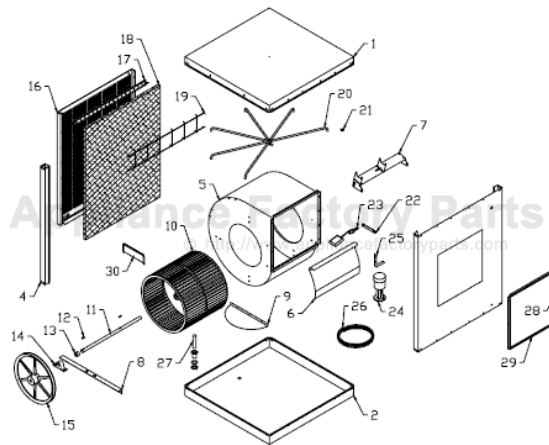


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# ESSICK CS85 Owner's Manual

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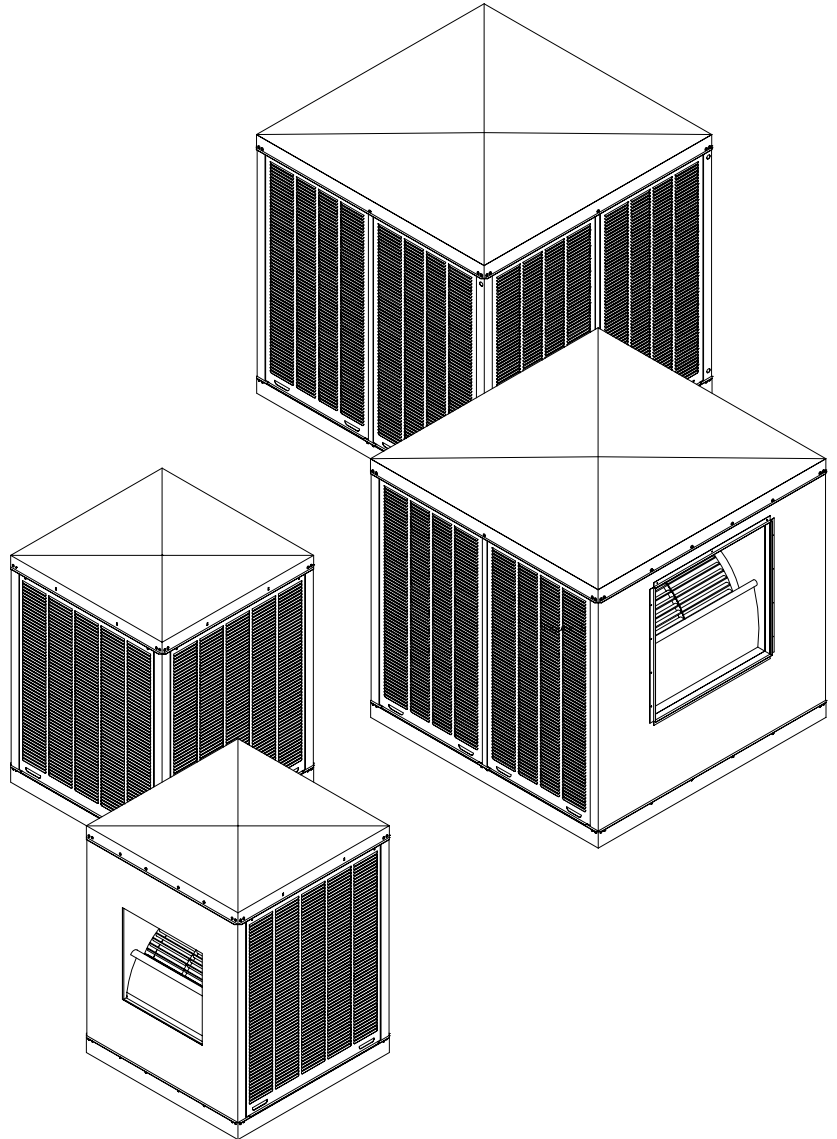
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----- Manual continues below -----



## **Industrial Commercial Owner's Guide**

- INSTALLATION
- OPERATION
- MAINTENANCE
- SERVICING



## **READ AND SAVE THIS INSTRUCTION MANUAL**

### **IMPORTANT**

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

Motor, Motor Pulley and Belt are sold separately

## **EVAPORATIVE AIR COOLER**

### **MODELS**

**CS75/85, CD75/85**

**CS11/16, CD11/16**

**CD21**

Date purchase: \_\_\_\_\_

Purchased from: \_\_\_\_\_

Manual part # 70888  
REV. 2/19/02

## 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. An opening or removable panel must be left to allow access to the drain fitting. 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 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. Mount motor on motor mount as shown.

#### CS75/85, CD75/85

Secure motor to mount using the mounting straps provided. When using motors with a 143T or 145T frame, remove the yolks from the motor mount and bolt the motor to the motor mount using the slots provided.

#### CS11/16, CD11/16 & CD21

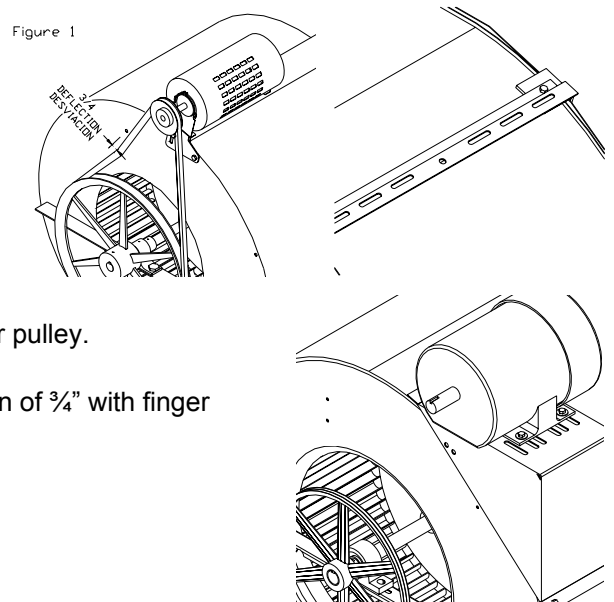
Mount the motor using the slots that align the motor pulley and blower pulley.

### BELT ADJUSTMENT

An improperly adjusted belt will greatly shorten motor life. A deflection of  $\frac{3}{4}$ " with finger force will indicate proper adjustment. (Figure 1)

Do not use the motor pulley to adjust belt tension.

Always use the motor mount to adjust the belt. (Figure 1)



## MOTOR PULLEY ADJUSTMENT

Before installing the motor pulley, loosen the set screw on the back side of the pulley and turn the outside 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 outside jaw of the pulley 4 or 5 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 front set screw. See figure 2. The CD21 coolers are equipped with double groove pulleys.

## 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

**CD75/85:** Mount the float in the splash baffle as shown. **CS75/85:** Mount the float in the float bracket. Route the 1/4" water line through the corner post as shown. Place the compression nut and ferrule onto the water line. Slide the water line into the float and tighten the compression nut. See figure 4. As the figure shows, the water level should remain 1/2" below the top of the overflow tube. A screw is provided in the float to adjust water level; or the float rod may be bent to adjust the level.

**11/16 & 21:** The float mounts in a hole provided in the corner post (down draft) or front panel (side draft).

## 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.

## 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.

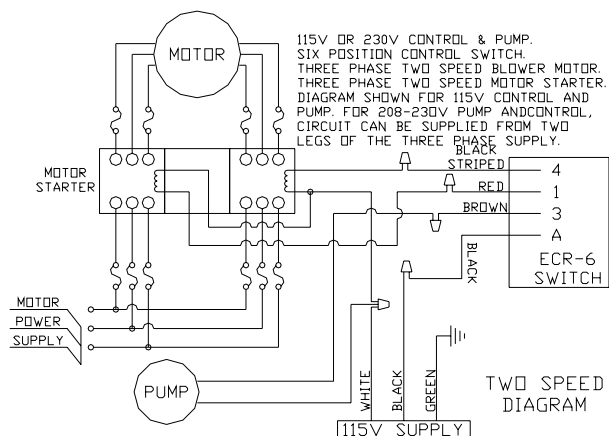
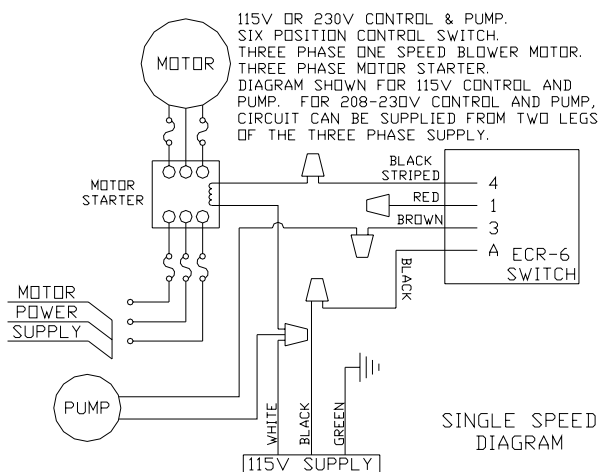
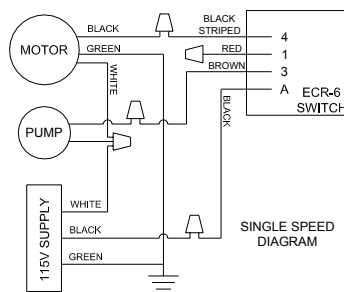
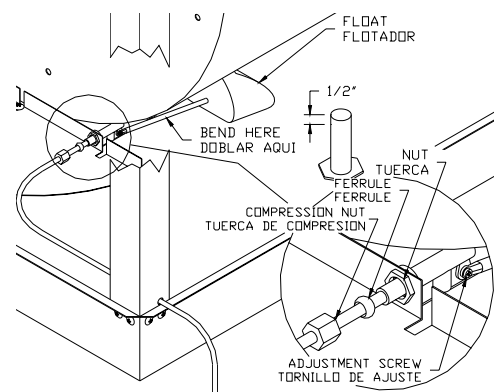
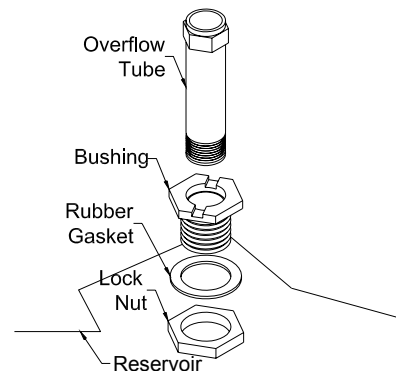
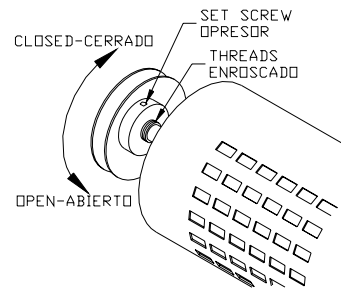
**Notice to Installer:** The motor amperage must be set as close as possible to motor nameplate amps without the pump running.

## WIRING DIAGRAMS

A 4" j box has been provided (75/85), in the unit, for wiring purposes. No other wiring components will be provided. Single phase: one and two speed.

Three phase; one and two speed. 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. Turn the switch to cool and check that water is coming from the water trays and that the pads are wetting evenly. There are screws at the top of the louvers to level the water trays.

## 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.

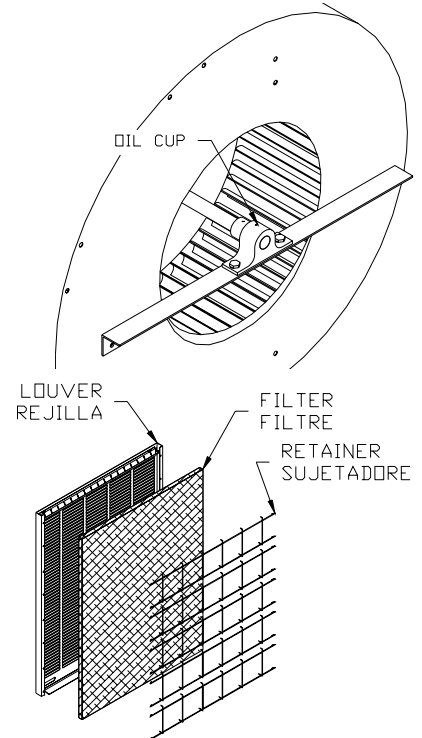
## OILING

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.

## PAD REPLACEMENT

It is best to change pads at the end of the season. When old pads (covered by minerals and salts) are left in the cooler during the wet winter months, there is a greater possibility for corrosion.

1. Remove the louver from the cooler.
2. Unhook pad retainers from the sides of the louver and remove.
3. Remove the old pad and discard.
4. Clean any dirt or sediment that has built up on louver. Inspect the water tray and clean any dirt or sediment that has built up in the water slots. If louver has rust spots, sand and paint with a high-grade, corrosion resistant paint.
5. Tuck new pad into louver, ensuring that there are no gaps to allow hot air to bypass the pad.
6. Replace the pad retainers.



## LIMITED WARRANTY

**This warranty is extended to the original purchaser only.** 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 cooler.

## TERMS AND CONDITIONS OF WARRANTY

The **BOTTOM PAN** is guaranteed against leakage due to rusting out for **Five Years**. All other original parts provided by Essick Air Products are warranted against defects in material or factory workmanship for One Year.

## EXCLUSIONS FROM THE 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 from the dealer, contact Customer Service Department: Essick Air Products Inc. 5800 Murray Street, Little Rock, Arkansas 72209. Phone 1-800-643-8341

**CS75/85 & CD75/85 REPLACEMENT PARTS / REPUESTOS**

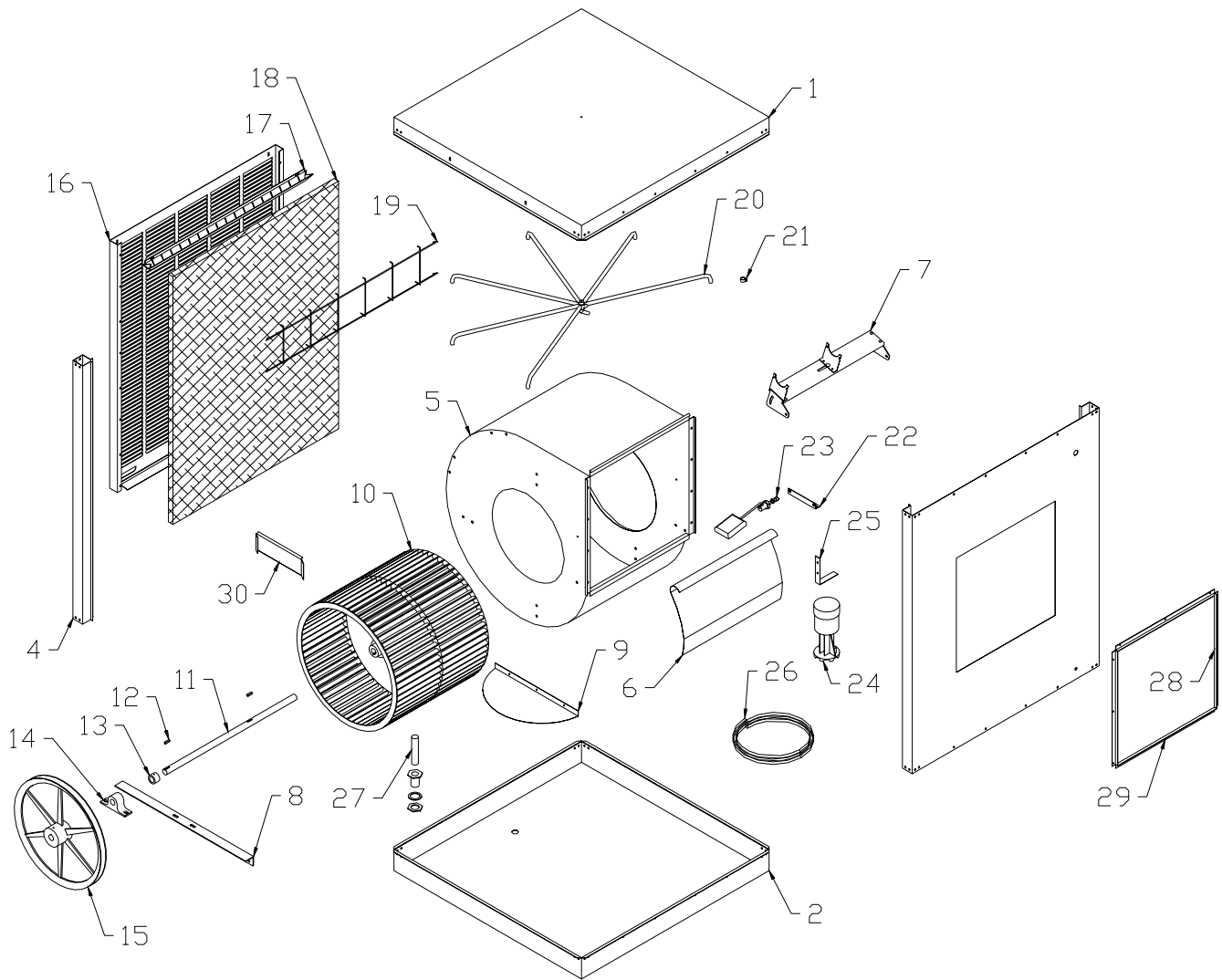
ITEM	DESCRIPTION	DESCRIPCIÓN	CS75/85		CD75/85	
			PART NO. NO. DE REF.	QTY. CAN.	PART NO. NO. DE REF.	QTY. CAN.
1	TOP	SUPERE	70410	1	70380	1
2	BOTTOM	FONDO	70411	1	70398	1
3	FRONT	FRENTE	70414	1	***	***
4	LEFT CORNER POST	POST ESQUINERO LEFT	70475	1	***	***
4	RIGHT CORNER POST	POST ESQUINERO RIGHT	70384	1	***	***
4	CORNER POST	POSTE ESQUINERO	***	***	70481	4
5	BLOWER HOUSING	CAJA DEL VENTILADOR	70402	1	70402	1
6	CUTOFF	TAPA DE LA CAJA DEL VENTILADOR	70395	1	70395	1
7	MOTOR MOUNT	MONTAJE DEL MOTOR	70408	1	70408	1
8	BEARING ANGLE	ANGULO PARA CHUMACERA	70393	2	70393	2
9	SPLASH BAFFLE	DEFLECTOR	***	***	70444	2
10	BLOWER WHEEL	EL SOPLADOR RUELA	70403	1	70403	1
11	BLOWER SHAFT	EJE DEL VENTILADOR	70438	1	70438	1
12	KEY	PASADOR	589041	2	589041	2
13	SET COLLAR	COLLAR FIJO	501243	2	501243	2
14	BEARING	CONJINETE	583004	2	583004	2
15	PULLEY	POLEA DEL VENTILADOR	583035	1	583035	1
16	LOUVER	LA REJILLA	70385	3	70385	4
17	WATER TRAY	LA AGUA EL BANDEJA	70397	3	70397	4
18	FILTER SET	FIJO DE FILTRE	70485	1	70486	1
19	PAD RETAINER	RELLENE RETENEDOR	70396	15	70396	20
*	LOUVER ASSEMBLY	JUEGO DE REJILLA	70399	3	70399	4
20	WATER DISTRIBUTOR	DISTRIBUIDOR DE AGUA	70405	1	70404	1
21	WATER TUBE HOLDER	EL TENEDOR DE CAÑO DE AGUA	524304	6	524304	8
22	FLOAT BRACKET	ABRAZADERA DEL FLOTADOR	70413	1	***	***
23	FLOAT VALVE	VÁLVULA FLOTADORA	524198	1	524198	1
24	PUMP	BOMBA	506605	1	506605	1
25	PUMP BRACKET	ABRAZADERA DE LA BOMBA	70488	1	70488	1
26	WATER HOSE	MANGUERA DEL AGUA	598400	60"	598400	60"
27	OVERFLOW KIT	EQUIPO DE DESBORDIMIENTO	515100	1	515100	1
28	DUCT FLANGE	LA BRIDA	70419	1	***	***
29	BOTTOM DUCT FLANGE	LA BRIDA BOTTOM	70576	2	***	***
30	BLOWER BRACE	ABRAZADERA DEL VENTILADOR	70483	2	70394	4

Motor, pulley and belt sold separately.

\*Louver assembly includes louver, water tray, pad and pad retainers.

El motor, la polea y la banda se venden por separado.  
El juego de rejilla incluye la rejilla, la charola para agua, filtro y sujetadores de los filtros.

CS75/85 & CD75/85 REPLACEMENT PARTS / REPUESTOS



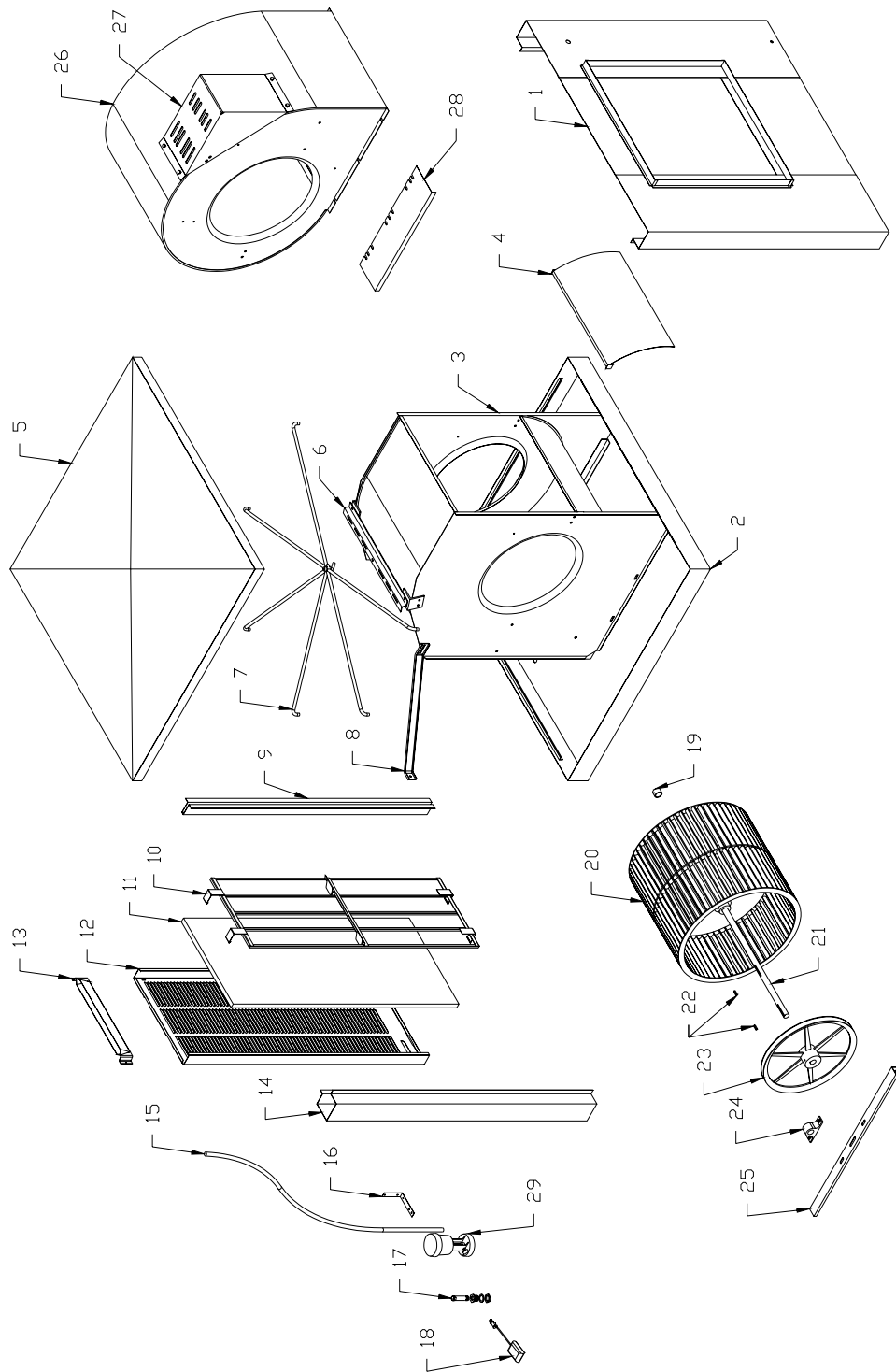
To order replacement parts, please call "The Cooler Hotline" at 1-800-643-8341. To ensure prompt service, have the following information available.

Cooler Model # \_\_\_\_\_

Manual # and Revision Date \_\_\_\_\_

Purchased From \_\_\_\_\_

# CS11/16, CD11/16 & CD21 REPLACEMENT PARTS / REACCIONES



To order replacement parts, please call "The Cooler Hotline" at 1-800-643-8341. To ensure prompt service, have the following information available.

Cooler Model # \_\_\_\_\_

Manual # and Revision Date \_\_\_\_\_

Purchased From \_\_\_\_\_



CS11/16, CD11/16 & CD21 REPLACEMENT PARTS / REACCIONES

ITEM	DESCRIPTION	DESCRIPCIÓN	CS11/16		CD11/16 & CD21	
			PART NO. NO. DE REF.	QTY. CAN.	PART NO. NO. DE REF.	QTY. CAN.
1	FRONT	FRENTE	70697	1	***	***
2	BOTTOM	FONDO	70702	1	70681	1
3	BLOWER HOUSING	CAJA DEL VENTILADOR	70703	1	***	***
4	CUTOFF	TAPA DE LA CAJA DEL VENTILADOR	70705	1	70694	1
5	TOP	SUPERE	500220	1	500220	1
6	MOTOR MOUNT	MONTAJE DEL MOTOR	70687	1	70687	1
7	WATER DISTRIBUTOR	DISTRIBUIDOR DE AGUA	500713	1	500712	1
8	BLOWER BRACE	ABRAZADERA DEL VENTILADOR	500852	2	500852	2
9	CENTER POST	POSTE CENTRO	501466	3	501466	4
10	PAD RETAINER	RELLENE RETENEDOR	500603	6	500603	8
11	FILTER	FILTRE	524093	6	524093	8
12	LOUVER	LA REJILLA	501352	6	501352	8
13	WATER TRAY	LA AGUA EL BANDEJA	500677	6	500677	8
*	LOUVER ASSEMBLY	JUEGO DE REJILLA	503396	6	503396	8
14	CORNER POST	POST ESQUINERO	500098	1	500098	2
15	WATER HOSE	MANGUERA DEL AGUA	598400	60"	598400	60"
16	PUMP BRACKET	ABRAZADERA DE LA BOMBA	70488	1	70488	1
17	OVERFLOW KIT	EQUIPO DE DESBORDIMIENTO	515100	1	515100	1
18	FLOAT VALVE	VÁLVULA FLOTADORA	524198	1	524198	1
19	SET COLLAR	COLLAR FIJO	501242	2	501242	2
20	BLOWER WHEEL	EL SOPLADOR RUEDA	70640	1	70640	1
21	BLOWER SHAFT	EJE DEL VENTILADOR	70672	1	70672	1
22	KEY	PASADOR	589041	2	589041	2
23	PULLEY	POLEA DEL VENTILADOR	583095	1	583095	1
24	BEARING	CONJINETE	583005	2	583005	2
25	BEARING ANGLE	ANGULO PARA CHUMACERA	514498	2	514498	2
26	BLOWER HOUSING	CAJA DEL VENTILADOR	***	***	70688	1
27	MOTOR MOUNT (CD21)	MONTAJE DEL MOTOR (CD21)	***	***	512491	1
28	SPLASH BAFFLE	DEFLECTOR	***	***	501464	2
29	PUMP	BOMBA		1		1

Motor, pulley and belt sold separately.

\*Louver assembly includes louver, water tray, pad and pad retainers.

El motor, la polea y la banda se venden por separado.  
El juego de rejilla incluye la rejilla, la charola para agua, filtro y sujetadores de los filtros.