

Industrial Commercial Owner's Guide

- INSTALLATION
- OPERATION
- MAINTENANCE
- SERVICING

Evaporative Air Cooler Models

**READ AND SAVE
THIS INSTRUCTION
MANUAL**

PCRD	PCRS
11000 & 11000-2	11000 & 11000-2
13000 & 13000-2	13000 & 13000-2
15000	15000
16000	16000

IMPORTANT

Note any damage on the freight bill, as any damage claim must be filed with carrier.

**Motor, motor pulley and belt sold
separately**

Date purchase: _____

Purchased from: _____

P/N 522319
Rev. 6/02

Evaporative Cooling

Evaporative cooling uses the principle of evaporation to lower the air temperature. Hot, dry air is passed through wetted filters and is converted to refreshingly cooled air. Essick Coolers make the best use of the evaporative process by controlling the flow of water, spreading the water evenly over the filters, and keeping a steady stream of cooled air entering the building. It is exhausted out open windows or doors, carrying heat, smoke and odors along with it. Essick evaporative coolers are 80% less costly to operate than refrigerated air conditioners.

INSTALLATION OF EVAPORATIVE COOLERS

PREPARATION

1. All electrical and duct work must comply with local and federal codes.
2. Make arrangements to get the cooler from ground to roof (crane, hoist, etc.).

LOCATION

1. Cooler should not be mounted near exhaust openings or vent pipes where fumes and odors can be drawn into cooler.
2. Ensure mounting surface is strong enough to support the cooler. Operating weight will be much heavier than shipping weight.
3. Locate cooler so that fresh air is drawn in; air is not recirculated.

ROOF MOUNT UNITS

1. Select the location, taking into account roof construction and duct requirements. If rafters are cut when the roof opening is cut, be sure to strengthen them.
2. Purchase or construct a platform to provide a level, mounting surface for the cooler. Always mount the cooler high enough to allow easy access to the drain fitting.
3. Measure cooler or use the spec sheet to determine size of platform. Platform must be located so that the discharge opening of the cooler is in line with the ductwork. On pitched roofs, the platform frame may be covered with galvanized sheet steel or other weatherproof materials. Openings or removable panels must be left to allow access to the drain fittings. On down discharge coolers the duct should be fastened to the platform collar before cooler is set in place. The duct should have a standing flange for the cooler discharge opening to fit. Flash and seal the duct and roof opening to provide weather tightness.

CAUTION: TO AVOID RISK OF FIRE, ELECTRICAL SHOCK, OR SERIOUS PERSONAL INJURY, BE SURE TO DISCONNECT POWER FROM UNIT BEFORE CLEANING OR SERVICING.

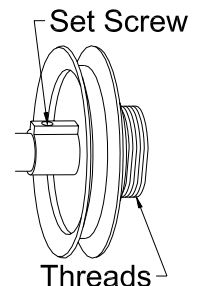
WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK; DO NOT USE THIS FAN WITH ANY SOLID STATE SPEED CONTROL DEVICE.

DUCT WORK

1. The most important rule to follow when designing duct work is: AN EVAPORATIVE COOLER DEPENDS UPON A LARGE VOLUME OF AIR COMING OUT OF THE DUCT WORK AT HIGH VELOCITY IN ORDER TO COOL PROPERLY.
2. Do not "reduce" the discharge opening of the cooler.
3. Do not undersize the duct work and make it much smaller than the discharge opening. (In most cases, air conditioning duct work is too small for coolers.)
4. Extra long ducts cause static pressure and will reduce airflow. They also pick up heat and diminish the effect of the cooled air.
5. The motor pulley may be adjusted to compensate for ductwork.
6. Sharp or abrupt bends hinder airflow.
7. Poorly designed ceiling diffusers will ruin a successful installation. Install diffusers that are designed for use with evaporative coolers.

MOTOR PULLEY INSTALLATION

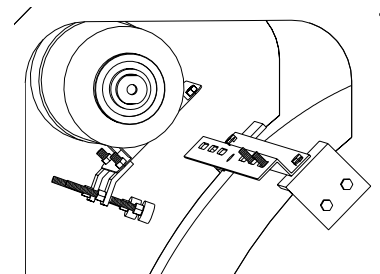
Before installing the motor pulley, loosen the set screw on the threaded side of the pulley and turn that jaw of the pulley until it is fully closed. Position the set screw over the closest flat spot in the thread and then open the jaw of the pulley 3 or 4 turns. Position the set screw over the closest flat spot in the thread and retighten the set screw. Place the pulley on the motor shaft and tighten the set screw that secures the pulley to the motor shaft.



MOTOR INSTALLATION

After cooler is in place and level, remove the motor from the box and inspect for shipping damage. Ensure that the motor voltage, phase and horsepower are correct.

1. Install the Motor Adjustment Assemblies as shown.
2. Mount motor on motor mount as shown. Use the slots that align the motor pulley with the blower pulley. To fully align pulleys, loosen set screw securing pulley to motor shaft and then align.



BELT ADJUSTMENT

An improperly adjusted belt will greatly shorten motor life. A deflection of 1" with 3 to 5 pounds of force applied will indicate proper adjustment. **Do Not** use the motor pulley to adjust belt tension. Always use the Motor Adjustment Assemblies to adjust the belt tension.

OVERFLOW PIPE INSTALLATION

Place the rubber washer onto the drain bushing. Slide the bushing through the drain opening, in the cooler bottom, from the top side. Screw the nut onto the bushing from under the cooler.

CAUTION: DO NOT HOOK THIS COOLER TO A WATER SOFTENER. THIS WILL VOID THE WARRANTY.

WATER CONNECTION

The float valves are mounted in the cooler at the factory. To connect water to the unit, run a 1/4" copper water line into the front of the cooler through the hole provided.

Connect the water line to the compression T provided.

BLEEDOFF

In hard water areas, a bleed off kit may be installed to dispose of small amounts of mineralized water allowing fresh water to replace it. Bleedoff kits are included with the cooler. To install, cut the water tube about 6 inches from the pump discharge. Place the tee in the line and connect the bleedoff line. Run the bleedoff line out through the overflow assembly. Run the bleedoff tube to the nearest roof drain. **DO NOT DISPOSE OF BLEEDOFF WATER ONTO THE ROOF.**

ELECTRICAL POWER

1. The installation of electrical wiring must conform to all local and federal codes and should be done by a certified electrician.
2. Connecting the motor and/or pump to the wrong voltage will void the warranty.

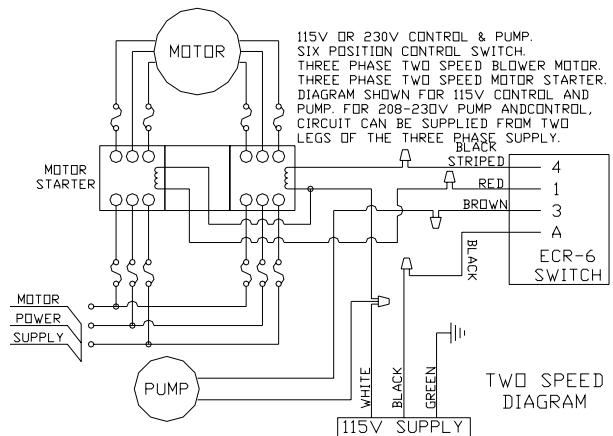
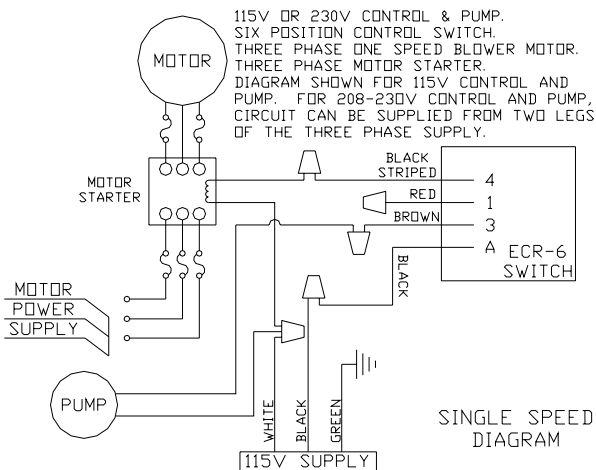
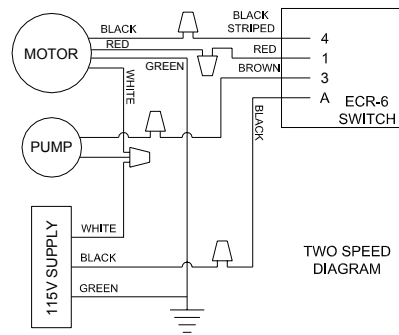
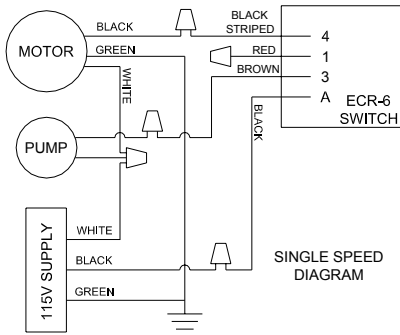
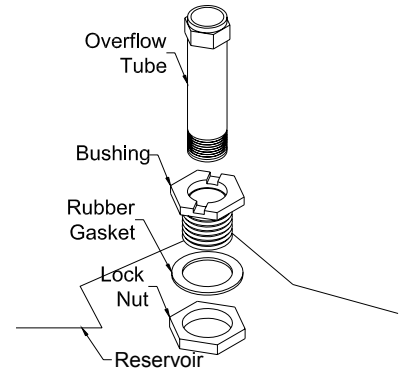
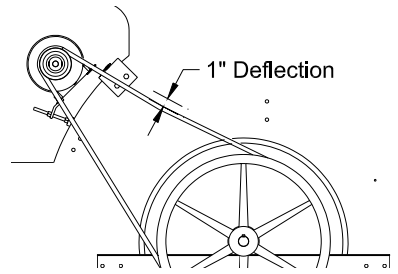
Warning: To avoid risk of electrical shock, disconnect the power before opening or attempting service on this unit.

Notice to Installer: The motor amperage must be set as close as possible to motor nameplate amps without the pump running.

WIRING DIAGRAMS

Motor starter to be equipped with overload relay sized to accommodate motor full load amps.

Motor starters and overloads are not supplied with units.



START UP

After installing cooler and before filling with water:

1. Open windows and doors or other exhaust openings in building.
2. Turn on cooler and check amperage at the incoming white lead, using clamp on ammeter. If amperage reads above motor name plate, refer to the motor pulley adjustment instructions (page 2) and open the pulley ½ turn. Restart cooler and recheck amperage. If amperage reads below motor name plate, close the pulley ½ turn. Restart cooler and recheck amperage.
3. Turn on water to cooler and ensure that connections do not leak.
4. Fill pan to ½" below top of overflow tube and ensure that the float cuts off water completely.
5. Switch the cooler to the cooling mode and check that water is flowing to the modules and that the pads are wetting evenly.

MAINTENANCE

CAUTION: Turn off all electrical power to this unit before opening or attempting any service.

Occasionally inspect your cooler for leaks, loose belt, blocked water lines, correct belt alignment or excessive residue buildup on the pads. Inspect cabinet for rust. If rust spots appear, sand and paint with a high-grade, corrosion resistant paint.

OILING

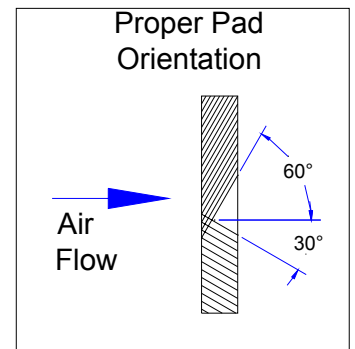
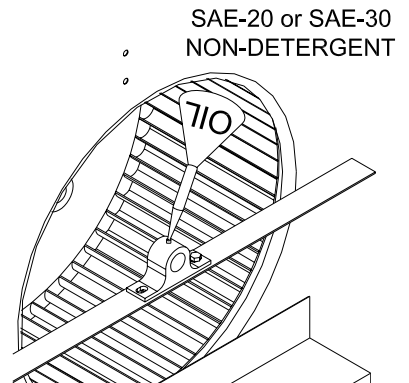
Lube the blower bearings twice per year. Use SAE 20W or 30W, non-detergent oil on bearings with oil cups and standard bearing grease on ball bearings. Oil the blower motor if it is equipped with oil holes. Some motors are permanently lubricated at the factory.

REMOVING GRILLES

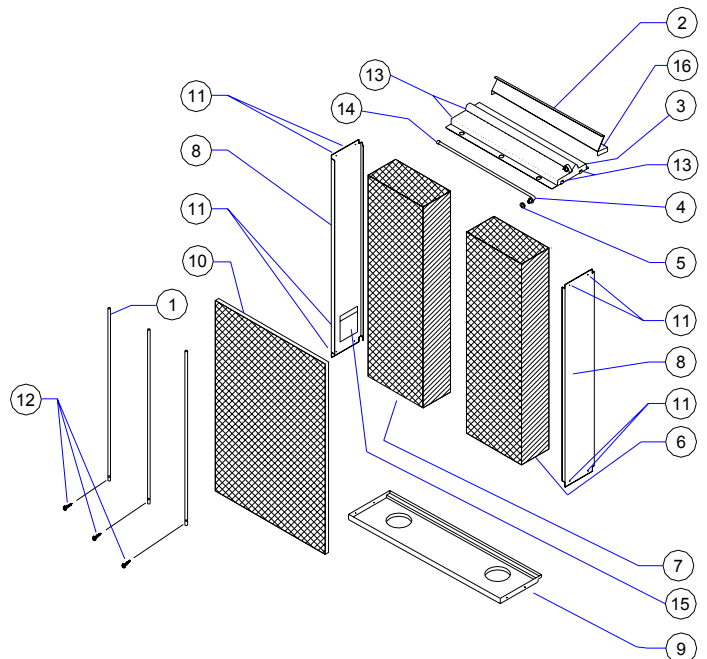
Slip a small screwdriver under a stainless steel clip and pry up until clip snaps open. Repeat for other nine clips. Ensure that grille is set in a safe place where it can not fall and/or will not be broken.

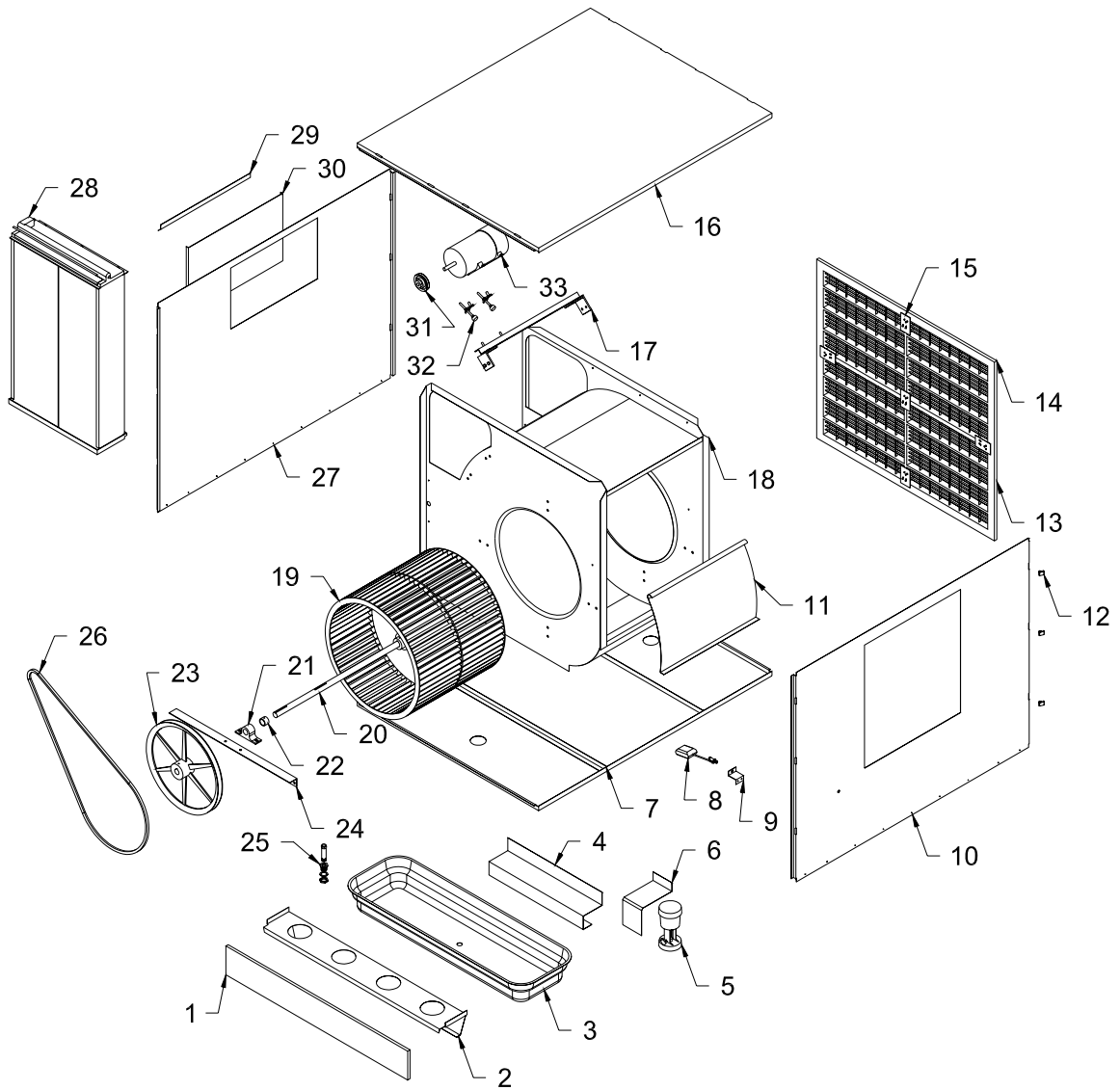
REPLACING MEDIA

1. Remove grilles.
2. Tilt top of module away from cooler and disconnect water hose.
3. Remove vertical retainers.
4. Remove polyester filter and discard.
5. Remove bottom of module.
6. Remove and replace CEL-dek. Ensure that Cel-dek is oriented properly. Improperly oriented CEL-dek will cause cooler to entrain water and blow it into building.
7. Replace polyester filter.
8. Replace bottom and vertical supports.
9. Replace module.



Item	P/N	Description
1	516142	Retainer-Vertical
2	504139	Top Support
3	523167	Channel
4	524298	Top
5	524178	Water Distributor
6	524295	Grommet
7	524101	CEL-dek
8	504138	CEL-dek
9	523176	Bottom
10	598895	Polyester Filter
11	587043	Screws
12	587003	Screws
13	588000	Tinnerman
14	524298	Rubber End Cap
15	504162	Tension Plate
16	589096	Pop Rivets





Item	Description	Qty	Part Number		Item	Description	Qty	Part Number	
			PCRD	PCRS				PCRD	PCRS
1	Reservoir cover	2	514544		18	Blower housing	1	70708	
2	Module support	2	504137		19	Blower wheel	1	70640	
3	Reservoir	2	523110		20	Shaft	1	70672	
4	Splash baffle	2	70722		21	Bearing	2	583005	
5	Pump (115V)	2	506657		22	Set collar	2	501242	
	Pump (230V)	2	506658		23	Blower pulley	1	583095	
6	Pump bracket	2	70547		24	Bearing angle	2	514699	
7	Bottom assembly	1	70710	70715	25	Overflow assembly	2	515100	
8	Float	2	524198		26	Belt	1	Sold separately	
9	Float bracket	2	514697		27	Back panel	1	70712	
10	Front panel	1	70713	70717	28	Module assembly	4	515193	
11	Blower cutoff	1	70718		29	Drip strip	1	70724	
12	Grille clip	20	30105		30	Access panel	1	70714	
13	Grille	8	29931		31	Motor pulley	1	Sold separately	
14	Grille assembly	2	515196		32	Motor adjustment assy	2	512221	
15	Grille support	10	504143		33	Motor	1	Sold separately	
16	Top assembly	1	70709						
17	Motor mount	1	70686						

Limited Warranty

This warranty is extended to the original purchaser only of an evaporative cooler installed and used under normal conditions. It does not cover damages incurred during shipping or through accident, neglect, or abuse by the owner. Essick Air Products does not authorize any person or representative to assume any other or different liability in connection with this product.

Terms and conditions of warranty

This warranty includes lifetime limited coverage on water reservoir against any leakage due to defects in material. From date of installation, if any original component part provided by Essick Air Products fails due to defect in material or factory workmanship only, Essick Air Products will provide the replacement parts as follows:

- Cabinet components for one year from date of installation
- Evaporative media for two years from date of installation

Exclusions from this warranty

- Essick Air Products is not responsible for incidental or consequential damage resulting from any malfunction.
- Essick Air Products is not responsible for any damage occurring from the use of water softeners, chemicals, descale material, or if a higher horsepower motor than what Essick Air Products recommends is used in the unit.
- Essick Air Products is not responsible for the cost of service calls to diagnose cause of trouble, or labor charge to repair and/or replace parts.

How to obtain service under this warranty

Contact the Dealer where you purchased the evaporative cooler. If for any reason you are not satisfied with the response for the Dealer, contact Customer Service Department: Essick Air Products Inc. 5800 Murray Street, Little Rock, Arkansas 72209. 1-800-643-8341.