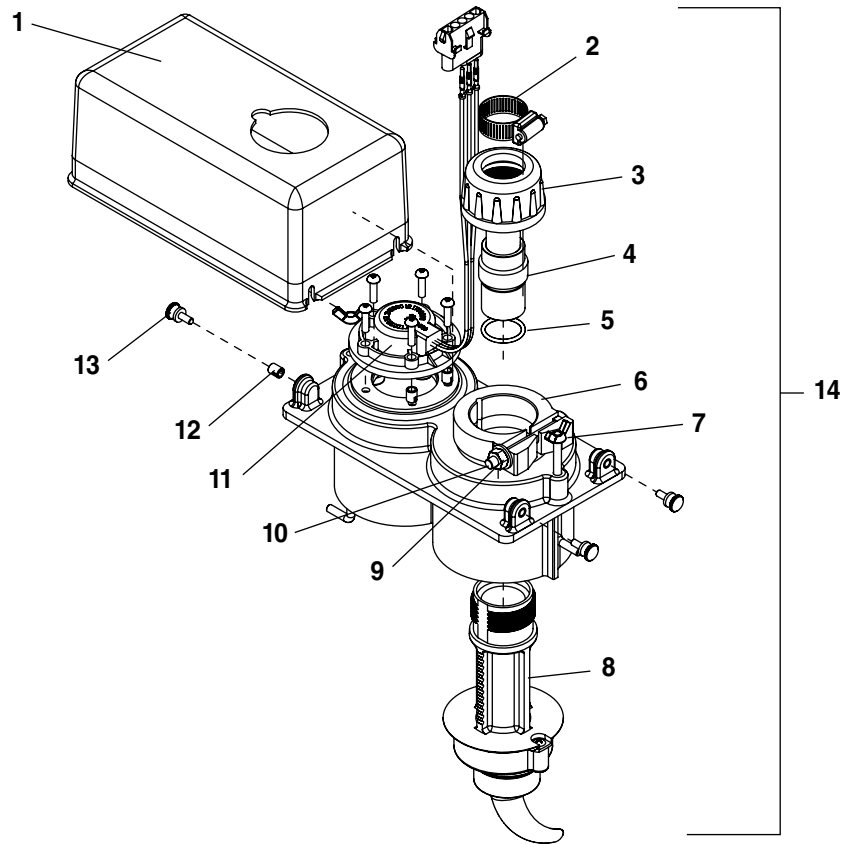
Reference #	Description	Part #
1	Clamp	500378
2	Pin, coupling, retainer	01550037
3	Gearmotor	01583087
4	Grommet	01555606
5	Main control board	00173955
6	Coupling, ice tube	01550052
Not shown	Switch, magnetic (1)	00168096
Not shown	Pan, diverter drain	01550029
Not shown	O-ring Kit, ice tube coupling (4)	01550045
Not shown	Insulation, ice tube coupling	01550060
Not shown	Insulation, diverter body	01550078
Not shown	Cable, Comm, IMDV-2CM board interface	01551365
Not shown	Power cord	01555622
Not shown	Elbow, drain	01555630
Not shown	Hose, drain (sold per foot)	501965
Not shown	O-ring, Teflon	01567981
Not shown	Gasket kit, diverter body	01567973

Control panel



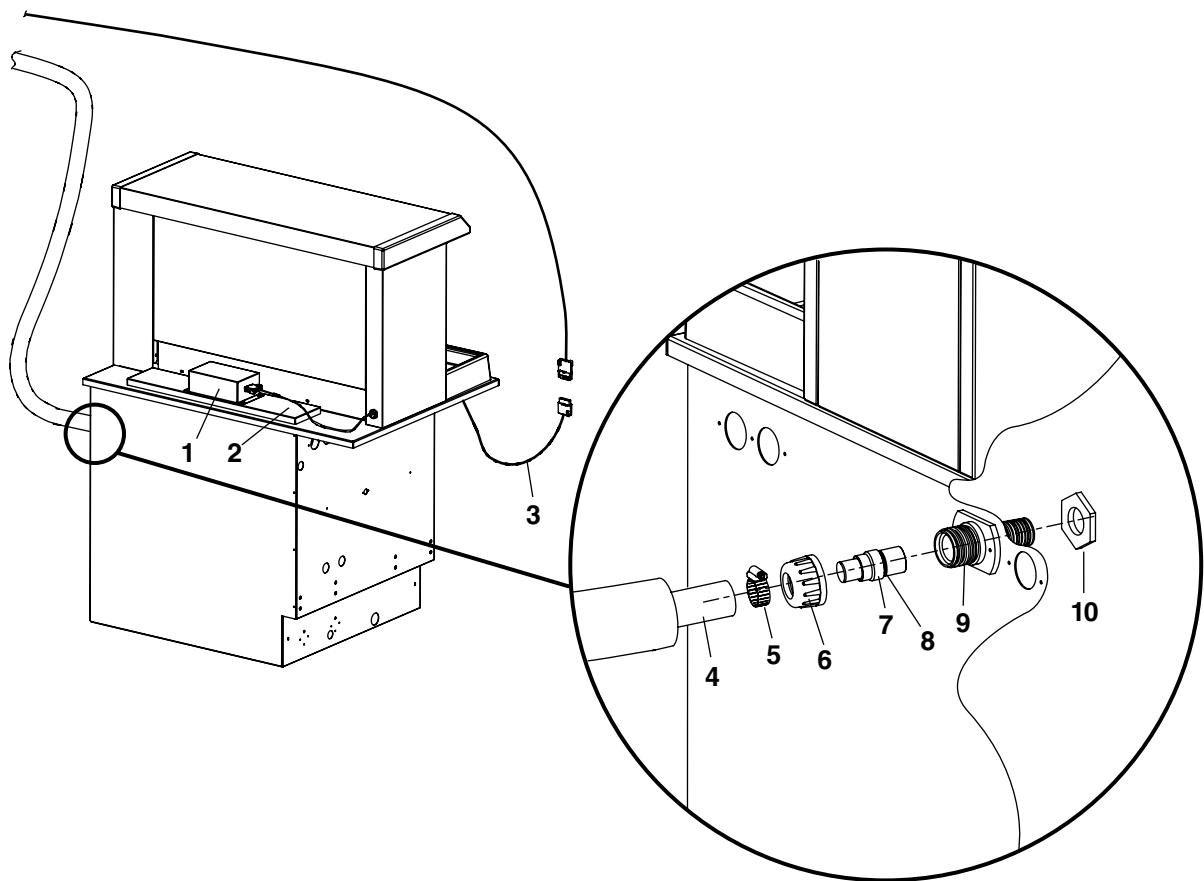
Reference #	Description	Part #
1	Control module (includes gray control cable)	00159350
2	Membrane switch	00172627
3	Control panel board	00172684
4	Control panel cover	00175133

Sensor distribution unit



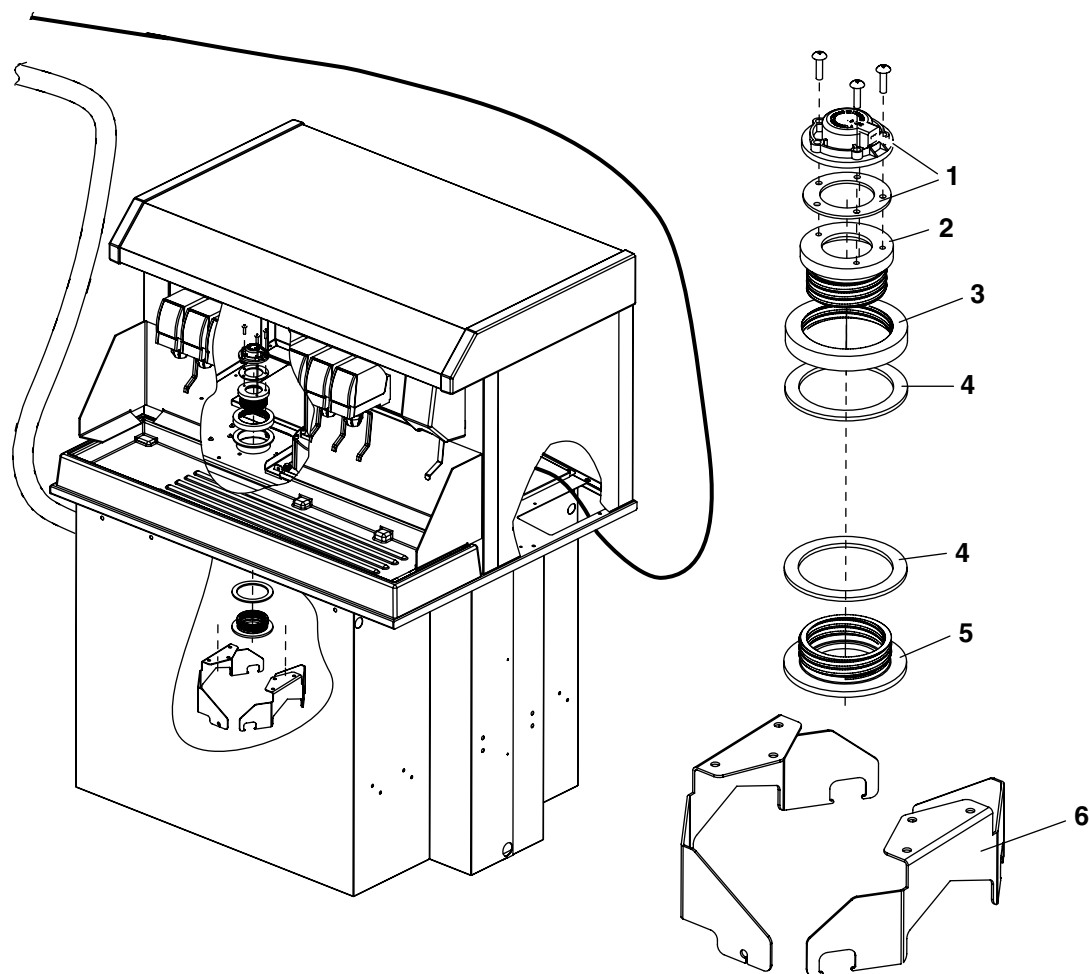
Reference #	Description	Part #
1	Cover	01555648
2	Clamp	500378
3	Nut	01303189
4	Coupling	00175141
5	O-ring	01555655
6	Clamp, positioning (includes nut and bolt)	00182451
7	Nut, wing and rod	00182469
8	Distribution unit	00146803
9	Nut, hex stainless steel 1/4-20	01555663
10	Carriage screw, 1/4-20 2/5" long	01555671
11	Sensor, ultrasonic	00175174
12	Insert	01555689
13	Thumb screw	01555697
14	Sensor distribution assembly	00149377

Follett Vision™ VU155 Ice Manager kit



Reference #	Description	Part #
1	Cover, 155 sensor	01555705
2	Lid, rear, 155 sensor	01555713
3	Vision sensor cable	01555721
4	Polywire tube, insulated	see page 43
5	Clamp, hose	500378
6	Nut	01303189
7	Coupling (includes o-ring)	00175141
8	O-ring	01555655
9	Bulkhead fitting	01555747
10	Nut, bulkhead fitting	01555754

Follett Vision™ VU300 Ice Manager kit



Reference #	Description	Part #
1	Sensor, ultrasonic, service	00175174
2	Tube, sensor mount	01555762
3	Locking ring, coupling	00171371
4	Gasket, coupling	01303080
5	Coupling, sensor mount	01555770
6	Bracket, ice tube	00175208

Cables

Ice Manager Control Panel To IMDV-2CM		
Not shown	Cable (gray), control panel to diverter valve, 30' (9m)	01555788

IMDV2-CM to Ice Receptacle/Dispenser		
Not shown	Cable, diverter valve lane sensor, 10' (3m)	01555796
Not shown	Cable, diverter valve lane sensor, 25' (7.6m)	01555804
Not shown	Cable, diverter valve lane sensor, 50' (15.2m)	01555812
Not shown	Cable, diverter valve lane sensor, 75' (22.9m)	01555820

Ice Machine Docking Station to IMDV-2CM Module		
Not shown	Cable (blue), Horizon to diverter valve, 20' (6m)	01555838

Ice Machine Control Board to Ice Machine Docking Station		
Not shown	Cable, RS485 Comm, IMDV-2CM board interface	01551365

Ice Transport Tube		
Not shown	Ice transport tube, 10'*	01560549
Not shown	Ice transport tube, 35'*	01560556
Not shown	Ice transport tube, 80'*	01560564
Not shown	Ice transport tube, by the foot*	00174896

* All ice transport tube includes insulation, shipped loose.

Ice Machine Retrofit Kits/Legacy Components

Reference #	Description	Part #
Not shown	Vision 155 Retrofit Kit	00185165
Not shown	Vision 300 Retrofit Kit	00185173
Not shown	Cable, Horizon board interface	01555846
Not shown	Gearmotor assembly	00175166

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