FRIGIKING®
EVAPORATIVE AIR COOLER

Owner's Guide
Use and Care Manual
Ducted Cooler Models:
FD350, FD450, FD650
FS350, FS450, FS650

Customer Service
1-800-325-6952

• Safety	• Operation
• Installation	• Maintenance
• Start-up	• Troubleshooting

Congratulations: You have purchased a product of superior performance and design, which will give the best service when properly installed, operated and maintained.

This guide will provide you with information needed to assemble the unit. It also contains information on how to safely operate, inspect, maintain and troubleshoot your Frigiking evaporative air cooler.

⚠WARNING - TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

READ AND SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

- Read all instructions carefully before installation.
- Cooler motor, pump, cabinet and junction box must be grounded in accordance with all local and national codes. A ground wire must be used between the cooler and the power source.
- Always disconnect electrical power to the cooler before working on cooler.
- **WARNING** To reduce the risk of fire or electrical shock do **NOT** use this fan with any solid state speed control device.
- Do **NOT** remove side panels while cooler is running.
- Do **NOT** operate with evaporative pad removed.
- Do **NOT** locate cooler near exhaust or vent pipes as odors or fumes may be drawn into the unit.
- Be sure cooler is connected to proper line voltage stamped on blower motor and pump motor specification plate.
  NOTE: IMPROPER VOLTAGE WILL VOID MOTOR WARRANTY.
- Your warranty does **NOT** cover shipping damage. Report all shipping damage at once to store making the delivery.

THE USE OF ANODE DEVICES, CHEMICAL ADDITIVES, OR COOLER CLEANER TREATMENTS IN THIS COOLER WILL VOID THE WARRANTY.

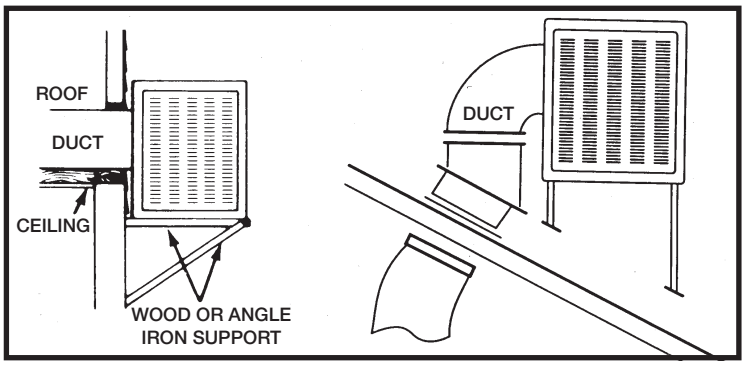
- For future reference, record the model and serial number, date and place of purchase of your evaporative cooler here:

Model # _____ **Serial #** _____

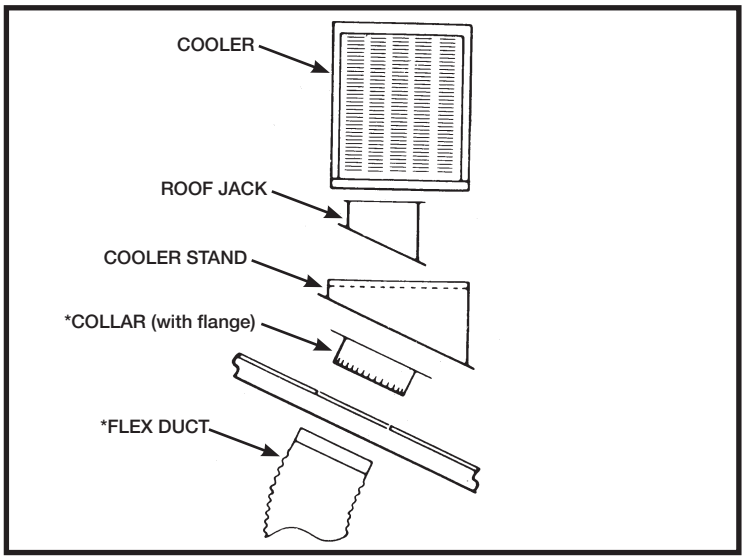
Date of Purchase: _____

Place of Purchase: _____

Serial # can be found outside the cabinet.



TYPICAL SIDE DISCHARGE



TYPICAL DOWN DISCHARGE

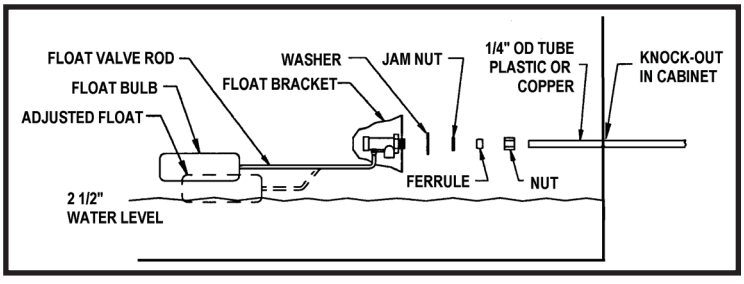
INSTALLATION

Installation requires connection of blower opening to existing air ducting system or to a dropper duct with a ceiling diffuser. In either instance, building modification is necessitated. The bottom discharge cooler is always mounted on the roof of the structure. This will require a roof stand, roof jack, flexible duct and collar to connect to existing ductwork. If installation is being made by other than a professional HVAC contractor, it is suggested that the installation be throughly discussed with a professional sales person familiar with cooler installation and that printed instructions be requested for the installation equipment and supplies purchased.

DO NOT DRIVE NAILS OR SCREWS INTO BOTTOM OF COOLER, THIS WILL CAUSE IT TO LEAK WATER AND WILL VOID THE WARRANTY.

*** FOR MOBILE HOME INSTALLATION SEE SEPARATE INSTRUCTION SHEET IN GRILL KIT BOX.**

Whenever the cooler is mounted, the surface must be level. This is necessary so that the water in the reservoir and in the troughs of the pad frame will be level when the cooler is operating.



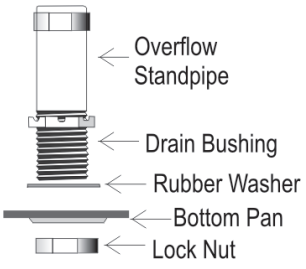
WATER CONNECTION

1. Install float in hole provided in float bracket. See parts illustration to route water line. Connect per above sketch.

WATER CONNECTION Continued

2. Turn water to cooler on and set float valve to maintain 2 1/2" water depth. The float valve is adusted by bending the float valve rod.
3. Bleed-off: Bleed off is helpful to prevent scale from building up in the cooler. A bleed-off adapter tee and tube are furnished with the cooler for this purpose. Run bleed-off line to a proper drain.

Note: Evaporative coolers should not be connected to a "soft" water system.



DRAIN BUSHING

Insert drain bushing through the hole in the cooler bottom pan. Attach nut securely and hand tighten. Do **NOT** use a wrench.

WALL SWITCH: For one or two speed (120 ro 240 volt) use switch kit available from your dealer.

ADJUSTABLE MOTOR PULLEY (SHEAVE): This part is set at the factory for proper motor load and maximum air delivery of a cooler not connected duct and register system. When cooler is connected to a duct system the cooler air capacity and motor amperage decrease due to static pressure (duct resistance). The adjustable motor pulley is used ONLY to compensate for duct system resistance by returning cooler and motor to proper load capacity and should not be adjusted except for that purpose.

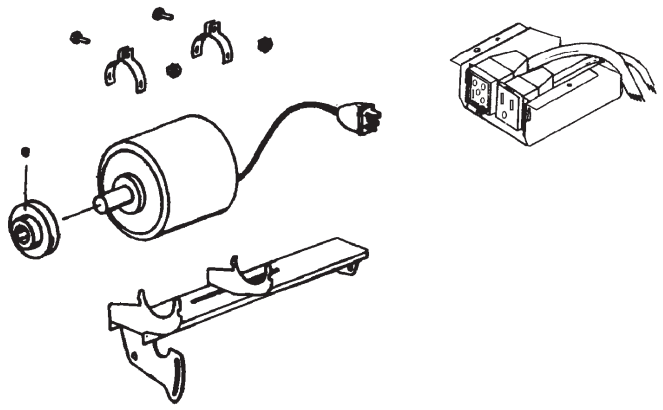
⚠CAUTION: AMPERAGE OF MOTOR MUST BE CHECKED TO MAKE CERTAIN IT DOES NOT EXCEED THE MAXIMUM ALLOWED AS STAMPED ON MOTOR SPECIFICATION PLATE.

Only persons with proper electrical equipment and thorough knowledge of adjustable pulleys should attempt adjustment of your cooler.

⚠WARNING: IMPROPER PULLEY ADJUSTMENT CAN OVERLOAD AND BURN OUT MOTOR AND VOID WARRANTY.

MOTOR KITS

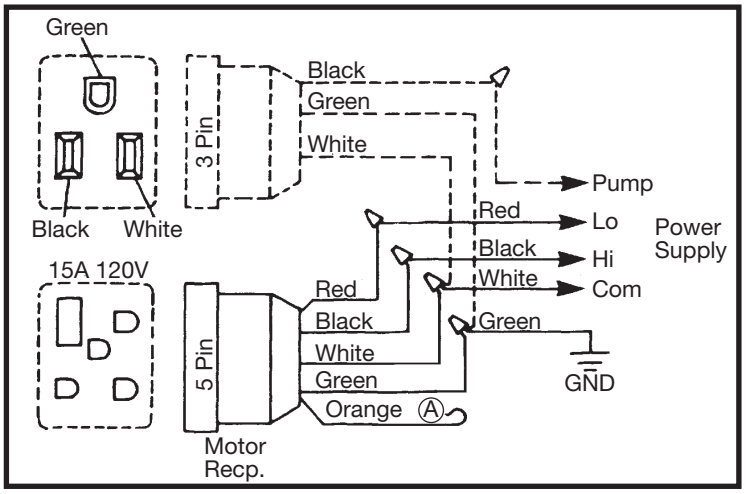
120 VOLT MOTOR KIT



INSTALLATION

1. Install the motor in the mounting cradle as shown.
2. Remove the junction box from the cooler.
3. Wire the pump and motor receptacles per the schematic shown below.
4. Place both receptacles in the junction box as shown and re-attach the junction box to the cooler top.

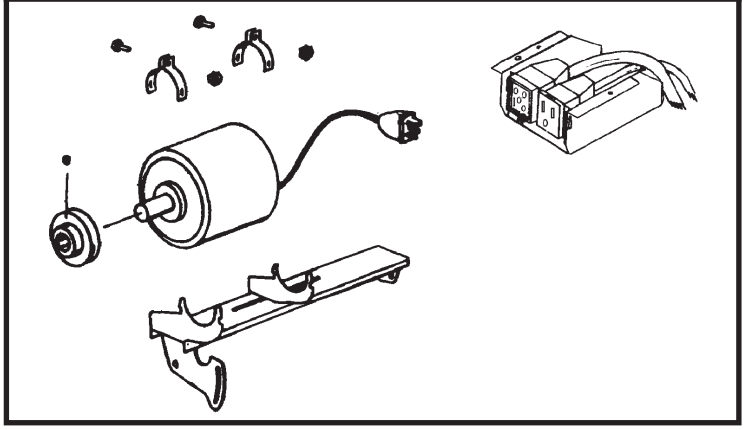
120 VOLT MOTOR KIT



Ⓐ The orange wire is not used. Double it over and cover the bare end with electrical tape.

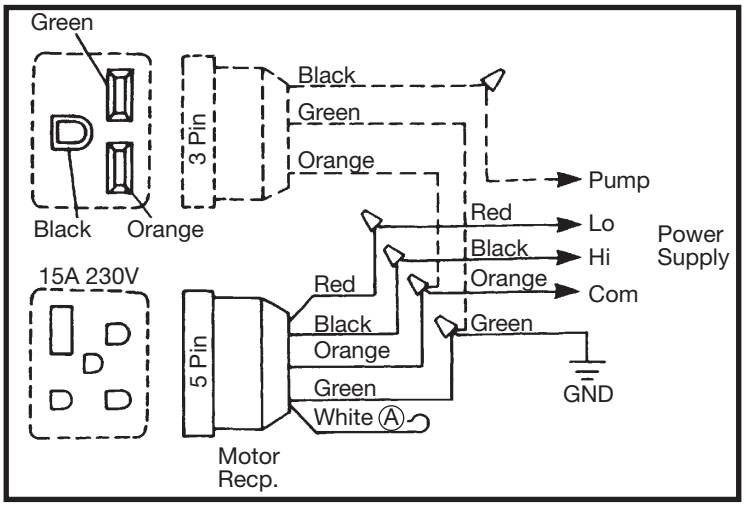
Ⓑ The red wire is not used on single speed motors. Double it over and cover the bare end with electrical tape or wirenut.

240 VOLT MOTOR KIT



INSTALLATION

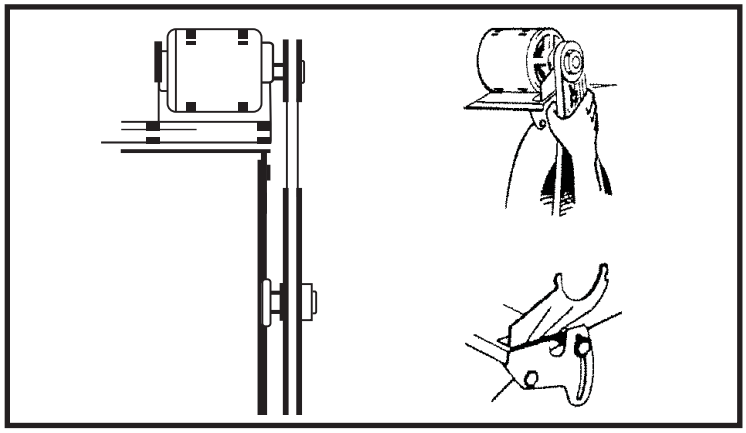
1. Install the motor in the mounting cradle as shown.
2. Remove the junction box from the cooler.
3. Remove 120 volt pump and pump receptacle furnished with cooler and replace it with the 240 volt LSP-94 pump and pump receptacle. (see replacement parts list)
4. Wire the pump and motor receptacles per the schematic shown above.
5. Place both receptacles in the junction box as shown and re-attach the junction box to the cooler top.



Ⓐ The white wire is not used. Double it over and cover the bare end with electrical tape or wirenut.

Ⓑ The red wire is not used on single speed motors. Double it over and cover the bare end with electrical tape.

OPERATION



BLOWER BELT ADJUSTMENT

Correct belt tension adjustment is important. Incorrect adjustment increases power consumption and shortens belt and motor life.

Install belt over motor and blower pulleys.
(A) check belt tension by squeezing (deflecting) belt. Proper tension will allow deflection of 1/2 to 3/4 inch.
(B) To increase or decrease belt tension, loosen bolt in slot of motor support brcket. Adjust belt to desired tension and re-tighten bolt.

PRE-WET PADS

For maximum cooling efficiency, prior to the initial start up of the cooler remove the pad frame assemblies from the cooler and spray the pad and frames thoroughly with water from a garden hose.

Put the pad frame assemblies back on the cooler and while the pads are still wet start the cooler with the pump on.

MAINTENANCE

The cooler should be serviced at least once a year and more often if required. This includes cleaning, oiling, belt adjustment or replacement (if required) and pad replacement.

⚠WARNING: ALWAYS DISCONNECT ELECTRICAL POWER TO THE COOLER BEFORE WORKING ON COOLER.

CLEANING

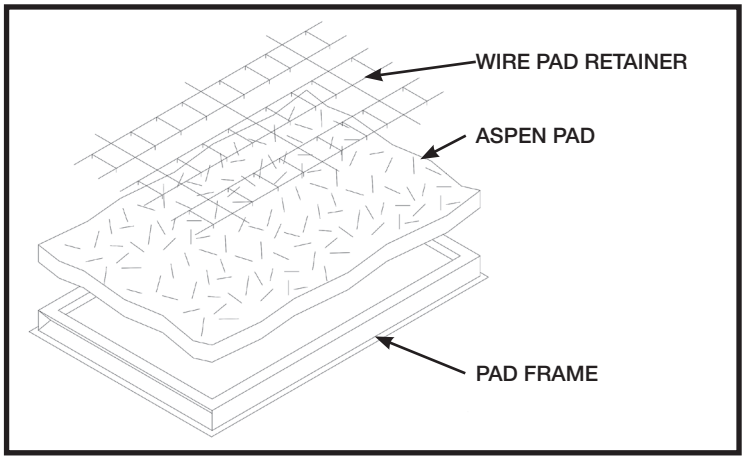
1. Remove pad frames and set them aside.
2. Remove the overflow standpipe from the drain bushing and allow the reservoir to empty.
3. Clean the internal surfaces of the cooler with a cloth and clean water. DO **NOT** USE WIRE BRUSHES OR OTHER MEANS THAT MIGHT SCRATCH THE PAINT. DO **NOT** USE ANY CHEMICALS OTHER THATN SOAP OR DETERGENT TO CLEAN THE COOLER.
4. Rinse the cooler bottom pan throughly.
5. Clean the pump screen and remove any foreign material in the hose adapter between the pump and hose. Remove any foreign material in the distributor adapter located between the top end of the hose and the water distributor.
6. Touch up and scratches or bare spots inside the cooler with a suitable cooler coating.

OILING

Fill the oil cups on the blower shaft bearings with SAE#30 non-detergent motor oil.

BELT ADJUSTMENT

Check belt tension. Re-adjust, if loose, per instructions in the Operation section of this manual.



PAD REPLACEMENT

1. Lay pad frame on smooth surface with wire pad retainers up. Remove wire retainers.
2. Remove and discard used pads.
3. Clean pad frames. Do **NOT** use wire brush or harsh chemicals that might harm the paint finish. Touch up scratches and bare spots with touch up paint.
4. Check slots in trough at top of pad frame to be sure they are open.
5. Replace pads with new media pads of the correct size.
6. Reinstall wire retainers.
7. Thoroughly wet pads with garden hose before re-installing.

TROUBLESHOOTING:

The following guide is intended to help you diagnose and fix some of the most commonly encountered problems; by no means does this guide cover all of the possible problems you may encounter. If you cannot diagnose and correct the problem, or if it persists, contact qualified service personnel. All electrical work should be done by, or with the help of, a qualified electrician.

PROBLEMS / SYMPTOMS	POSSIBLE CAUSE	CORRECTIVE ACTION
Water overflow	1. Float valve out of adjustment 2. Float movement obstructed 3. Float valve defective	1. Adjust float to 2½" water depth. 2. Free float from obstruction 3. Replace float assembly
Blower will not operate	1. Electrical power disconnected 2. Motor defective 3. Switch or thermostat defective 4. Blower belt broken	1. Check power receptacle and cord 2. Replace motor 3. Replace switch or thermostat 4. Replace belt
Fuse blown or circuit breaker tripped	1. Wiring faulty or wired incorrectly 2. Motor faulty 3. Water pump faulty	1. Repair or replace defective wiring 2. Replace motor 3. Replace water pump
Dry pads	1. Water level incorrect 2. Pump intake clogged 3. Water pump faulty 4. Clogged water line 5. Trough clogged 6. Switch faulty 7. Wiring faulty	1. Adjust float to 2-1/2" water depth 2. Remove obstruction 3. Replace water pump 4. Locate and free obstruction 5. Clear debris from trough 6. Replace switch 7. Repair or replace defective wiring
Noisy operation	1. Blower rubbing on housing 2. Motor sheave loose 3. Blower set screws loose	1. Reposition wheel 2. Tighten screws 3. Tighten set screws
Inadequate air flow	1. Pad plugged 2. Belt loose 3. Insufficient exhaust vent area	1. Replace pads 2. Adjust belt tension 3. Open windows or doors