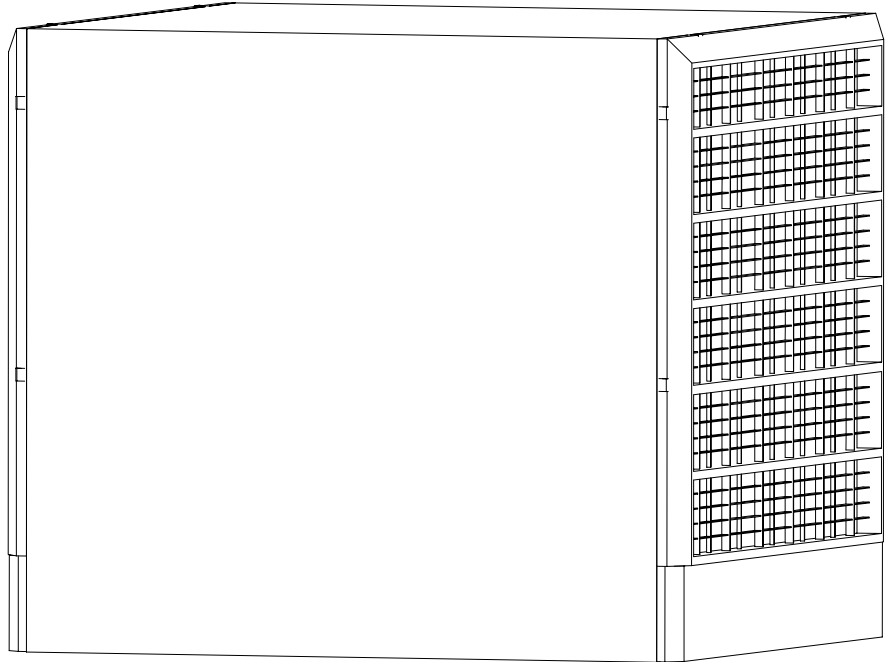




**Owner's Manual  
Model No.'s**

**PCRD/S 6600  
PCRD/S 7000  
PCRD/S 8000**



**Read & Save This  
Instruction Manual**

# **The Penguin**

**Convertible Down/Front Outlet  
Evaporative Air Cooler**

**Series II Commercial**

**IMPORTANT**

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

## 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 your home. 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. Before installation, ensure that the motor voltage, phase and horsepower are correct.
2. All electrical and duct work must comply with local and federal codes.
3. 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.

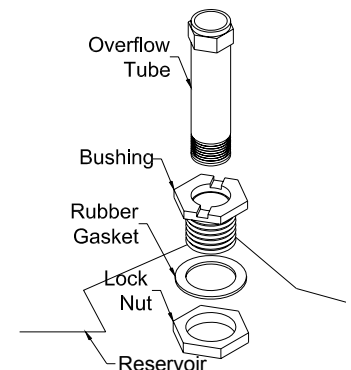
#### OVERFLOW PIPE INSTALLATION

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 ¼" 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.

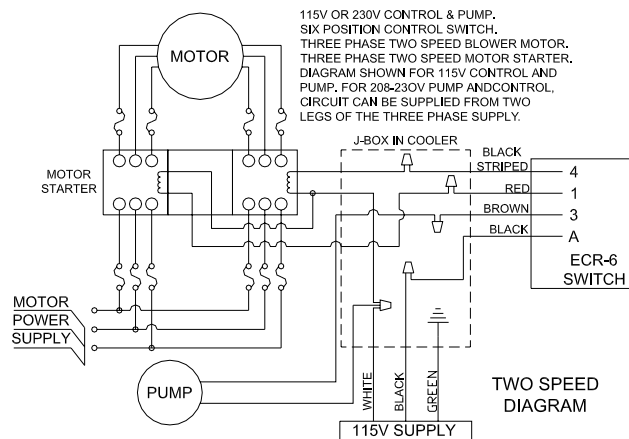
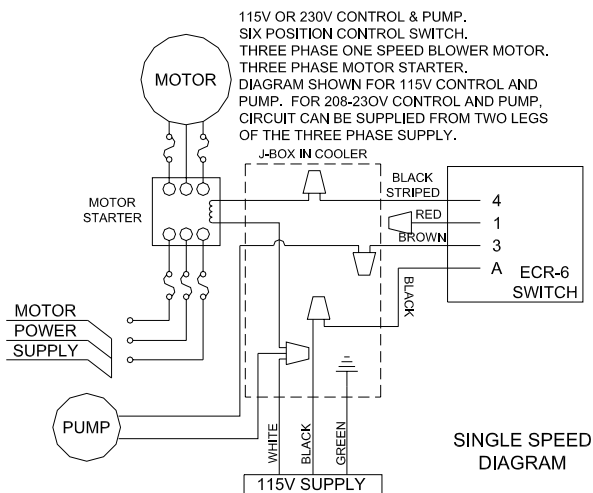
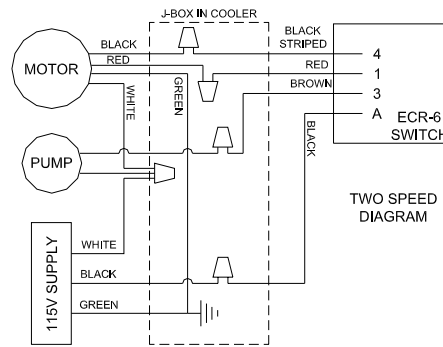
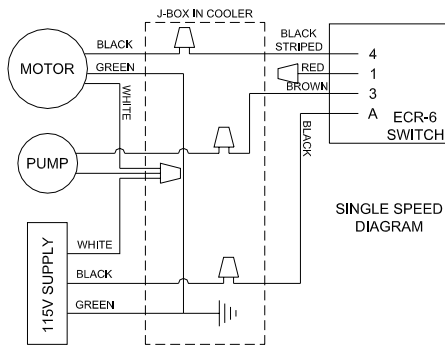
**Warning:** To avoid risk of electrical shock, disconnect the power before opening or attempting service on this unit.

**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  $\frac{1}{2}$  turn. Restart cooler and recheck amperage. If amperage reads below motor name plate, close the pulley  $\frac{1}{2}$  turn. Restart cooler and recheck amperage.
3. Turn on water to cooler and ensure that connections do not leak.
4. Fill pan to  $\frac{1}{2}$ " 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.

### 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.

### 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.

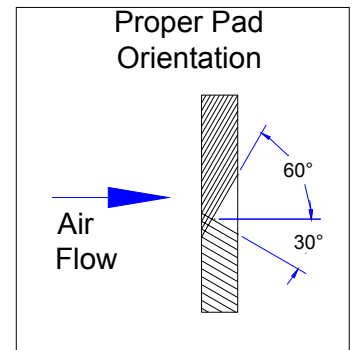
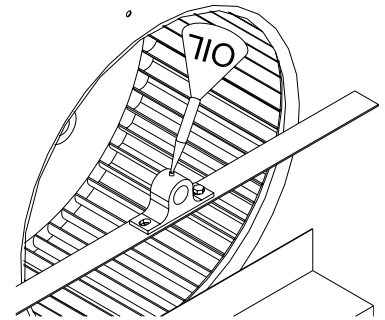
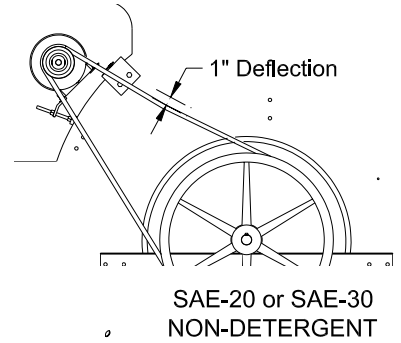
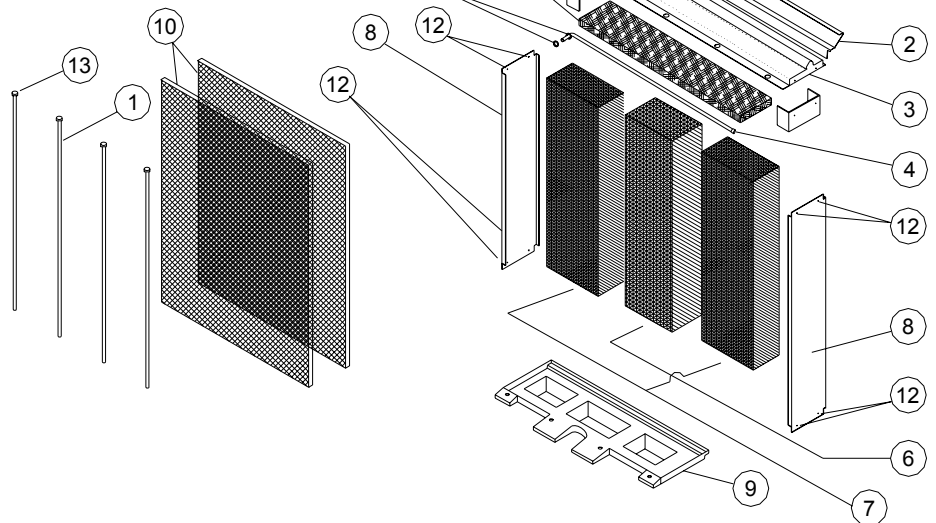
### REMOVING GRILLES

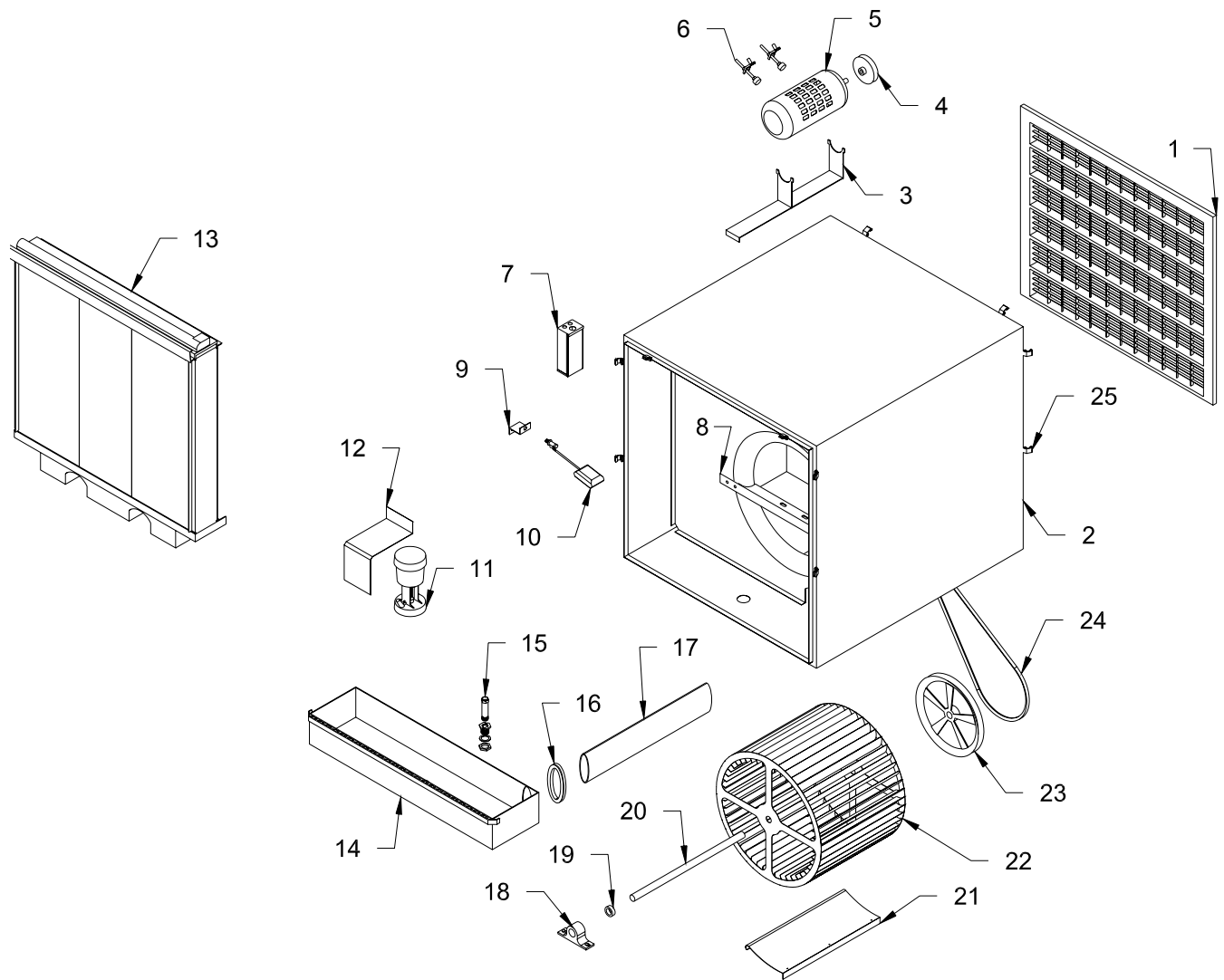
Slip a small screwdriver under a stainless steel clip and pry up until clip snaps open. Repeat for other nine clips. Ensure that grille is set in a safe place where it can not fall and or will not be broken.

### 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. Push bottom of center piece of CEL-dek out of module and remove CEL-dek.
6. Repeat for two remaining pieces of CEL-dek.
7. Install new CEL-dek and polyester filter.
8. Replace vertical supports.

Item	P/N	Description
1	516144	Retainer-Vertical
2	504167	Top Support
3	523159	Top
4	512544	Water Distributor
5	524295	Grommet
6	524088	10" CEL-dek
7	524087	12" CEL-dek
8	523158	Side
9	523160	Bottom
10	514593	Polyester Filter
11	504166	pocket
12	589096	Pop rivets
13	524099	Cap
14	514028	Distributor pad





Item	Description	Qty	Part Number	Item	Description	Qty	Part Number
1	Grill	2	29738	14	Right reservoir	1	32030-20
2	Cabinet	1			Left reservoir	1	32030-10
3	Motor mount	1	590509	15	Overflow assembly	1	515100
4	Motor pulley	1	Sold separately	16	Grommet	2	31984
5	Motor	1	Sold separately	17	Cross over tube	1	31985-02
6	Motor adjustment assy	2	512221	18	Bearing	2	583004
7	J box	1	50425	19	Set collar	2	524331
8	Bearing angle	2	514902	20	Shaft	1	516132
9	Float bracket	1	514697	21	Blower cutoff	1	30167
10	Float	1	524198	22	Blower wheel	1	30323
11	Pump (115V)	1	506657	23	Blower pulley	1	583145
	Pump (230V)	1	506658	24	Belt	1	Sold separately
12	Pump bracket	1	70547	25	Grill clip	8	30105
13	Module assembly	2	515251				

**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.