



AFE400/AFE424

Technical Training

AFE424

- Installation
- System Operation
- Cabinet Removal
- Maintenance
- Service Diagnosis
- Refrigeration Service

AFE424

- Undercounter flakers
 - AFE424
 - R-134a



AFE424

- 24" wide x 24" deep x 39" high (with legs)
- 2 piece gray polyethylene cabinet
- Air flow in the front and out the front
- Selection of Air or Water Cooled
- 115 volt cord connected

AFE424 - R-134a

- Thermostatic Expansion Valve
 - 6° to 8° superheat
- Low Side Pressure = 12 PSIG
- High Side Pressure = 125 - 160 PSIG
- Tecumseh compressor

Water System

- Float Valve
- Water Pressure Cut-Out Switch
 - Cut Out Pressure = 10 PSI
 - Cut In Pressure = 20 PSI
- Bin and Reservoir Overflow Drains

Electrical System

- Adjustable Bin Thermostat
 - 45⁰ F. Cut In, 35⁰ F. Cut Out (min)
 - 61⁰ F. Cut In, 51⁰ F. Cut Out (max)
- High Pressure Cut Out
 - AFE424 at 250 PSIG (water cooled)

Electrical System

- Compressor Amp Draw: 6.9 - 7.1
- Auger Motor Amp Draw: 2.8 - 3.2
- Fan Motor
 - Air Cooled = 16 watt
 - Water Cooled = 5 watt

Installation

- Easy to connect
 - Cord supplied
 - 3/8" male flare inlet
 - Two 3/4" FPT drains
 - All on the exterior of the back panel
 - No inside access needed

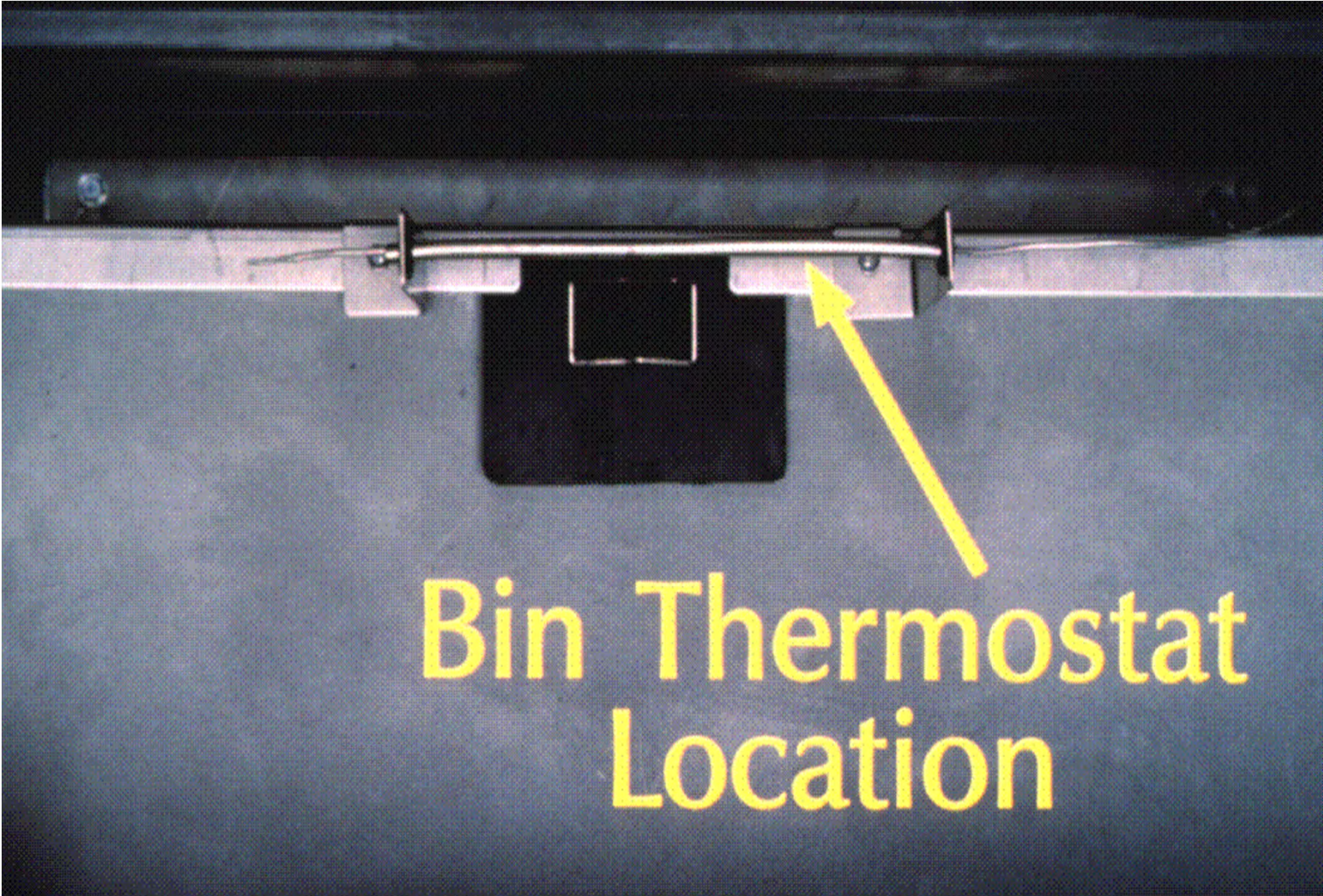


Installation

- May be built in
 - Air flows in and out the front
 - Can be serviced in place



Ice Level Control



Normal Full Ice Level



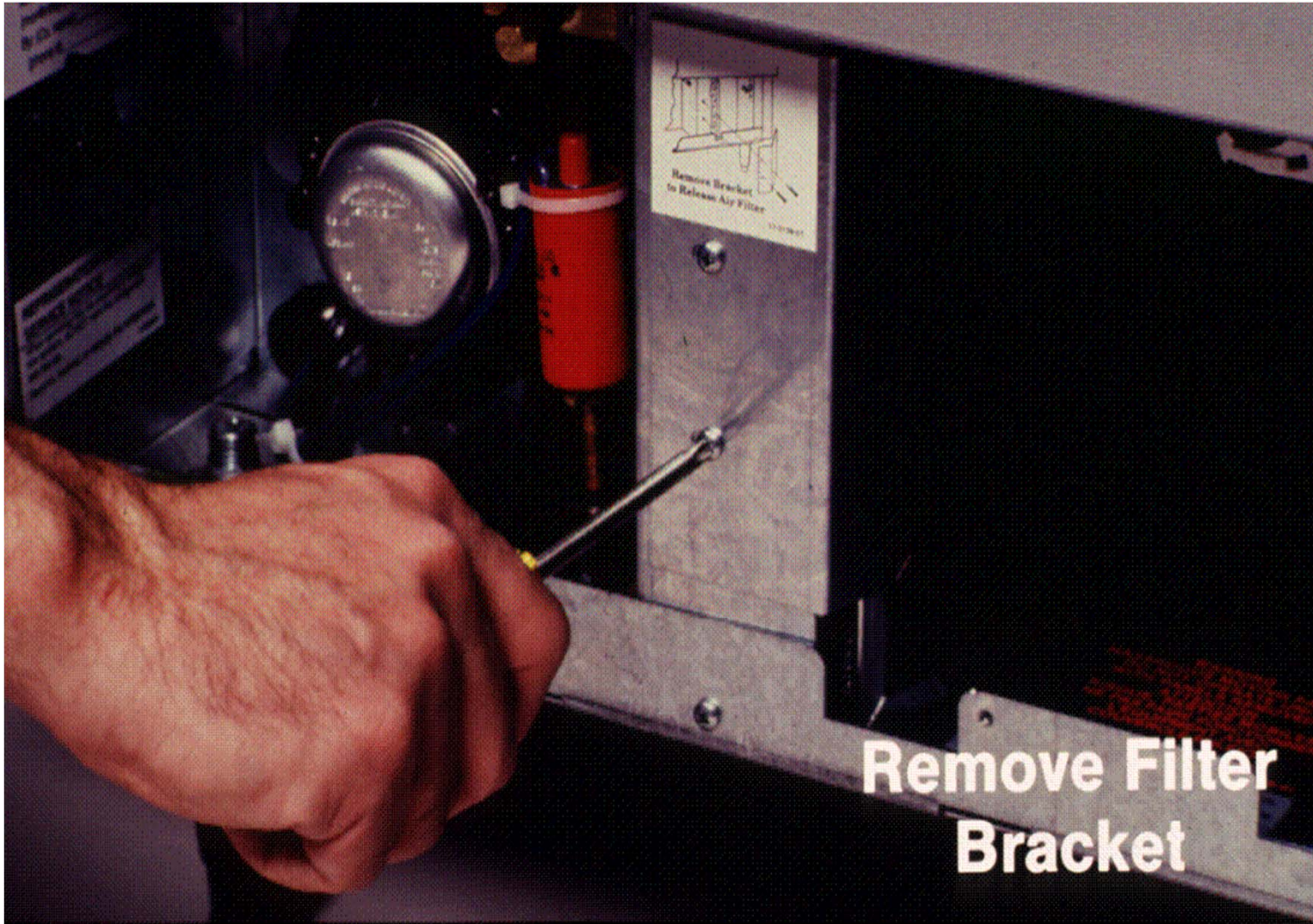
Remove Bin



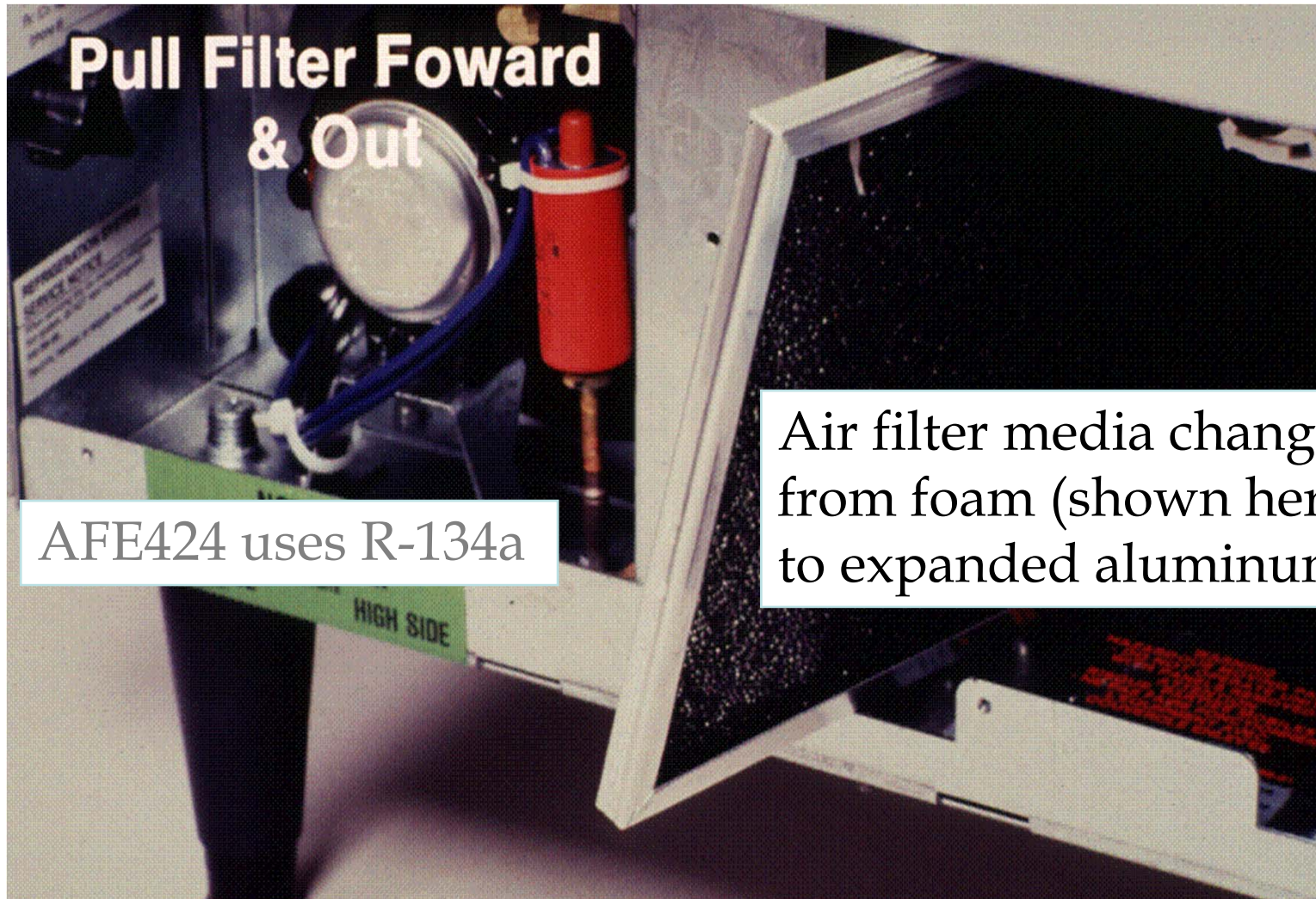
Remove Bin



Remove Bin



Air Filter



Remove Hood



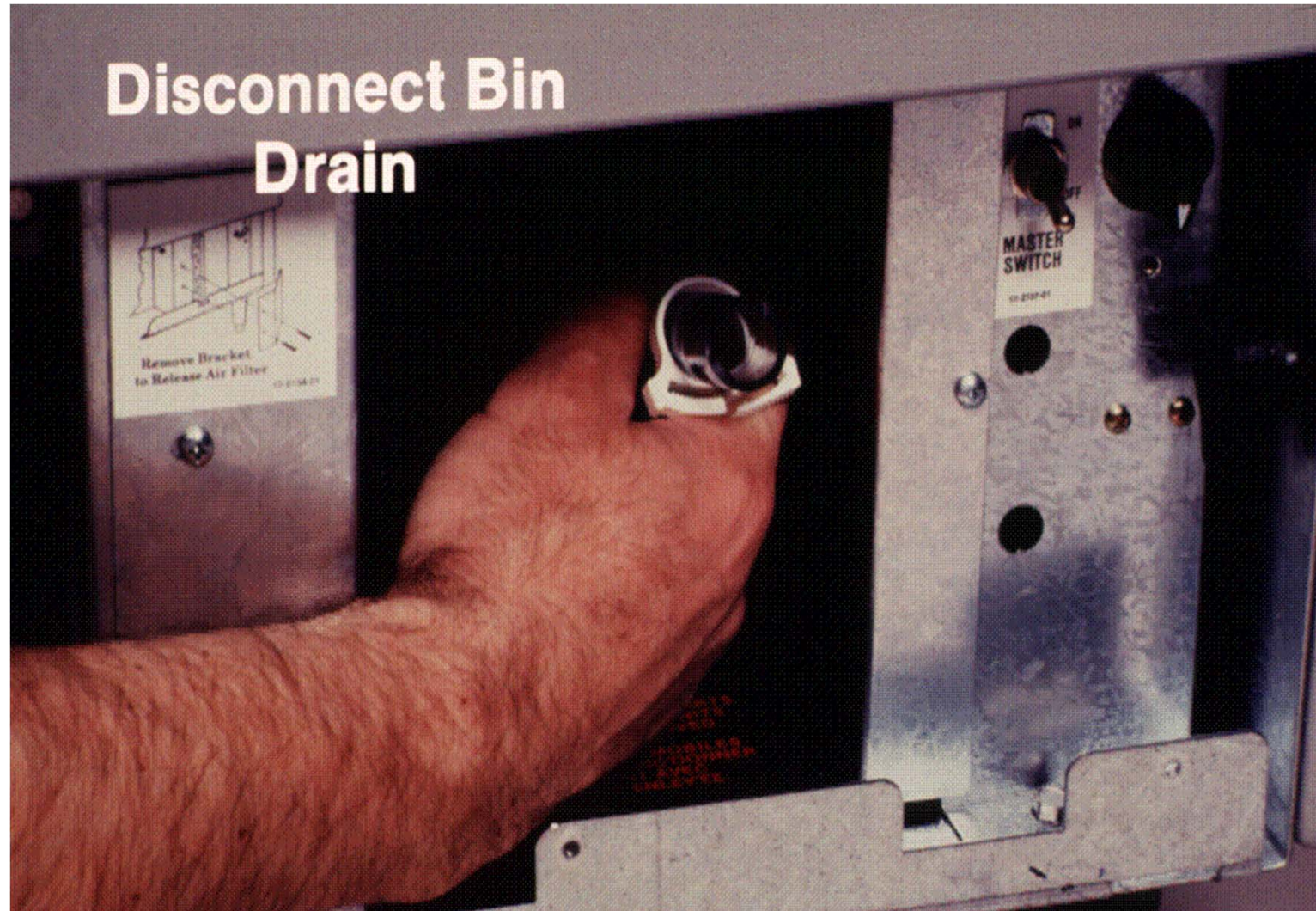
Remove Hood



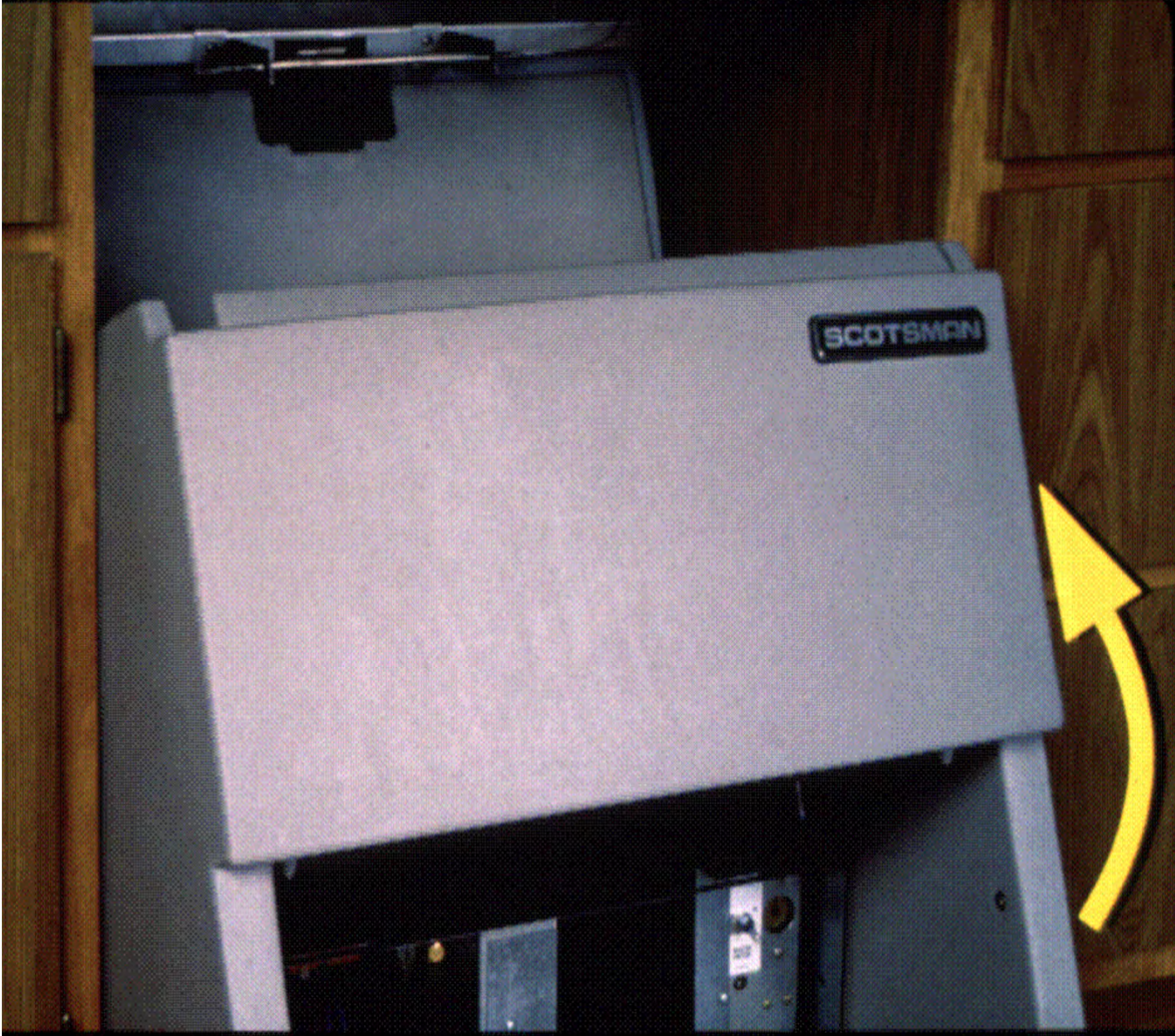
Remove Bin



Remove Bin

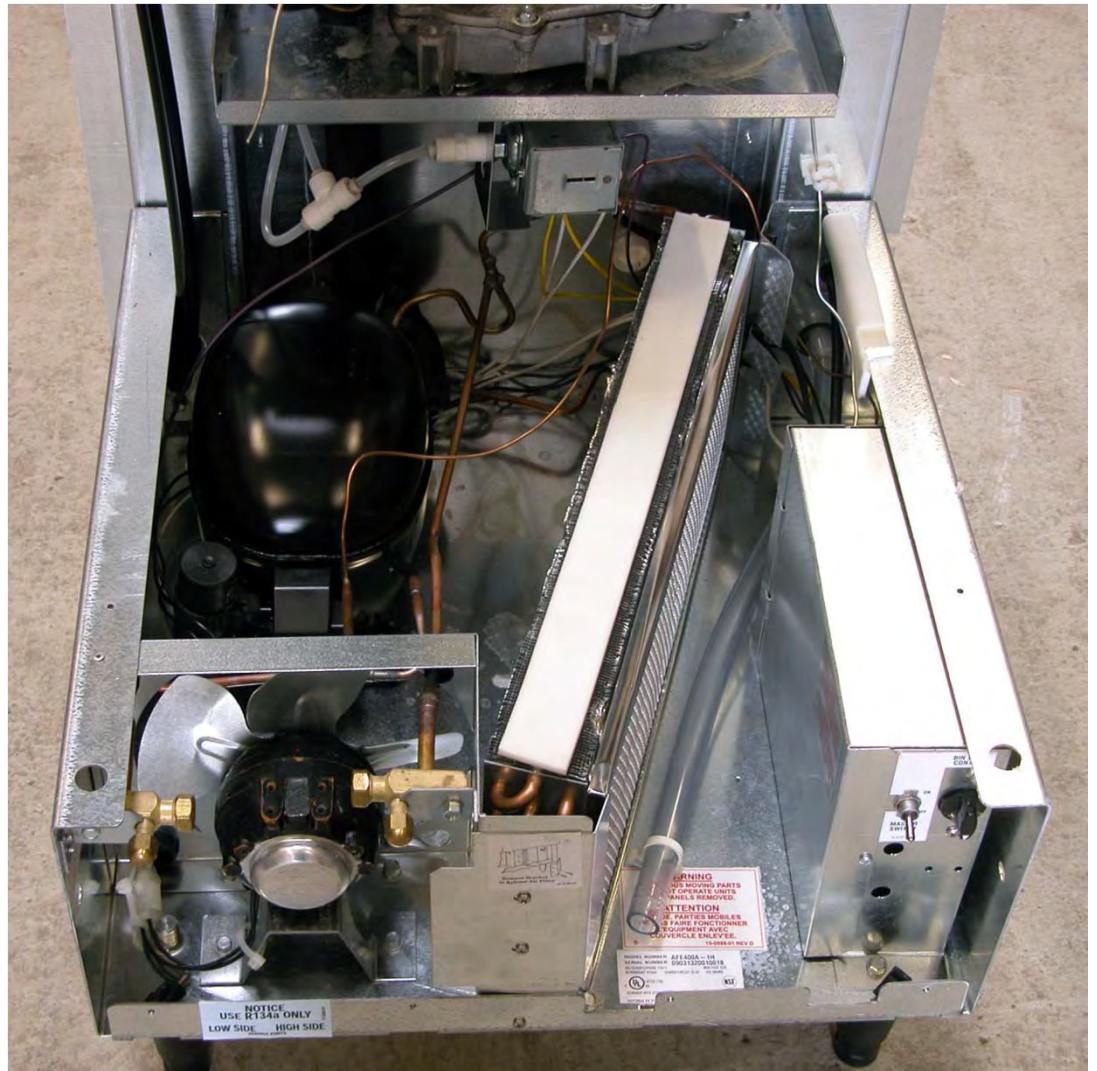


Rotate Bin Up & Out



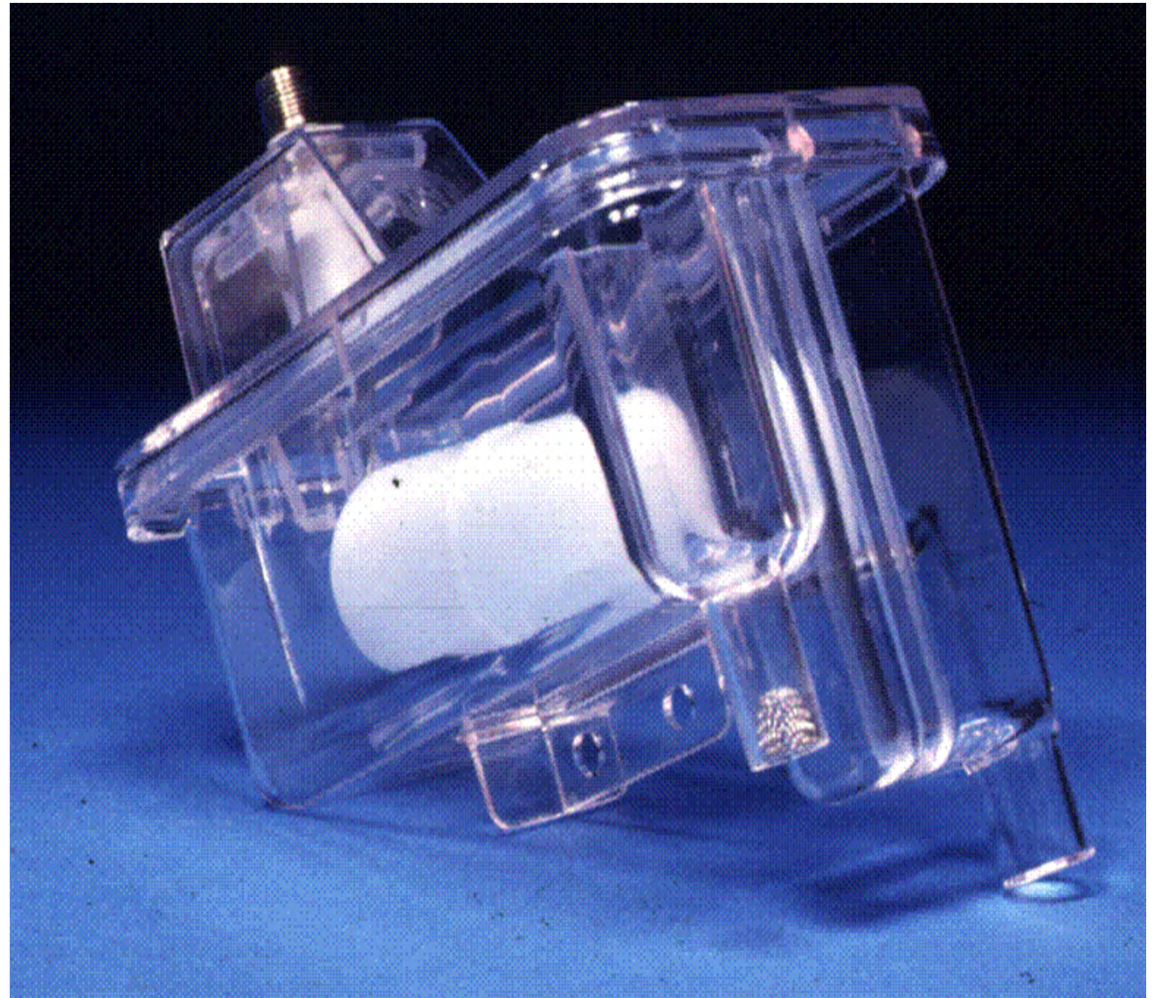
What's under the bin?

- The condensing unit
- Control box
- Gear reducer
- Evaporator
- Water safety switch



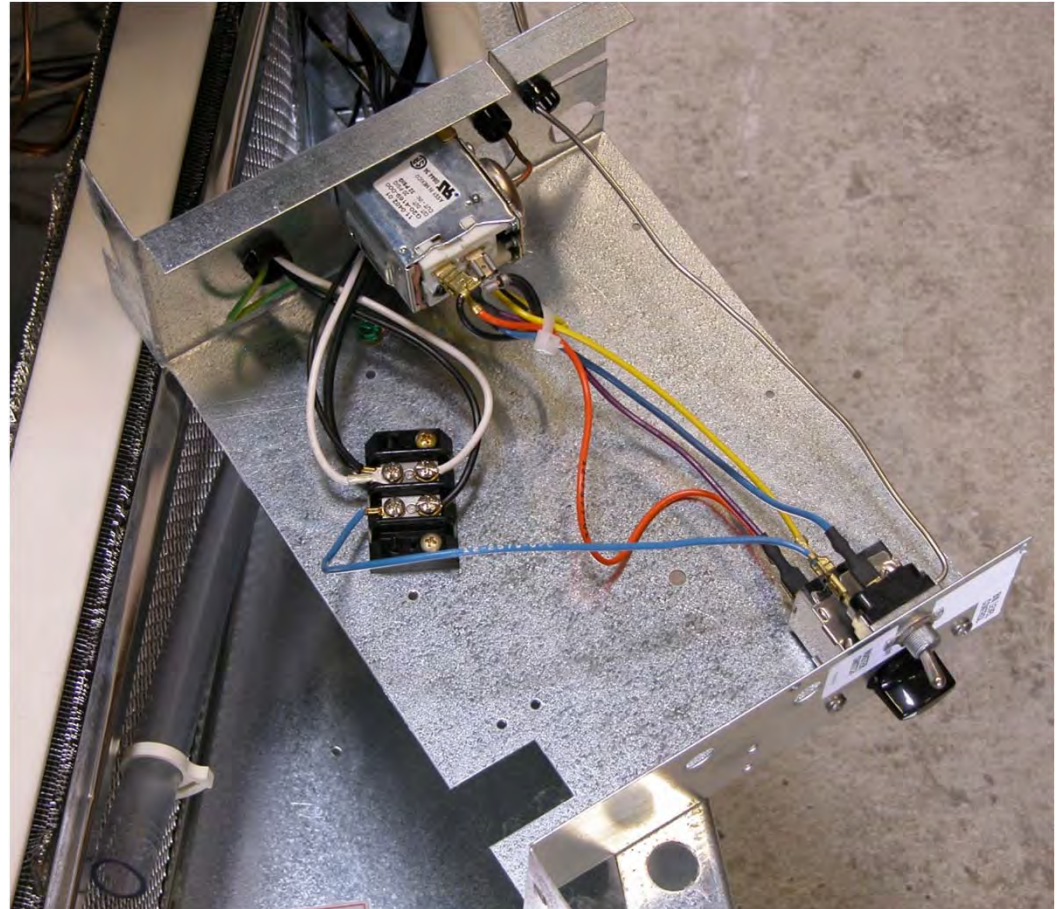
Reservoir

- Water level in reservoir equals water level in evaporator



Control Box

- May be moved up for better access
 - Remove front bolt
 - Pull forward
 - Lift up



Maintenance

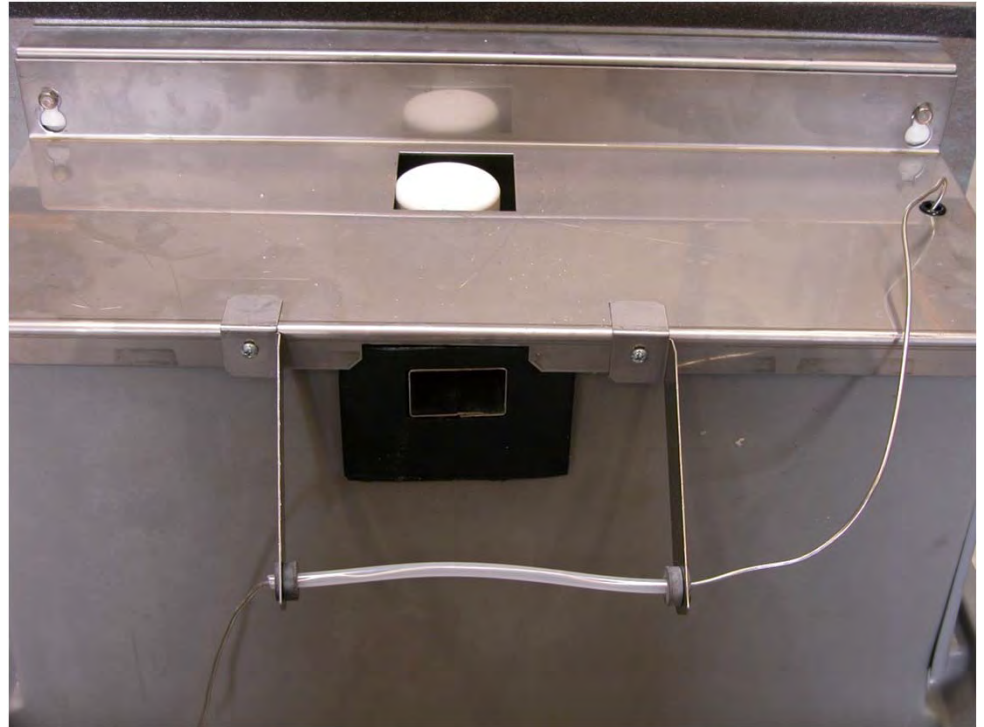
- Clean or Replace Air Filter
 - Check Condenser
- Sanitize Water System
- Check Bearings
- Check Auger

Scale Removal

- Shut unit off, remove hood and bin
- Shut water off at float
- Drain the reservoir using drain hose
 - Mix a quart and a half of warm water and 4 ounces of Scotsman Clear 1 Ice Machine Scale Remover
- Pour solution into the reservoir & switch unit on
- Add solution to reservoir until all used, then turn water on
- Make ice for another 10 minutes
- Shut unit off

Evaporator Service

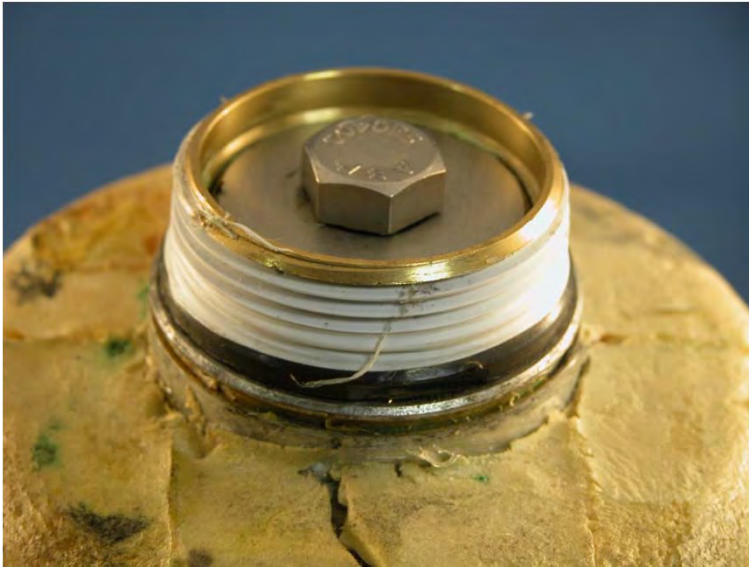
- Cover plate must be removed
 - For access to top of evaporator
 - For access to reservoir



Scale Formation



Top Bearing Access



Remove Plastic Cap



Unscrew Bolt, Remove Thrust Washer

Top Bearing Inspection

- Clean up and repack with small amount of grease
- Return thrust bearing to unit
- Put plastic cap back on, be sure it is on tight



Other Maintenance

- Check bottom of evaporator for water seal leak
 - Replace seal if leaking
 - Check gear reducer
- Clean up any scale on gear case cover

Service Diagnosis

- Ice Maker Does Not Operate
- Check:
 - Voltage
 - Master Switch
 - High Pressure Cut Out

Service Diagnosis

- Ice Maker Does Not Operate
- Check:
 - Bin Thermostat
 - Water Pressure Cut Out Switch
 - Low Pressure Cut Out Switch

Service Diagnosis

- Ice Maker Does Not Operate
- Check:
 - Auger Delay Contacts 3-2
 - Auger Drive Motor

Service Diagnosis

- Compressor Does Not Operate
- Check:
 - Centrifugal Switch on Auger Motor
 - Compressor Relay, Capacitor
 - Compressor Motor

Service Diagnosis

- Makes a "Funny Noise"
- Check:
 - Bearings
 - Coupling & Adapter Stand
 - If out of alignment will make "clicking" or "snapping" sound as auger rotates; test by oiling top of coupling. Replace stand to repair.
 - Auger & Evaporator for Stains
 - Gears for Chipped Teeth

Bearing Replacement

- Remove auger
 - Two screws opposite ice chute
 - Remove cap
 - Loosen but do not remove bolt
 - Pull up on breaker
 - Tee (1.5") or
 - Slide hammer will remove stubborn augers



Top Bearing

- Top bearing available either with Breaker or individually.
Either:
 - Separate breaker from auger and replace or
 - Separate breaker from auger and remove bearing from breaker



Note: Early breakers did not have retaining ring in breaker. Ring must be removed to remove breaker.

Bearing Replacement

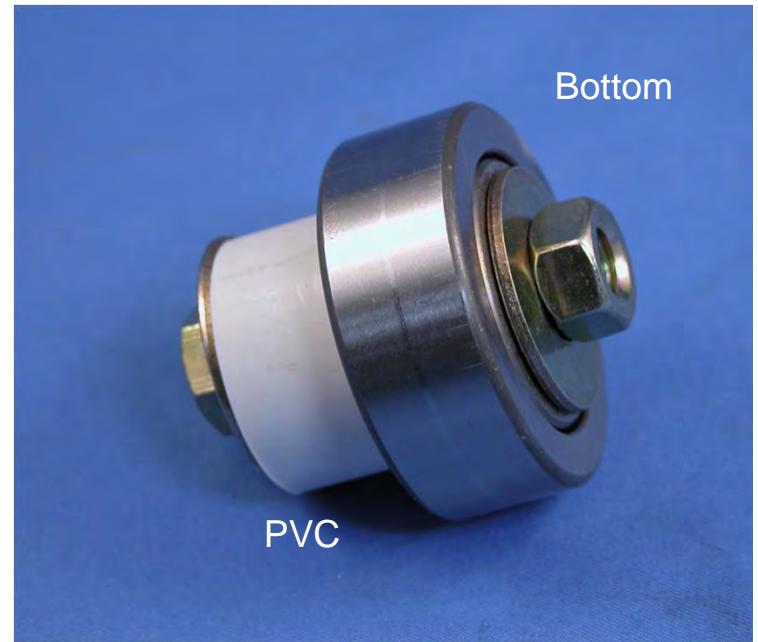
- Bearing requires an installation tool to keep it together while driving it into the beaker.
- Assemble a 1.75" 5/16 - 18 bolt, 2 flat washers and a 1/2" long piece of 3/4" PVC tubing. The tubing must be cut square.



Top Bearing: Roller Bearing and Thrust Bearing

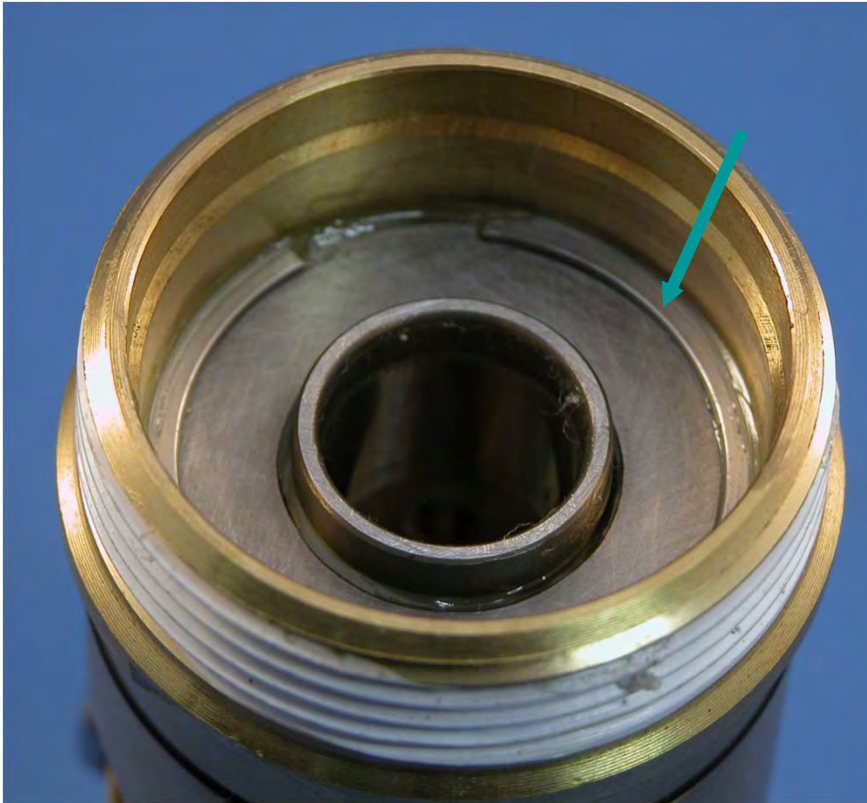
Bearing Installation

- Put the roller section together with the bolt, washers and PVC. Lube the edge and install into the breaker.
- Tip: Remove the outside o-ring and put the breaker into the evaporator tube to support the breaker while driving in the bearing. Tap on the bolt to drive it in.
- Remove the bolt, washers and PVC when done.
- Be sure to put the o-ring back onto the outside of the breaker during final assembly



Roller Section with Installation Tool

Bearing Installation



Install Retaining Ring



Install thrust section. Add small amount of grease.
Add thrust washer. Install onto auger.

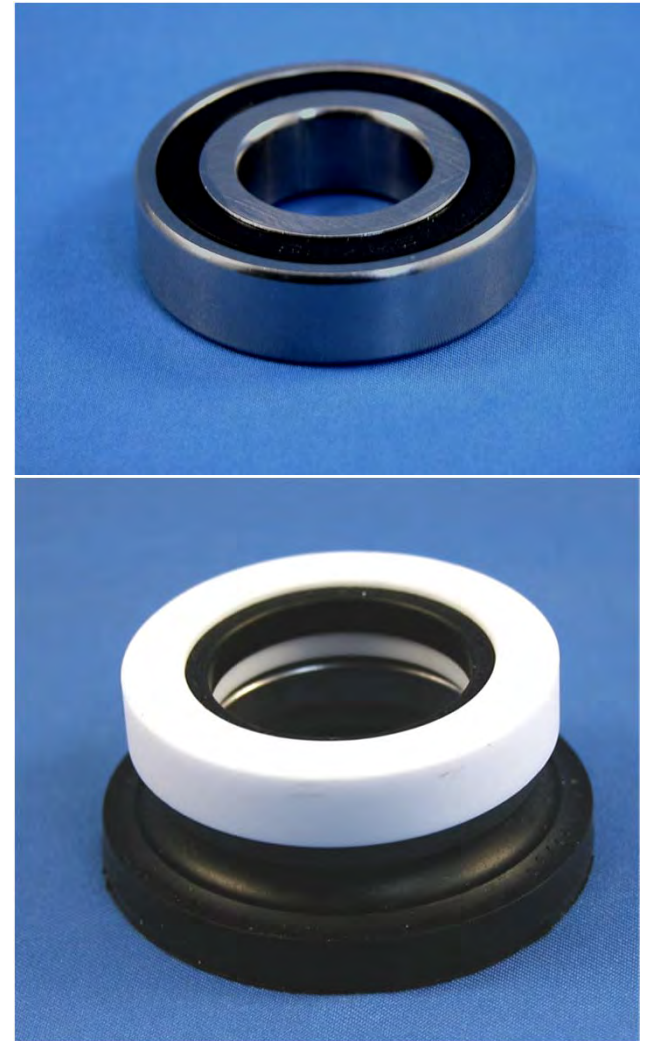
Auger Kit



- Includes top and bottom bearing, water seal, auger and sealant

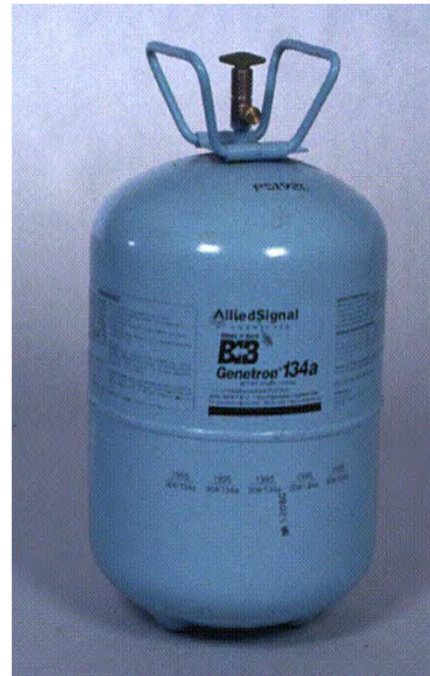
Bottom Bearing and Water Seal

- Bottom Bearing
 - 02-0417-21 is stainless steel
- Water Seal
 - AFE424 production seal rotating half is ceramic



Refrigeration Service

R-134a



Weigh In Charge



Evacuate to 300 microns



Use HFC Leak Detectors



Use Nitrogen Purge

AFE424

- Easy to install
- Easy to service in place
- Bin and Hood cannot rust
- Improved top and bottom bearing and water seal