

DCE33 Ice Machine

Technical Training

- Gravity Drain or
- Drain Pump models
- Reversible Door
- Air in and out the front



- Water
  - 1/4" OD copper tubing
- Power
  - 115/60/1 cord connected
- Drain
  - Gravity or pump
- Space
  - 15 & 1/4" wide

- Air Cooled
  - Route drain tubing
  - Route water supply

Water  
Connection



- Gravity Drain installation is critical
  - Connect internally to bin drain
  - Route flexible tubing out the back
  - Route with downward pitch to drain receptacle - no dips, no upward slopes, no traps.
    - Use rigid tubing if possible
    - Vent the drain tubing
    - Must have air-gap at end

- Magnetic drive drain pump
- Tubing included
  - Do NOT kink!
- Can pump up to one story
- Field convertible





Water Cannot Collect in a Downward Sloping Straight Tube



Water CAN collect in a Downward Sloping Flexible Tube

**Trapped water restricts  
draining!**

- Remove door
- Switch hinges top to bottom, left to right
- Return door to cabinet



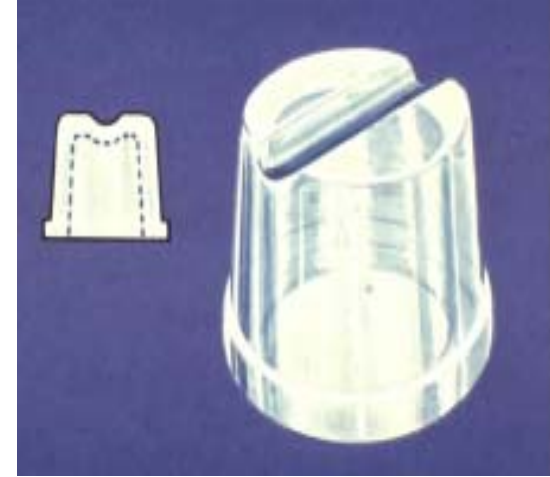


- Check installation
- Remove control box cover
- Rotate timer CW to Harvest
- Rotate bin control to “Operating Range”
- After second batch, check cube size
  - Adjust cube size if needed



Timer in  
Harvest  
Position





Cubes too large or too small:

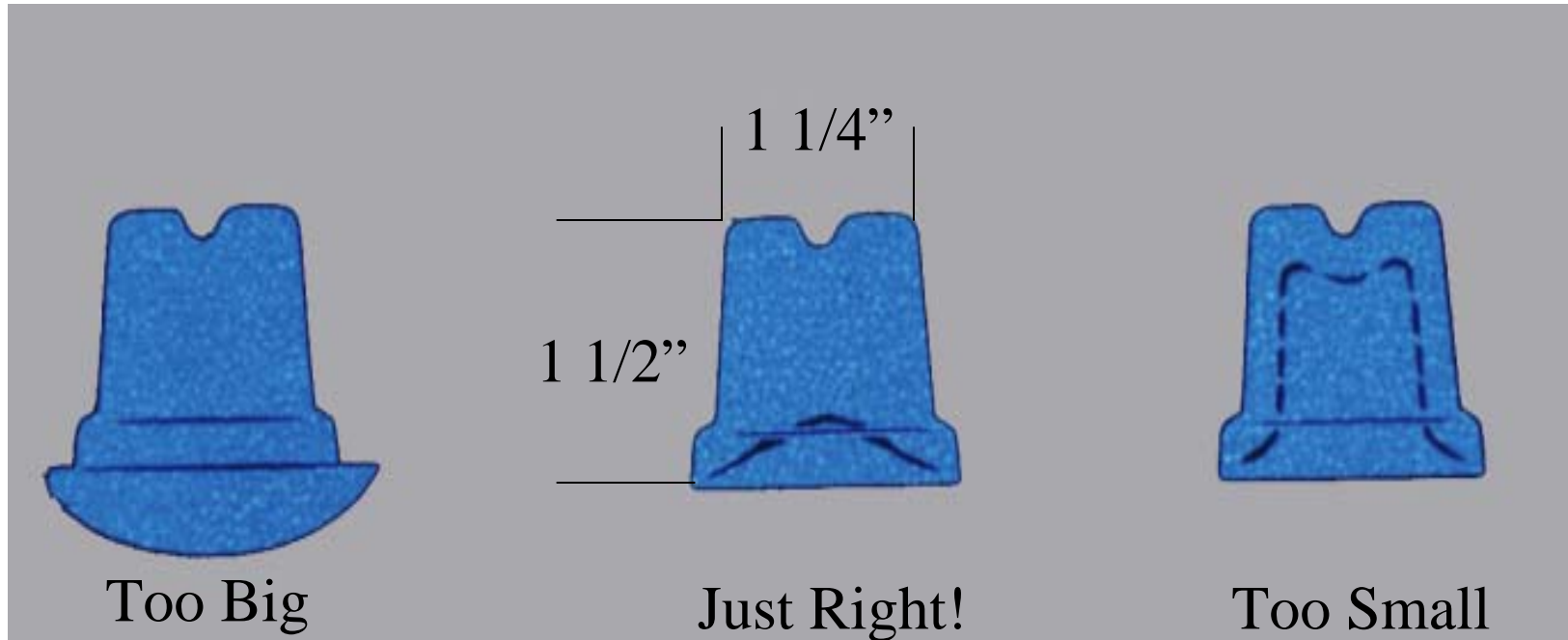
Adjust cube size control.

CW makes cubes larger

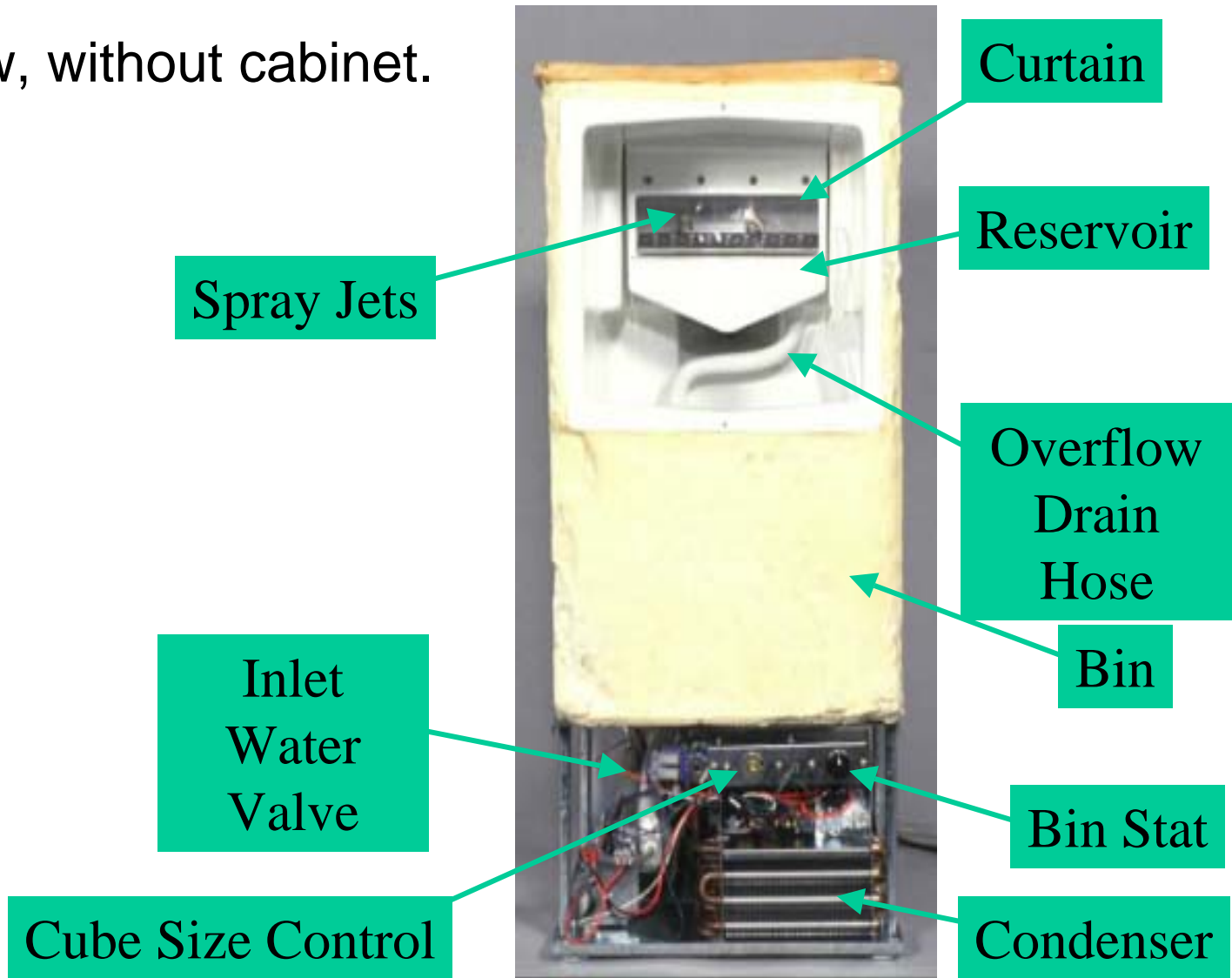
CCW makes cubes smaller



# Scotsman® Cube Size: Only 1 Correct Size



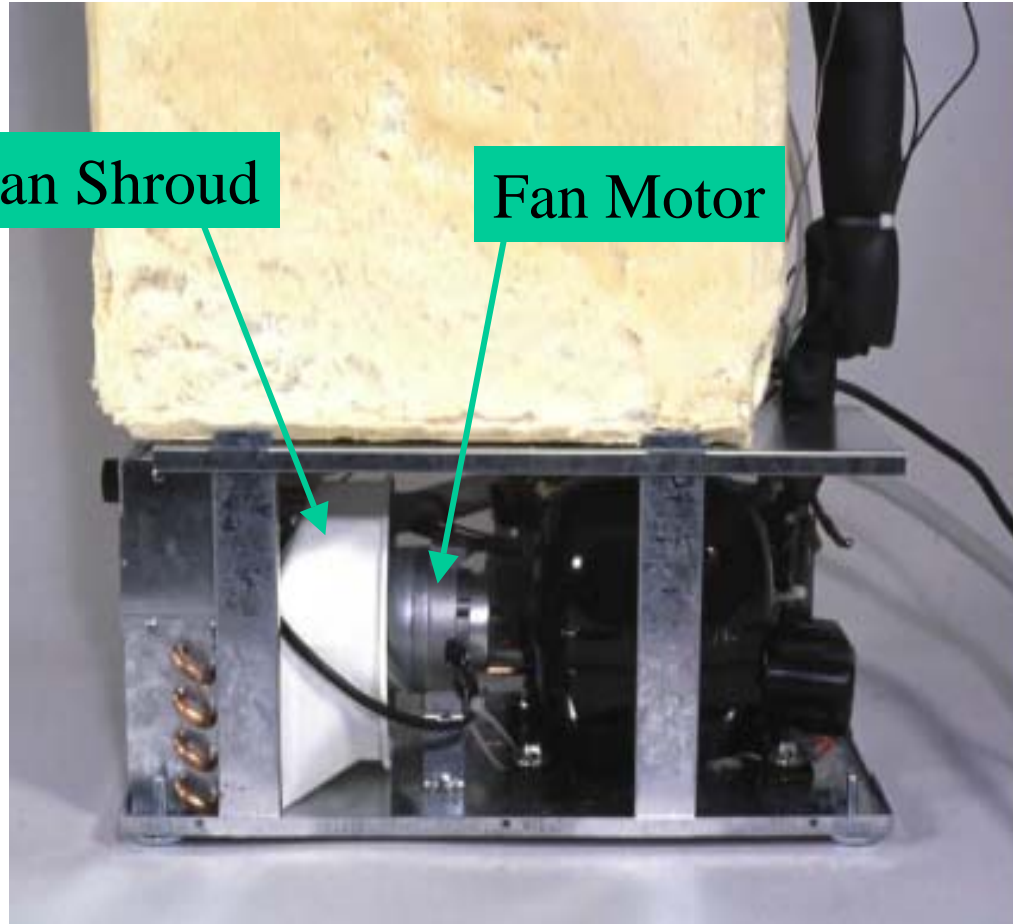
Front View, without cabinet.

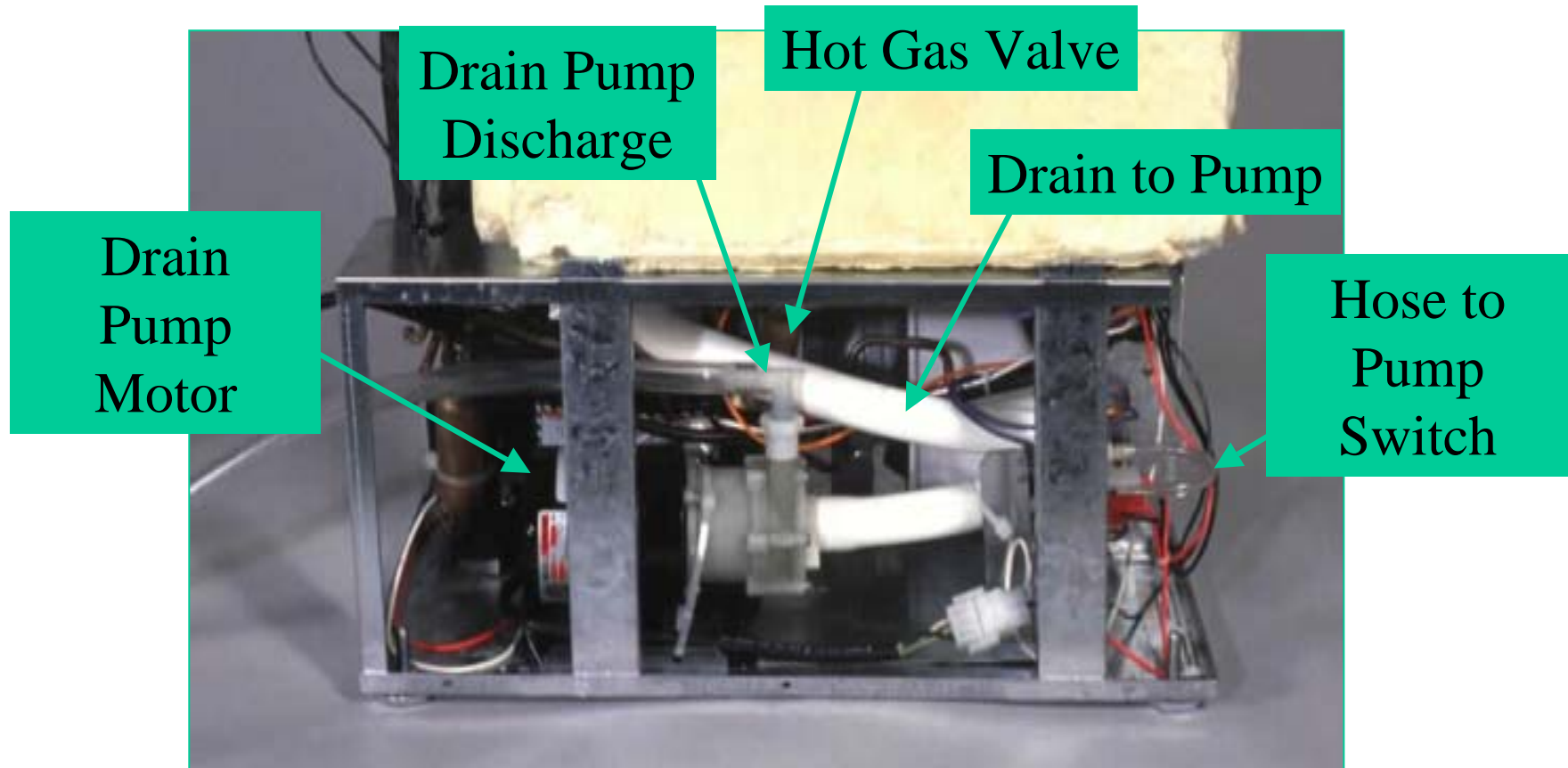




Condenser Fan Shroud

Fan Motor





Suction Line/Accumulator



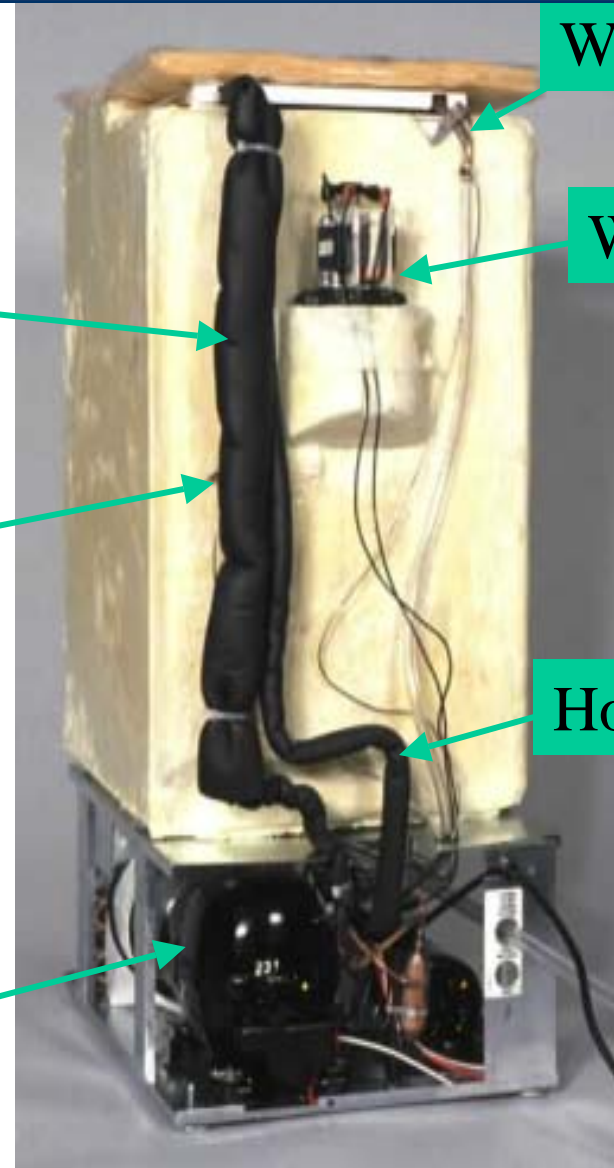
Bin Thermostat Capillary Tube

Compressor

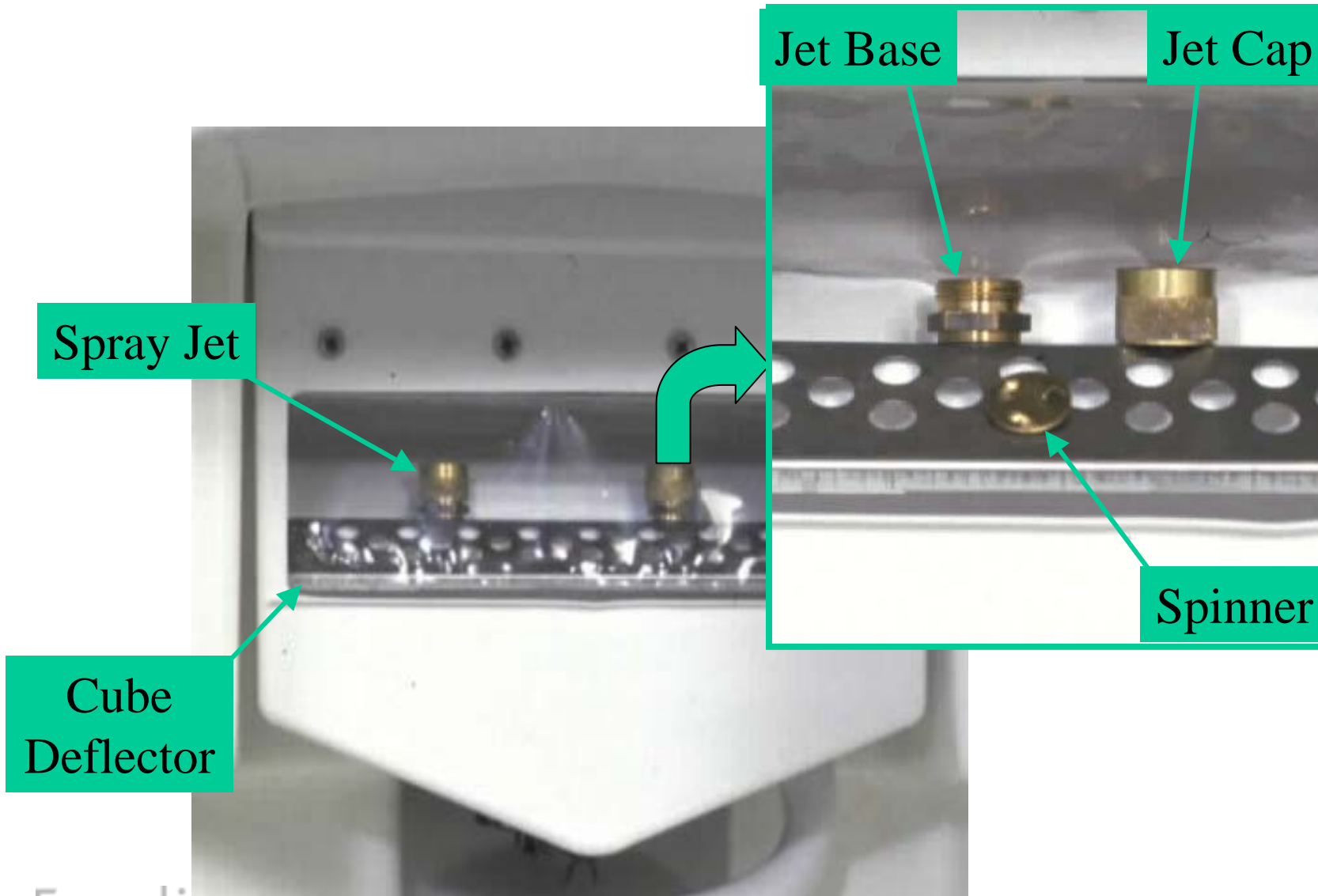
Water Fill Tube

Water Pump

Hot Gas Tube

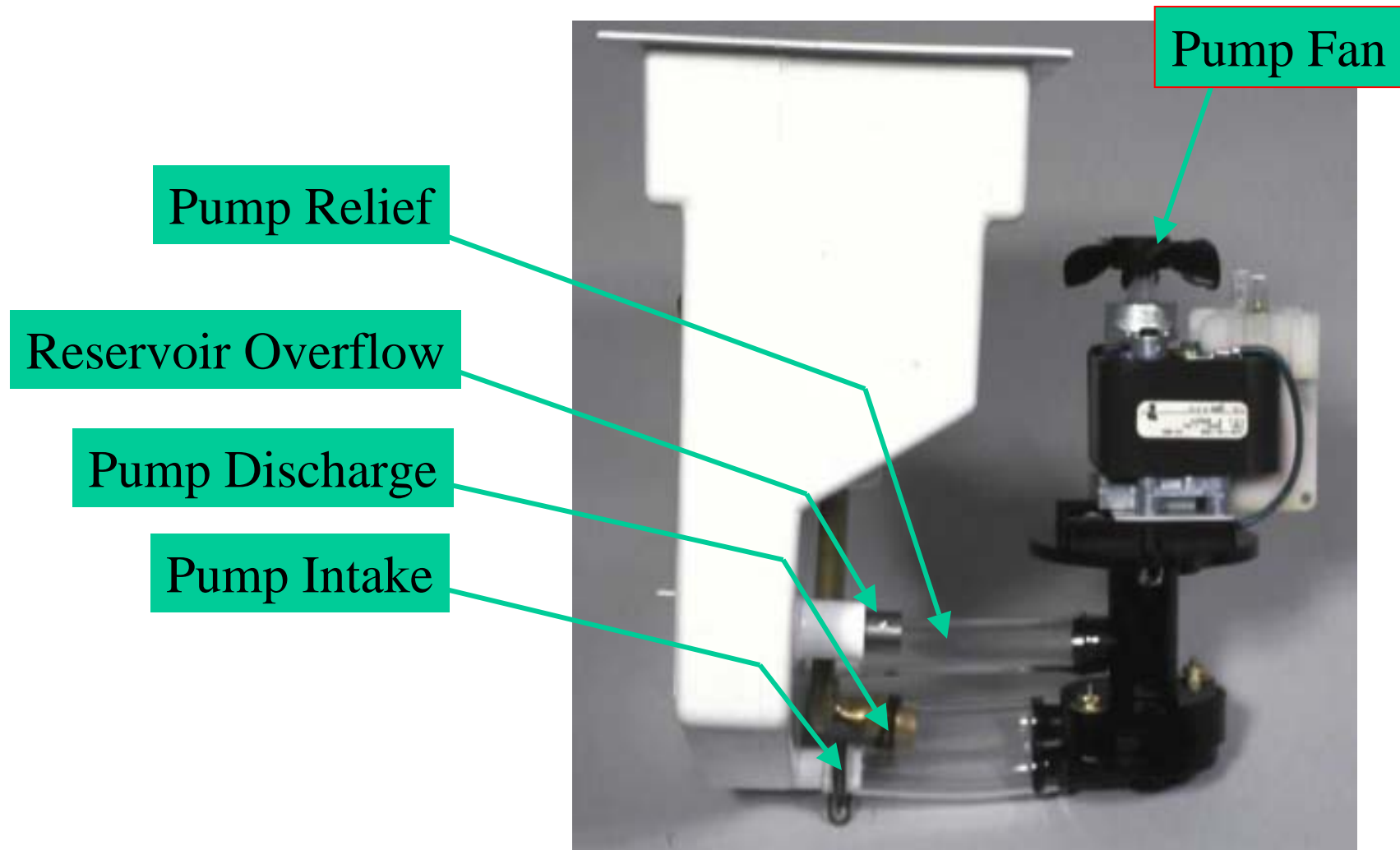








- Clear, thin plastic sheet
  - Flip up to access jets
- Hangs from plastic frame
- Frame is attached with 4 screws
- Must not be curled or torn

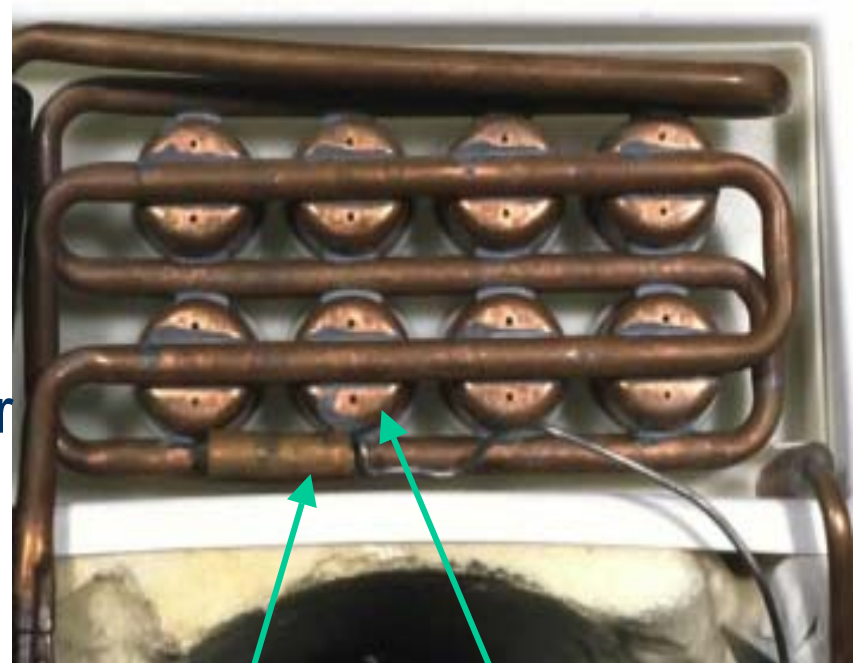


- Water flows in during harvest
- Harvest cycle is timed
  - Pump is off
  - Fan is off
  - Compressor is ON
  - Hot gas and Water valves are ON
- When the timer cam pushes in the switch button, the freeze cycle starts.

- At the beginning of freeze
  - Fan is ON
  - Pump is ON
  - Compressor is ON
  - Timer is OFF
  - Hot gas and water valves are OFF

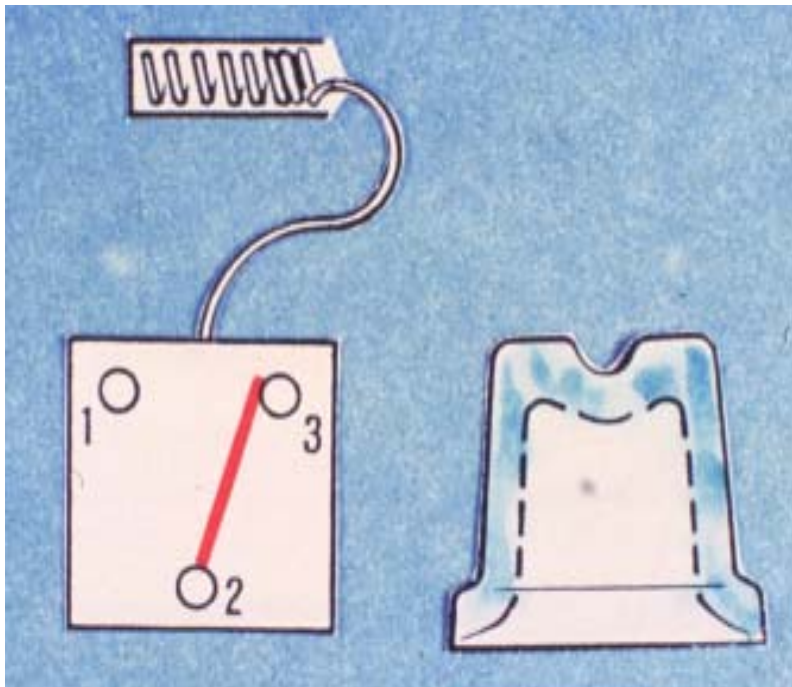
- Reverse acting thermostat
  - Senses evaporator temperature
  - Closes upon temperature fall
  - Connects power to timer motor
  - Timer cam rotates to finish the cycle

Top View of Evaporator

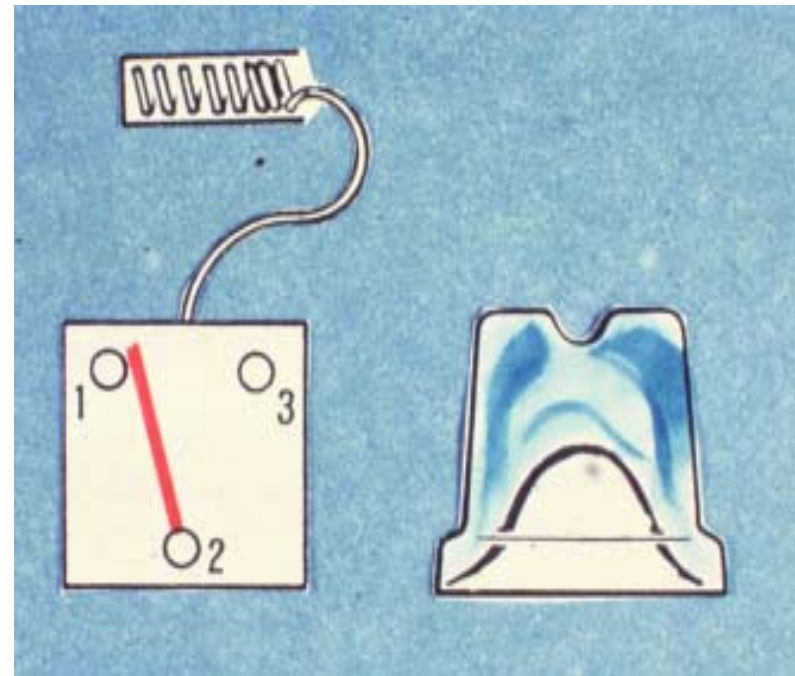


Cube Size Bulb

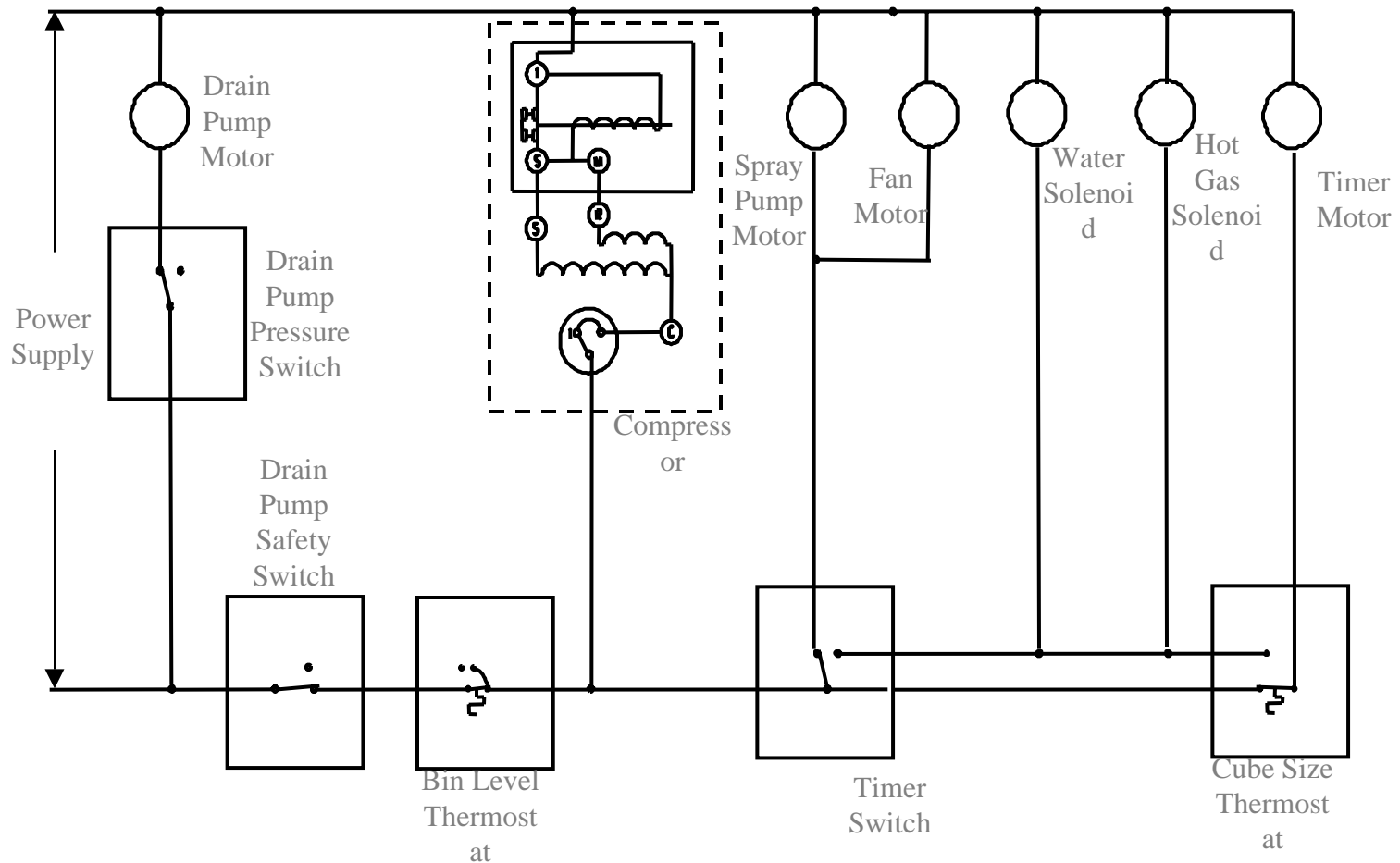
Cube Molds



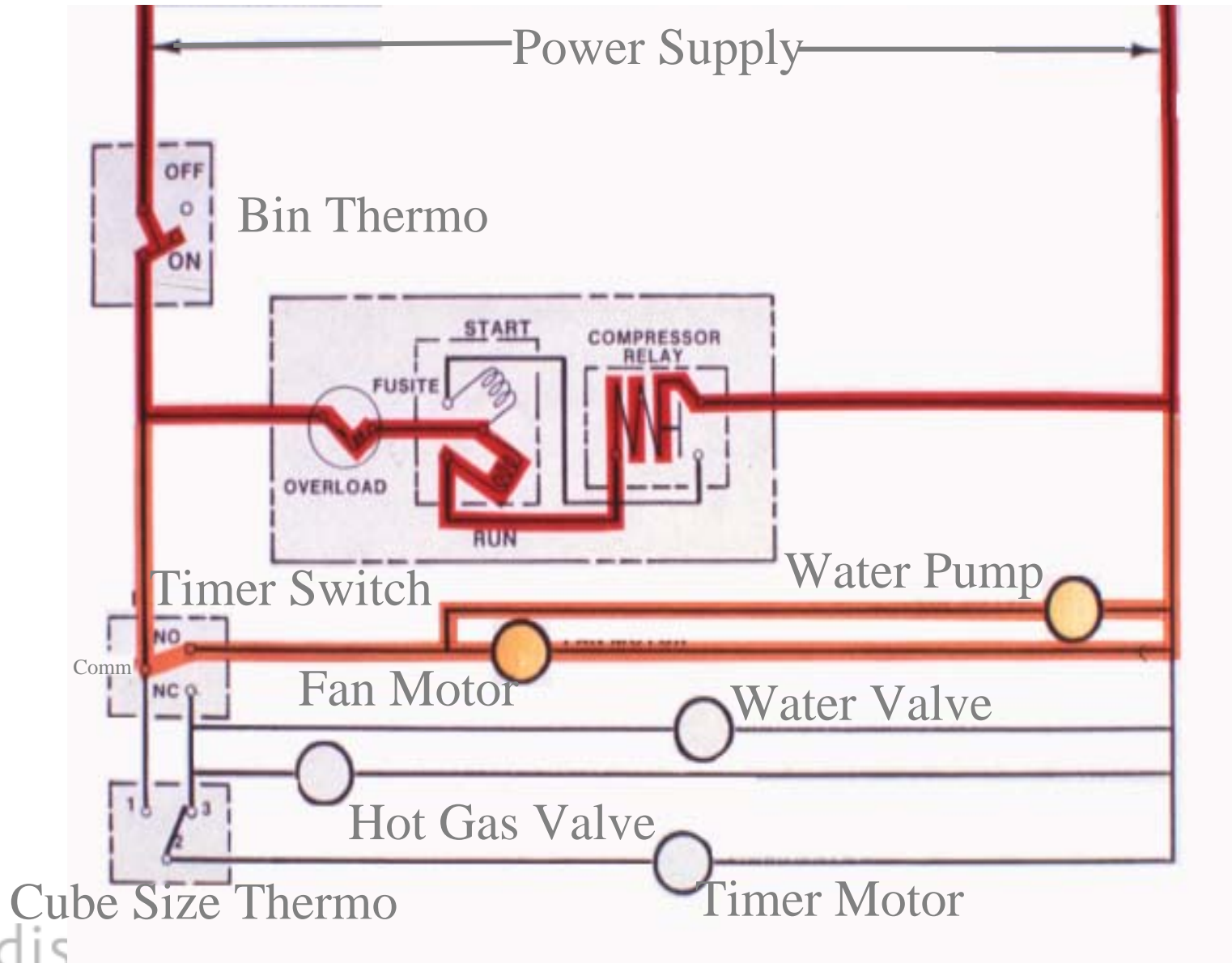
Beginning Freeze

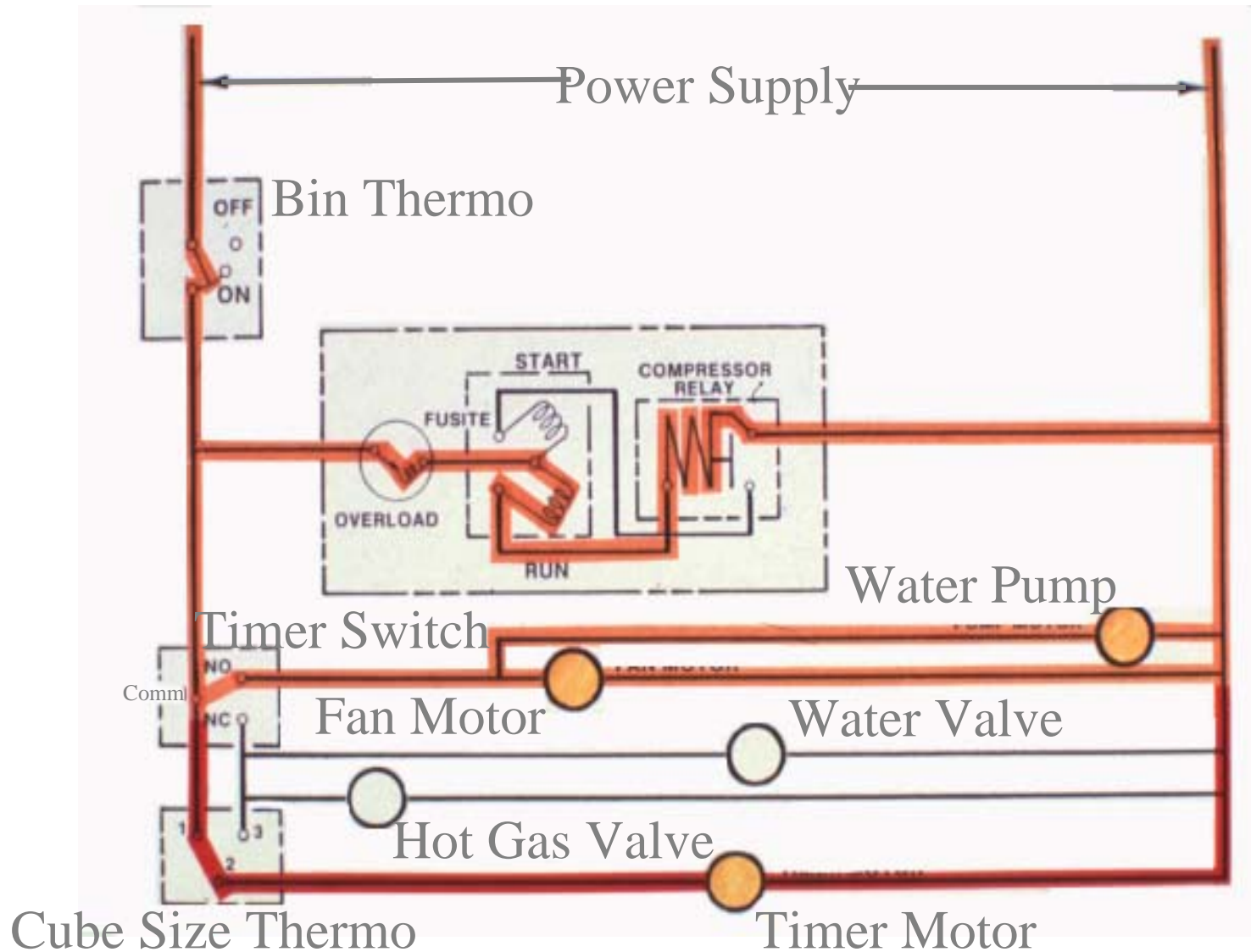


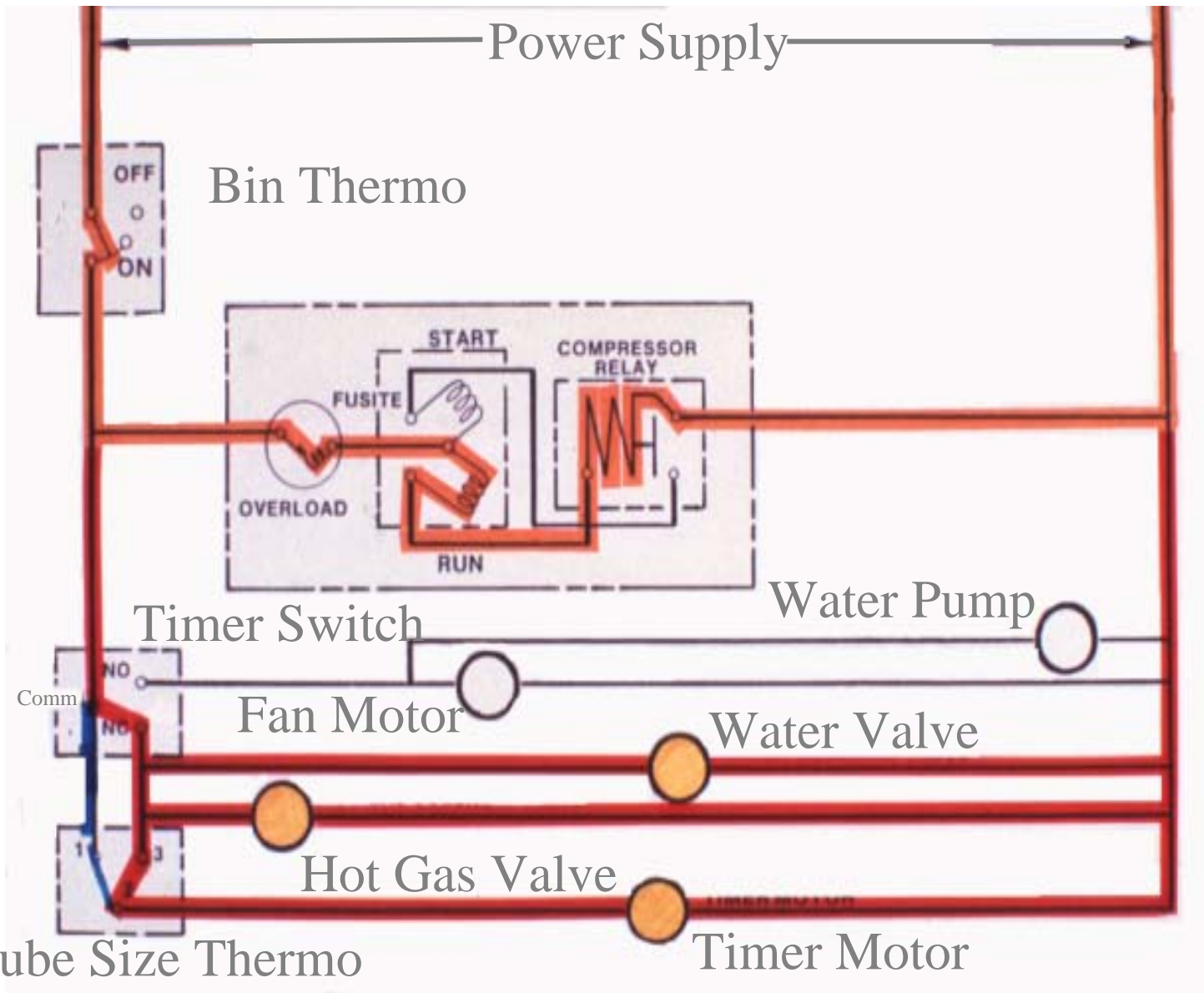
Timed Freeze



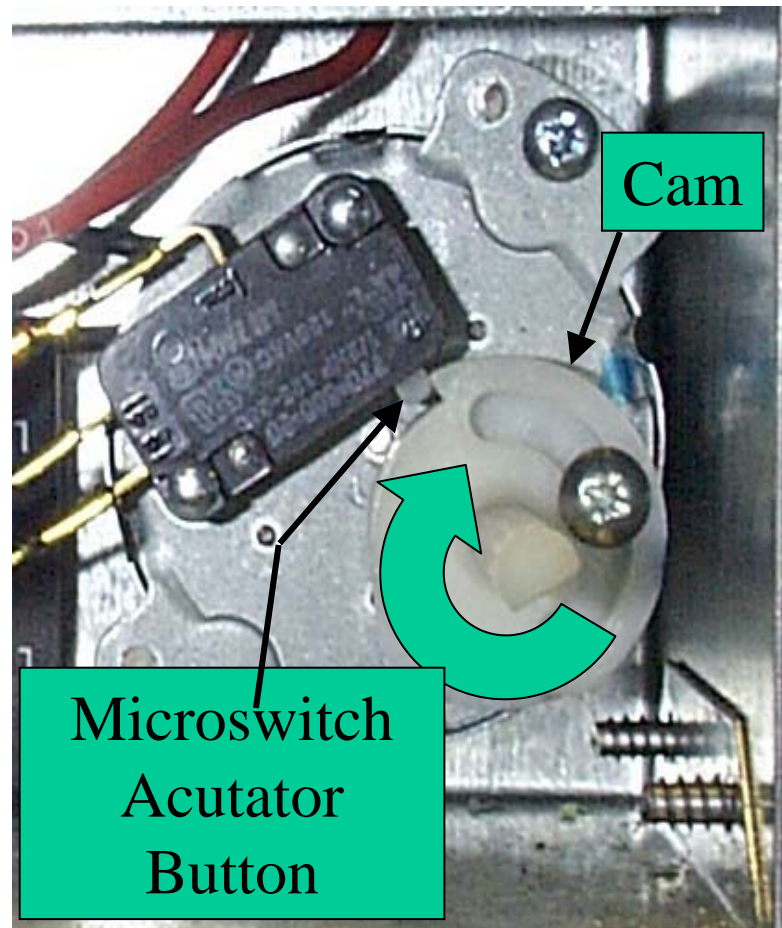




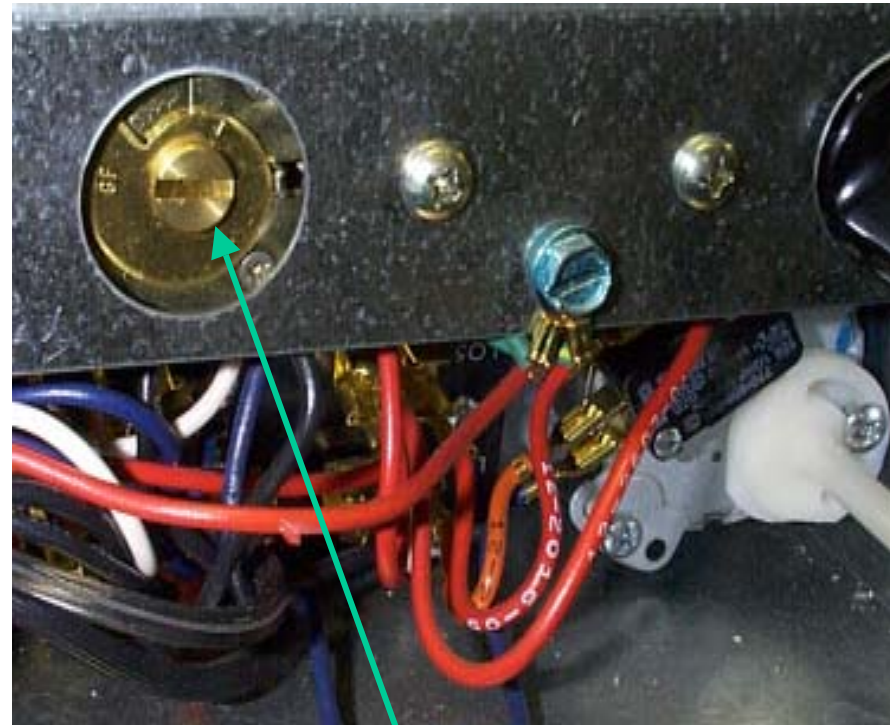




- Timer Controls end of Freeze cycle and Harvest cycle
- Shown in Harvest Position
- Clockwise ONLY!



- Cube Size  
Thermostat controls  
timer motor
- Rotate Adjustment  
Screw Clockwise to  
make LARGER  
cubes
  - Delays start of timer  
motor



Cube Size Adjustment

- Bin Thermostat



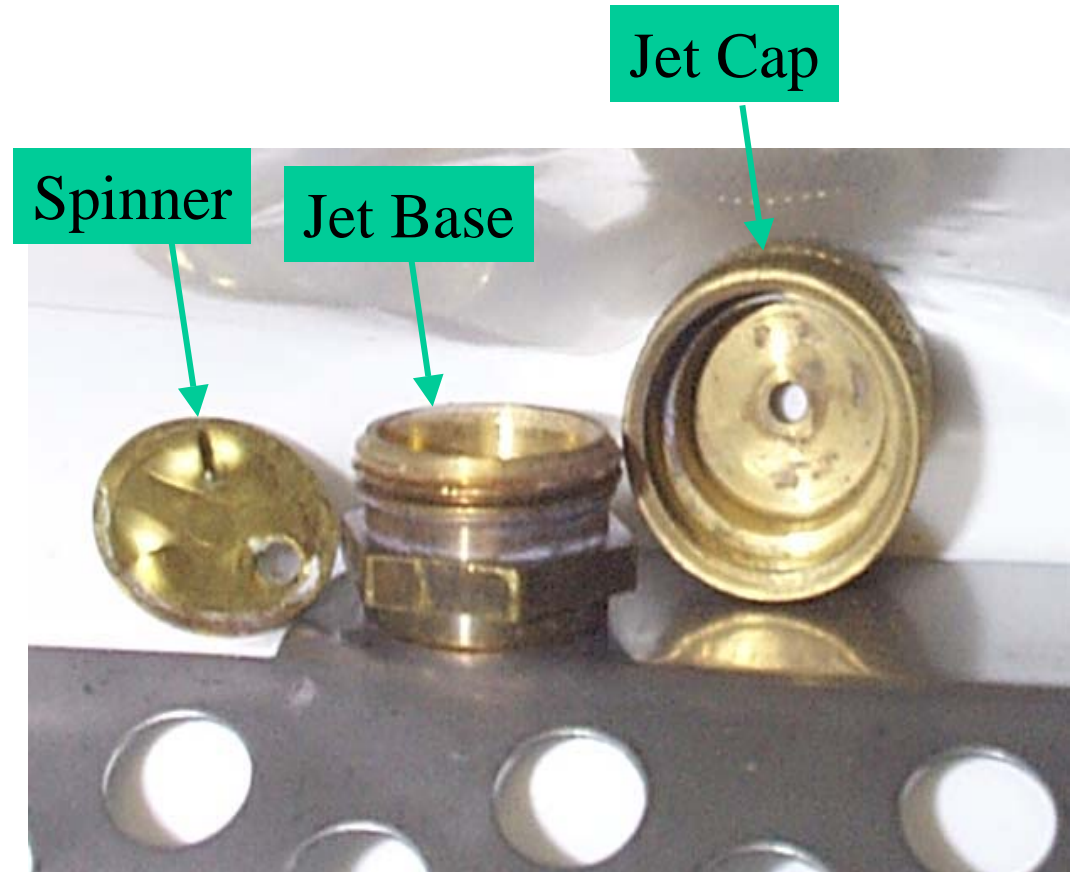
- Frequency depends upon conditions
- Water System Cleaning
  - Spray Jets
  - Curtain Inspection
- Water System & Bin Sanitizing
- Air Cooled Condenser Cleaning

- Switch Unit OFF
- Discard old ice
- Pour 4 ounces of Scotsman Ice Machine Cleaner into Reservoir
- Switch Unit ON
- Operate for 2 hours
- Rinse bin with hot water





- All Orifices must be open
- Remove jet cap to confirm
  - Do NOT rotate base!



- Mix Sanitizer
  - One ounce of household bleach to Two gallons of potable water will produce a sanitizing solution
  - Spray or wash all interior surfaces of the bin and door with the sanitizing solution
  - Pour excess down the bin drain
  - Allow to air dry

- Cubes are mal-formed
  - Check spray jets
  - Check curtain
  - Check water fill
    - Water supply
    - Inlet Water Valve
    - Water Filters (if used)



- Cubes are mal-formed
  - Water may be leaking out of reservoir
    - Check pump hoses
    - Check curtain

- Low Capacity
  - Normal capacity takes about 24 to 36 hours to fill up & shut off after start up
    - If slow, check cube count
      - Should be 8 full cubes
    - Check cycle time
      - Should be about 1/2 hour
        - » If long, check condenser or
        - » Inlet water valve might be leaking through
    - Check bin for proper draining
      - Accumulating water will melt ice

- Makes too much noise
  - Check fan blade for shroud contact
  - Check pump fan for foil contact (loose foil)
    - Foil no longer used
  - Check back panel for loose screws
  - Check pump for tight bearings



- Does not make ice - nothing working
  - Bin thermostat open
  - Pump model pressure switch open
    - Water backed up and pump not running
- Pump and fan on, compressor not
  - Check compressor and start relay

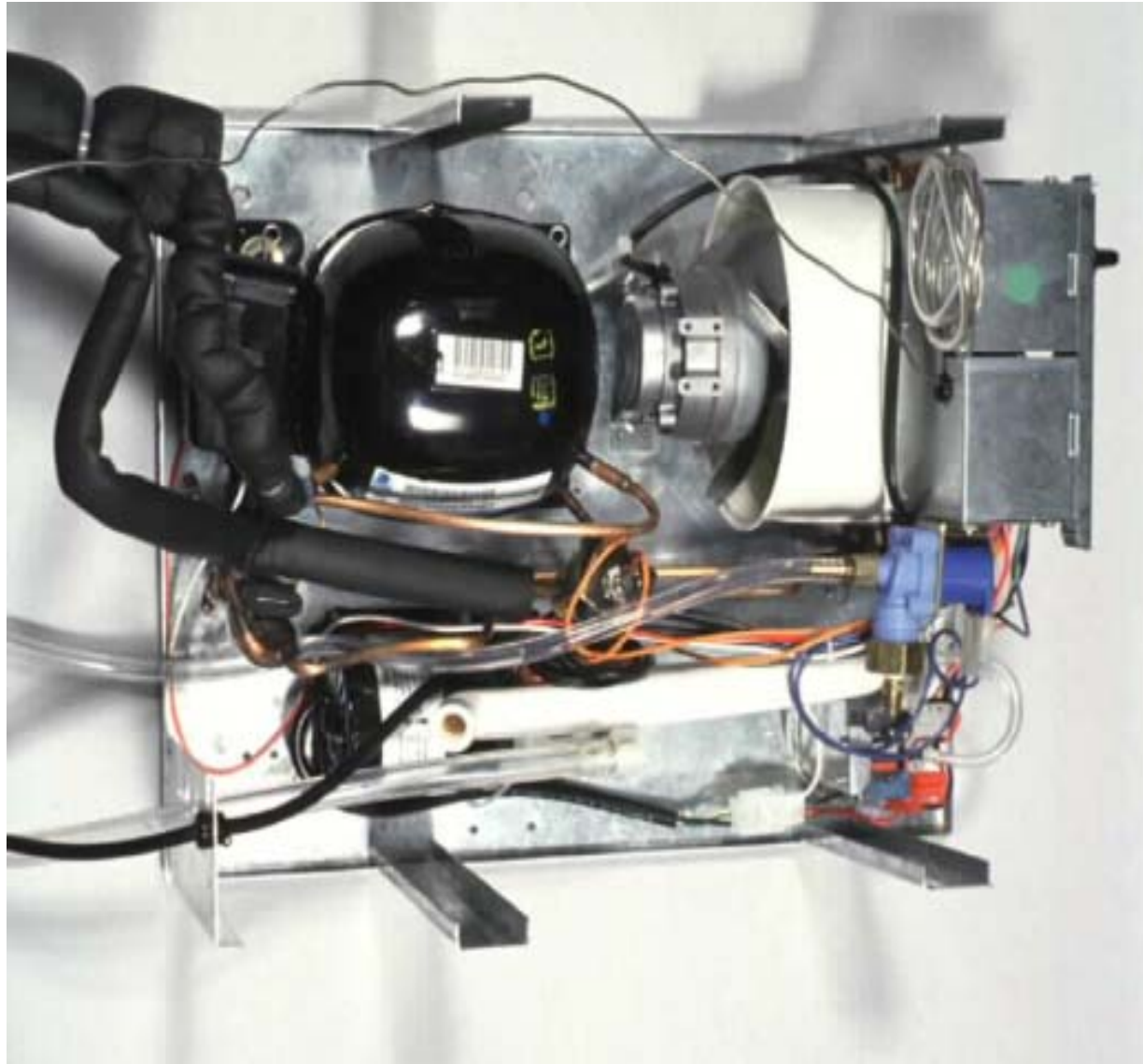


- Compressor, fan and pump on, water spraying, no ice
  - Cube size thermostat not closing
    - Too much heat load from water leaking through inlet water valve
    - Can't reject heat due to dirty condenser
    - Thermostat failed



- Makes partial cubes
  - Spray jet dirty
  - Water level low
  - Water trapped on top of evaporator
    - Weep hole restricted
  - Low charge because of a refrigerant leak

- R-134a system
  - Uses Tecumseh compressor (1/8 HP)
  - Hot gas bypass to defrost evaporator during harvest
  - 5 ounce charge
  - Do not connect high side gauge - too much charge will go into the hose!
  - Suction at the end of freeze is about 5 PSIG



- Compact ice machine
- Can be built in
- Pump or Gravity Drain model
  - Drain pump is magnetic drive - no leaks!
- Reversible Door
- 8 cubes per cycle
- Makes commercial quality ice