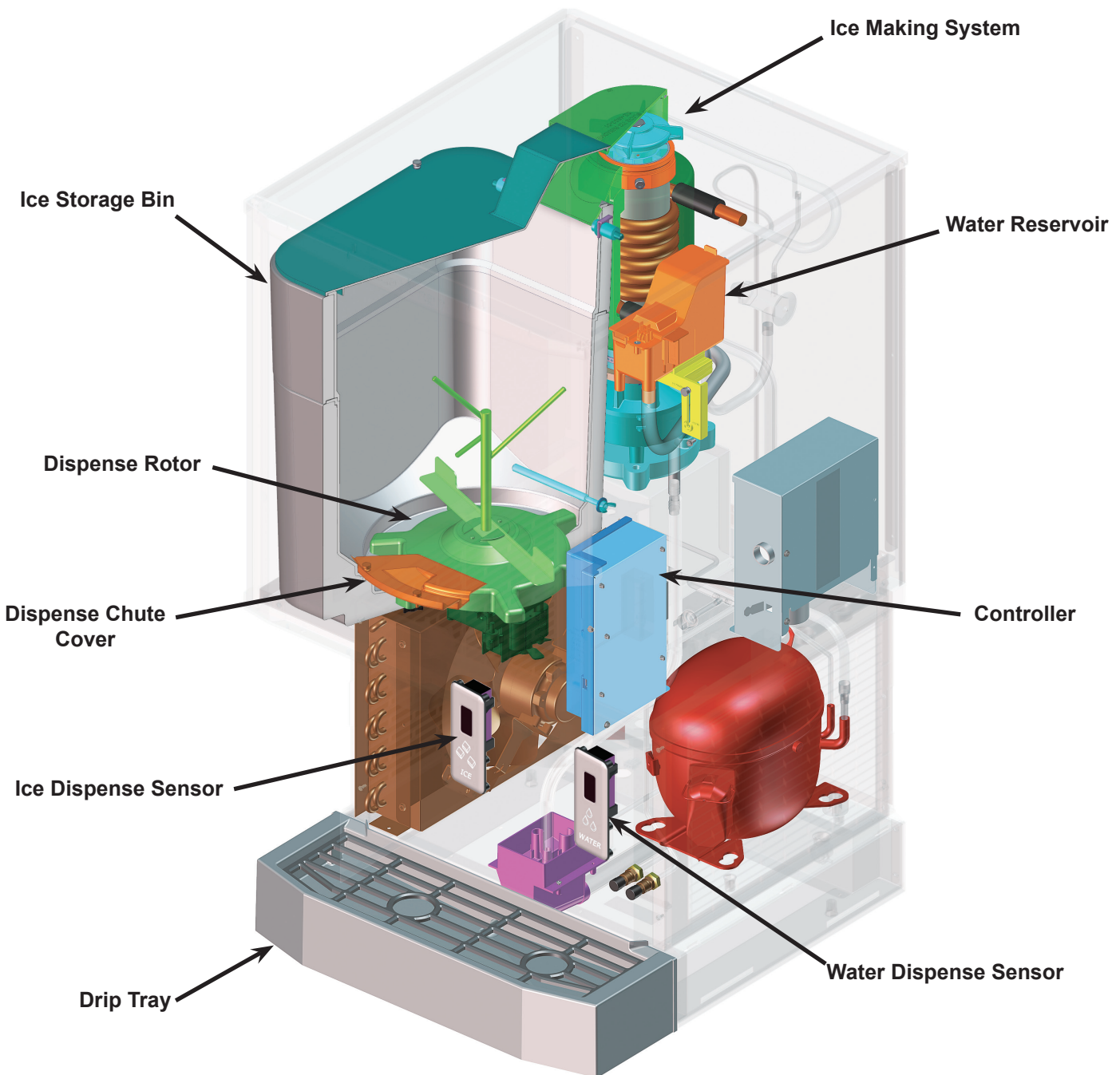


Meridian Ice Maker-Dispenser HID Technical Review



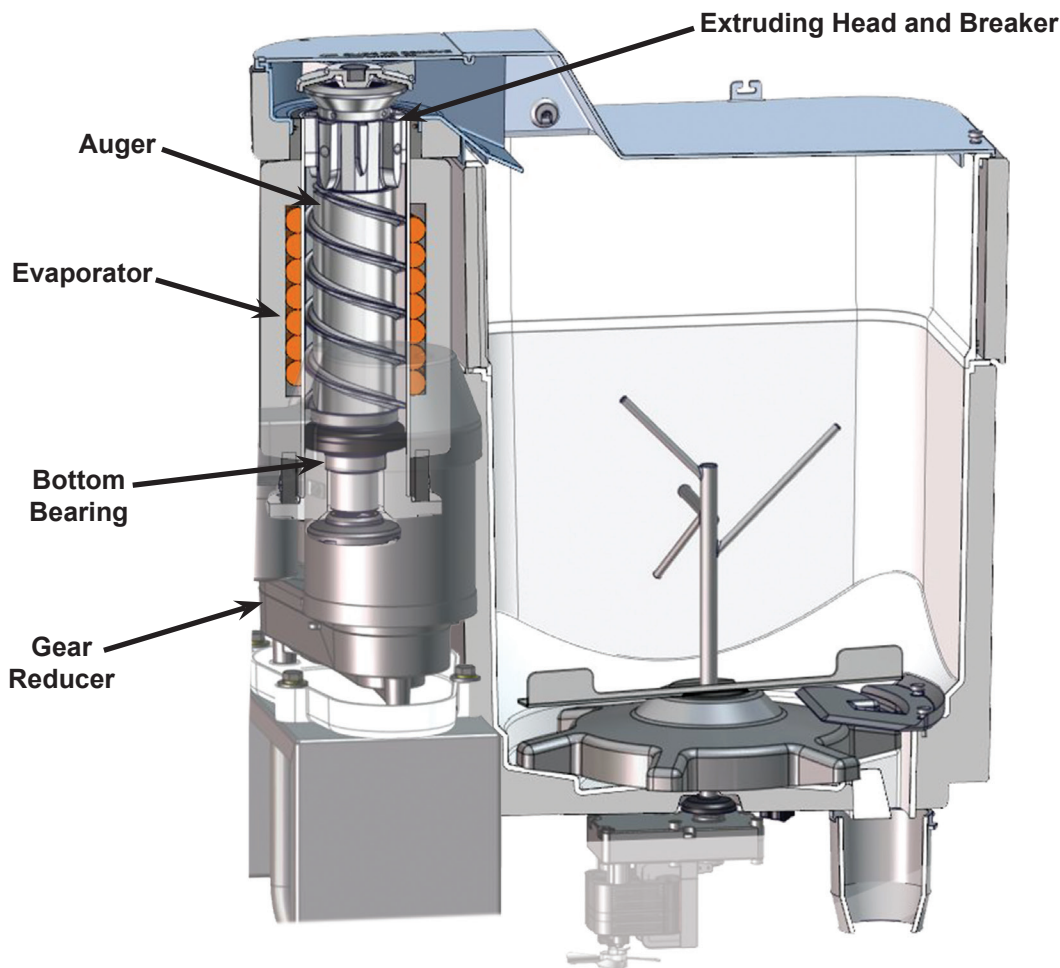
Ice Making System

The ice making system is the continuous flow type. The main components of this system are:

- Refrigeration condensing unit
- Stainless steel, copper-wrapped evaporator.
- Stainless steel auger inside the evaporator
- Stainless steel extruding head and bearing retainer at the top of the evaporator
- Stainless steel, solid lube bearings top and bottom
- One/sixth HP auger drive motor and gear reducer

Ice is made whenever the control system detects an ice storage bin that is not full. The R-404A condensing unit and auger drive motor switch on. The auger lifts soft, wet ice to the extruding head, where it is forced thru eight slots, compressing it into a harder, usable stick-like form. Above the slots the head has a wedge, the extruded ice sticks are forced against the wedge causing them to break off into short lengths. An ice sweep moves the finished ice to a chute.

When ice begins to flow out of the top of the extruding head, water begins to flow into the bottom of the evaporator from the water reservoir. Water refills the reservoir when the float valve bulb drops. Ice is then continuously flowing into the ice storage bin.



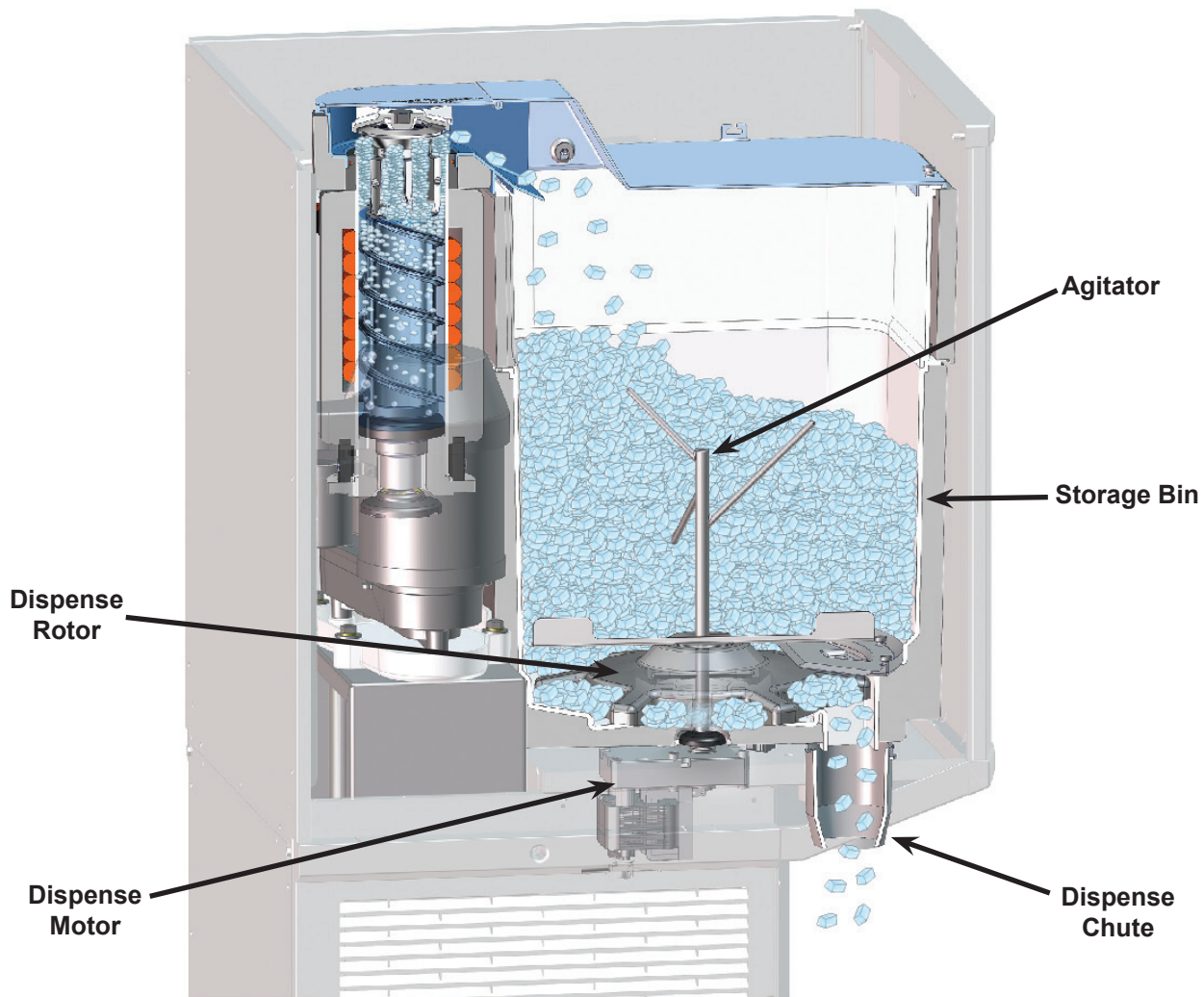
Ice Dispensing System

The main components of the dispensing system are:

- Ice storage bin
- Ice dispense rotor
- Ice dispense agitator
- Ice dispense motor

When the control system detects a container in front of the ice dispense sensor, the controller connects power to the ice dispenser motor.

The ice dispense motor then rotates the dispense rotor and dispense agitator. Together they force ice to the outlet at the bottom front of the ice storage bin. Ice falls by gravity into the user's container until either the user removes it or until the control system times out. Ice is restricted from falling directly out of the bin by the ice dispense chute cover, located above the chute and dispense rotor.



Control System

All models use the same control system.

The electronic controller operates the compressor (with fan motor), auger drive motor, dispense drive motor and inlet water solenoid valve. It monitors:

- Reservoir water availability. It must have conductivity greater than 10 microSiemens/cm.
- Storage bin ice level by infrared photo-electric eyes
- Call for ice dispense
- Call for water dispense
- Refrigeration pressure
- Dispense enable / disable
- Auger motor speed
- Auger motor rotation

Many of these are used to insure that the machine does not damaged during use. For example, it is critical that it not attempt to make ice without water, so if the water sensor is dry, the machine will not make ice.

Switches - there are four switches:

- **Dispense water** - to test water dispensing
- **Dispense ice** - to test ice dispensing
- **On/Off** - to switch the machine on or off. Holding it in to shut off will stop ice making immediately.
- **Clean** - to engage the clean mode

Indicators - there are nine LEDs:

- **Power** - Glows when controller has power
- **Status** - Glows when in ice making mode
- **Time to Clean** - Glows when it is time to clean the machine
- **Water Dispense Sensed** - glows when the water dispense sensor has been triggered*
- **Ice Dispensed Sensed** - glows when the ice dispense sensor has been triggered*
- **Water Dispense** - glows when the inlet water solenoid valve has been powered*
- **Ice Dispense** - glows when the ice dispense motor has been powered*
- **Auger** - glows when the auger motor is on
- **Compressor** - glows when the compressor is on

* If blinking the water or ice dispensing time limit has been met.



Water and Drain System

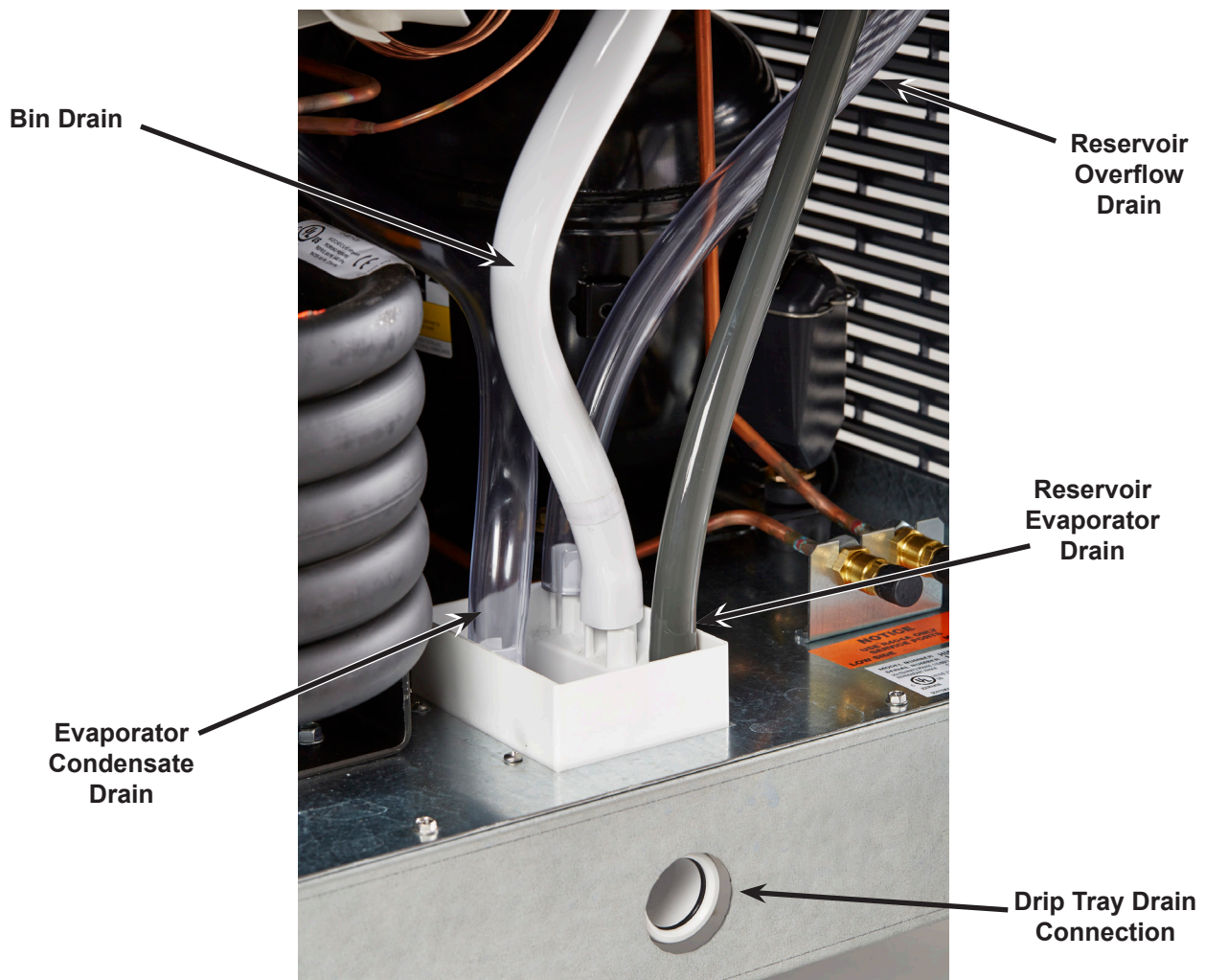
The main components of the water system are:

- Water reservoir and float valve
- Water dispense solenoid valve
- Ice storage bin drain
- Reservoir overflow drain hose
- Evaporator/ gear reducer condensate pan
- Drip tray
- Central drain system basin and drain hose manifold

In the Off Mode water fills the reservoir until the float valve bulb lifts enough to shut it off. When ice making begins, that valve reopens as needed to keep water in the reservoir.

The water dispense solenoid valve is activated when the control system detects a container in front of the water dispense sensor. It remains activated until the user moves the container away or the control times out.

There are several drains in the system. The main drain is for the drip tray. Melted ice and spilled water flow out the back of the drip tray to the central basin; from there the water flows to the back of the cabinet to the drain fitting. Additionally any meltage, condensate or overflow water also drains to the drain basin, which has 3 hoses draining to it: Bin drain hose, reservoir overflow hose and gear reducer condensate drain hose.



Diagnostic Testing

Code or Light Action	Probable Cause	Suggested Action
<i>0</i>	Unit manually switched off	If desired, switch unit on.
<i>F</i>	Freeze mode	None, unit is making ice.
<i>b</i>	Bin sensors sense bin full	Check if bin is full.
<i>E</i>	Corrupted memory	Replace controller
<i>C</i>	Clean mode	Continue clean mode
<i>d</i>	Test mode	None, allow unit to finish test mode.
<i>1</i>	Auger motor rotated auger backwards.	Replace auger motor. Check water seal area for leaks, replace seal if leaking.
<i>2</i>	Auger motor stalled or operating slowly	Clean ice making system and retry.
<i>3</i>	No water in reservoir	Restore water. If there is water, is it too pure? Are sensor wires connected?
<i>4</i>	High pressure cut out open	Check fan motor on air cooled or water supply on water cooled.
Water dispense sensed light blinking	Container positioned in front of water dispense sensor for more than 24 seconds	Normal, controller has a time limit for dispensing. Remove container.
Water dispense light blinking		
Ice dispense sensed light blinking		
Ice dispense light blinking		
Status light is on	Unit is in ice making mode	Normal, may not be making ice if bin is full
Time to Clean light is on	Unit has not been cleaned for at least 6 months	Clean unit
Water Dispensed Sensed light is on	A container is in front of the sensor	Normal during water dispensing
Ice Dispensed Sensed light is on	A container is in front of the sensor	Normal during ice dispensing
Water Dispense light is on	Water solenoid has been activated	Normal during water dispensing
Ice Dispense light is on	Bin drive motor has been activated	Normal during ice dispensing
Auger light is on	Auger motor is active	Normal when making ice
Compressor light is on	Compressor is active	Normal when making ice

Codes

The controller has a code display, the codes are:

- O* - - - for off
- F* - - - for ice making
- b* - - - for bin full
- E* - - - for controller error
- C* - - - for clean mode
- d* - - - for test mode
- 1* - - - for auger rotation direction wrong
- 2* - - - for auger speed too slow
- 3* - - - for no water sensed
- 4* - - - for high refrigerant pressure

If a number code is triggered, the controller will stop ice making. A blinking code means it is a temporary condition. Example: A blinking *F* occurs during the ice making restart process; it stops blinking when the compressor starts.

The controller will automatically restart from a water interruption or power interruption or when a refrigerant pressure switch has automatically reset.

To reset the control when it has been manually locked out, Push and release the On/Off button to shut it Off and then Push and release it again to switch it On.

Note: The compressor will not restart for 2 minutes from the time it was shut off.



SCOTSMAN ICE SYSTEMS

775 Corporate Woods Parkway

Vernon Hills, IL 60061

800-726-8762

www.scotsman-ice.com