

**EM Series Models:
EM-1 & EM-2**

Breezair

DUCTED FRESH AIR COOLING

INSTALLATION INSTRUCTIONS

FOR EM SERIES

**WHOLE HOUSE EVAPORATIVE
AIR COOLERS**

*Safety Instructions
Pre-assembly Inspection
Installation Details
Water Connection
Electrical Connection
Operating Adjustments
Maintenance Instructions
Troubleshooting
Exploded Views and Parts List
Installation Report and Check List*

cenvair

COOLER CORPORATION

This instruction booklet covers the base cooler only.
***If the cooler is to be fitted with one of the optional kits -
additional instructions will be found with these kits.***

Installer

*Please ensure that the operating and installation checks are complete
(see rear page) and that this booklet is left with the customer.*

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Important Safety Instructions and Warnings

WARNING: The warnings and safety instructions in this manual must be followed to reduce the risk of fire, electric shock, or injury, and to provide reasonable safety and efficiency in using this cooler. The operator is responsible for following the warnings and instructions in this manual and on the cooler.

Read the entire Installation Instruction Manual before proceeding to install the cooler.

Restrict the use of this cooler to persons who read, understand and follow the warnings and instructions in this manual and on the cooler. Never allow children to operate the cooler. **Failure to observe these warnings and instructions will void manufacturer's warranties and discharge the manufacturer of all liability.**

CAUTION:

ALWAYS disconnect the cooler from the power supply before commencing maintenance procedures.

During maintenance procedures:

NEVER use a naked flame for any inspection or cleaning purpose as a fire could be caused as a result of a flame coming into contact with the cooler's structure.

Avoid Dangerous Situations:

Protect the cooler from all sources of ignitions because polymers and filter pads will burn.

NEVER use a water hose to squirt the cooler's interior for cleaning as residual water could damage electrical components and create the risk of fire and/or electric shock to the user after re-

Installation, Repair and Operation

• All installation and repair work must conform to local electrical, water supply and environmental codes, rules and regulations and applicable national standards.

• All installation, maintenance and repair work must be done by a licensed and qualified electrician and/or a qualified, experienced heating, ventilation, air conditioning technician. All installation, maintenance and repairs must be made with factory authorized parts only.

• Disconnect electrical power at the fuse or circuit breaker box before you begin installing. When performing maintenance on the cooler, turn "OFF" the isolating switch located on the junction box inside the cooler (refer Fig. 1). Then disconnect the fan motor and pump plugs from the junction box.

• Use only a voltage supply as shown on the nameplate of the motor.

• Do not install or service the cooler during rain, high wind, or severe weather conditions.

• Keep children, bystanders and animals at a safe distance, a minimum of 30 feet (10 m) away from working area.

• Dress safely. Wear non-skid shoes when working on the roof. Do not wear loose clothing or accessories while installing or doing maintenance to the cooler as they may get caught in moving parts.

• Keep loose hair, loose clothing, fingers and all other parts of the body away from openings and moving parts.

A cooler's manufacture date can be identified by observing the unit's serial number.

YEAR OF
MANUFACTURE

SERIAL NO. EM 019861532

ILL824-A

• Check the cooler for worn, loose, missing, or damaged parts before operation.

• If you work with power tools, wear protective eyewear and gloves.

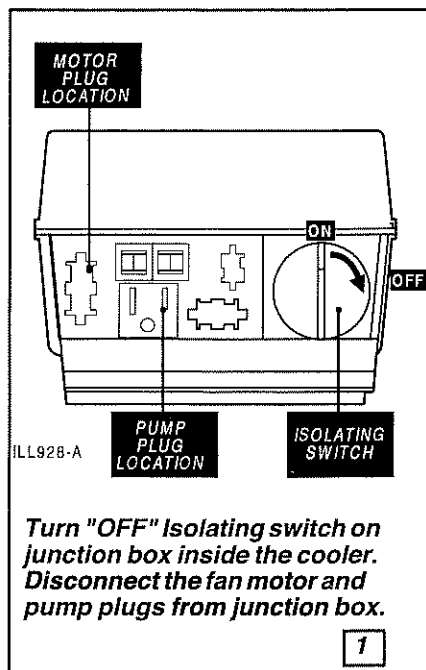
• Take care in raising the cooler to the roof for installation. Use safe equipment and never try to raise the cooler alone, always have assistance. Failure to take such precautions could result in damage to the cooler and the building or injury to yourself.

• Ground Fault Circuit Interrupter (GFCI) protection should be provided on the circuit used for this cooler. Receptacles are available having built-in GFCI protection and may be used for this measure of safety.

• Never drain the cooler onto the roof. Connect a hose from the drain fitting to a drain or gutter. Water residue could stain the roof or cause you to slip.

• Always use the correct tools.

• **WARNING: The plastic covering this cooler can be a safety hazard. Please dispose of carefully.**



Turn "OFF" Isolating switch on junction box inside the cooler. Disconnect the fan motor and pump plugs from junction box.

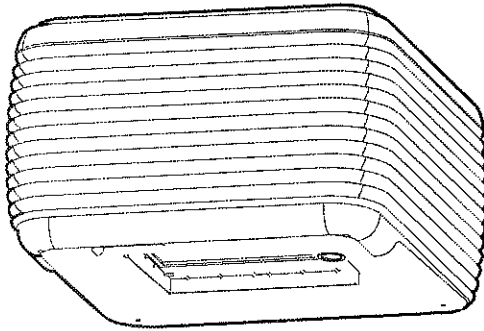
1

Warning:

In cases where bleed off is not used, pads will require frequent inspection and replacement. Failure to do so will create a situation where water may leak into the home or on the roof, which may cause an electrical shock or fire hazard. Where this condition is allowed to exist, CONVAIR accepts no responsibility for any damage that may occur.

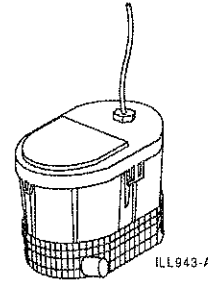
EM SERIES

Check that the correct cooler has been supplied the base cooler should have the following parts:
(To ensure pump is fitted, remove pad frame. Refer removing pad frame page 5)



☐ CABINET

ILL944-A

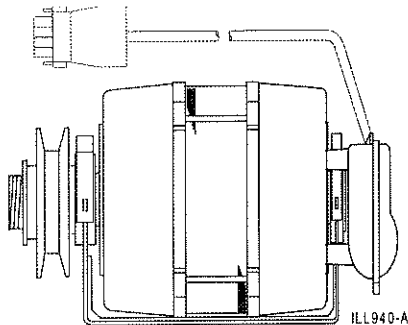


ILL943-A

☐ CP4 MAGNA DRIVE PUMP
ALREADY INSTALLED IN
CABINET.

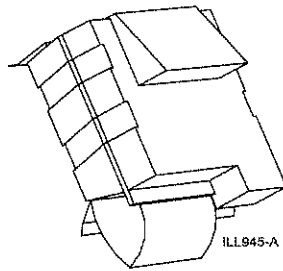
Check that the correct power pack has been supplied :

POWER PACK



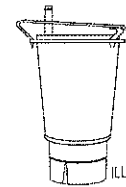
ILL940-A

☐ MOTOR + PULLEY
+ CRADLE +
MOTOR CORD



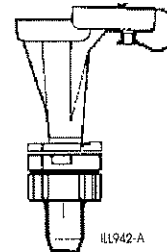
ILL945-A

☐ JUNCTION BOX



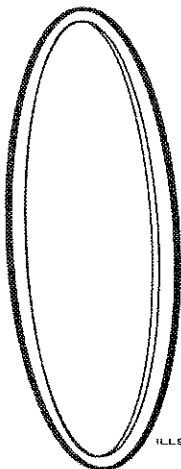
ILL941-A

☐ OVER FLOW
WATER MANAGER



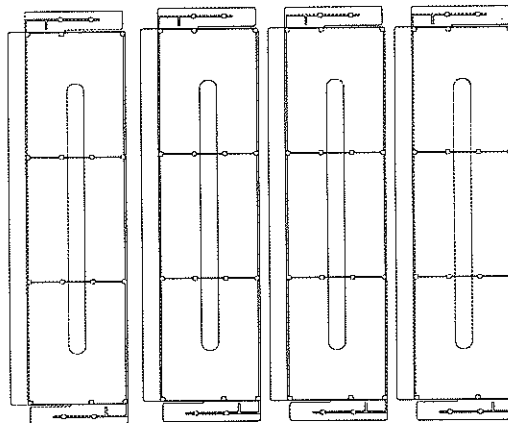
ILL942-A

☐ BLEED FUNNEL
ASSEMBLY



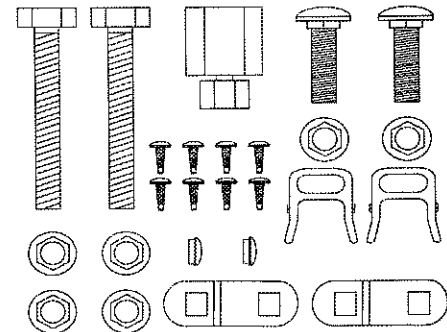
ILL946-A

☐ V - BELT



ILL927-A

☐ ROOF JACK
ADAPTORS



ILL926-A

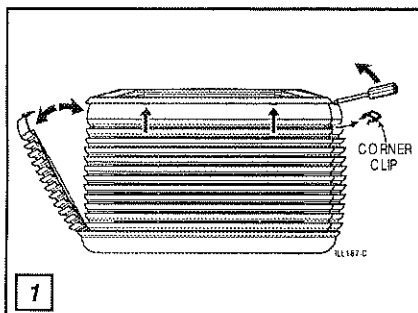
☐ HARDWARE KIT

Removing Pad Frames

Remove pad frames (see Fig. 1). Each pad frame is clipped into the cooler and is removed by using a medium sized screwdriver. First, disconnect each pad frame clip, then insert the screwdriver into the small slots at the top of the pad frame and lever upwards. The pad frame is now free to be lifted out of the cooler's cabinet.

Replacing Pad Frames

To replace the pad frame ensure that it is the right way up, i.e. with the louvres facing upwards. Fit the pad frame in at the bottom of the cabinet and then push the top in. The pad frame should clip into the cooler with a sharp push of the hand at the two points where the screwdriver was used. Replace pad frame clips.



Cooler Location

Check the proposed cooler location first, to ensure that it is structurally capable of supporting the weight of the cooler.

Polymer coolers are light but they need adequate support. The operating weight of the largest cooler in this range is about 185 lbs (84 kgs).

Always locate the cooler where it will receive a plentiful supply of fresh air and not in a recess where it may be short of air or where the air is polluted. **Keep the cooler away from heater flues, exhausts (especially those associated with kitchens) and other possible sources of ignition. Avoid dangerous situations.**

Allow for adequate access around the cooler for maintenance. Provision must be made for access to electricity, water supplies and drains.

It is essential that water cannot enter the building as a result of inadequate sealing (caulking or flashing) of the mounting stand, ductwork system and service pipes (electricity, water).

Mounting the Air Cooler

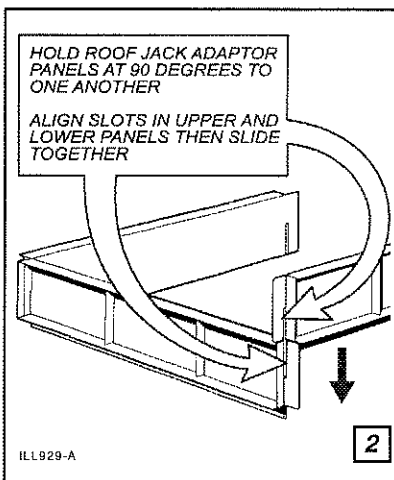
New Installation, Roof Jacks:

Use 24 gauge or stronger metal roof jack. The cooler then may be attached directly to it.

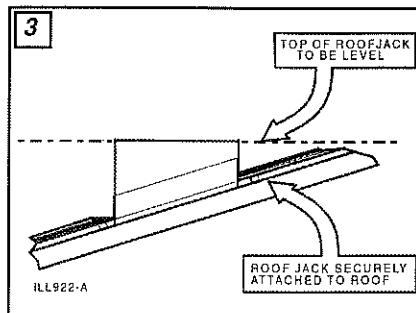
Replacement Cooler Installation, Roof Jacks:

Roof jack preferred size, is to be 24 gauge steel or stronger. The supplied roof jack adaptor may be required to attach to the cooler to the existing roof jack.

For assembly of roof jack adaptor see Fig 2.



NOTE: It is recommended that a strip of foam tape or sealant is applied to the upper flange of the roof jack adaptor and to the flange on the roof jack before securing the cooler to provide an airtight seal.

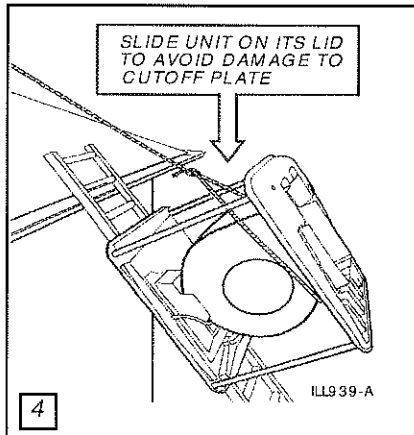


Ensure that the top of the roof jack is level, then check lip of the pan/tank for level when the unit is in position on the roof jack (see Fig. 3).

Raising Cooler to Roof

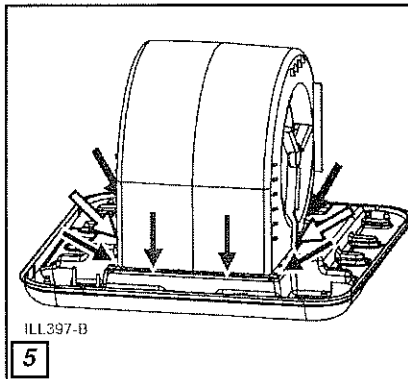
Do not drop the air conditioner. Always handle with care.

For lifting or pulling purposes when using ropes or slings, always apply the ropes around the full cabinet or the blower housing and never tie them to any of the four (4) round corner posts.

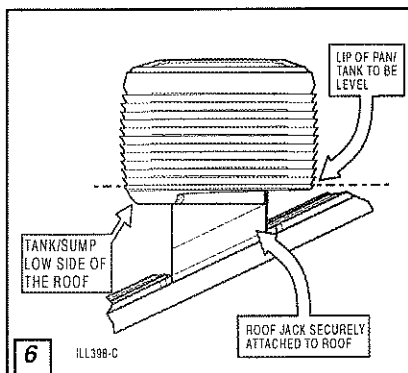


WARNING:

Take care that the ends of ladders, etc don't penetrate into the opening of the air conditioner as the cut-off plate may be damaged. If pulling the unit onto the roof and using a ladder as a slide we strongly recommend putting the unit upside down on the ladder (see Fig. 4). It is desirable to protect the lid from scratching, so use some material between unit and ladder eg. cardboard. After installing the unit check that all spreaders are in their correct position.



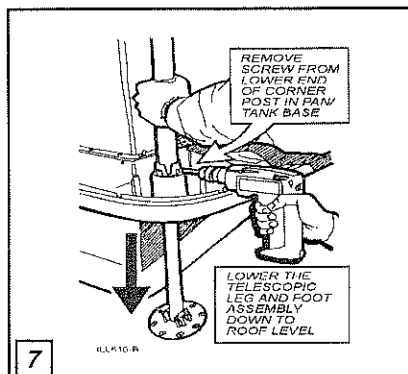
Attach the cooler to the roof jack from inside the cooler (as shown in Fig. 5) using 1 1/4" long self drilling and self tapping screws. Use a minimum of 6 screws. In high wind areas or where not using leg supports use a minimum of 8, 3 per side and 2 at the front.



The pan/tank sump is designed to be placed on the low side of the roof. (as shown in Fig 6)

Never force parts to fit because all parts are designed to fit together easily without undue force.

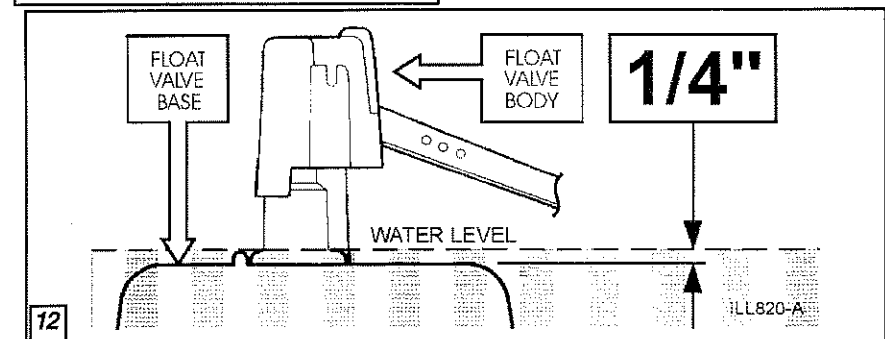
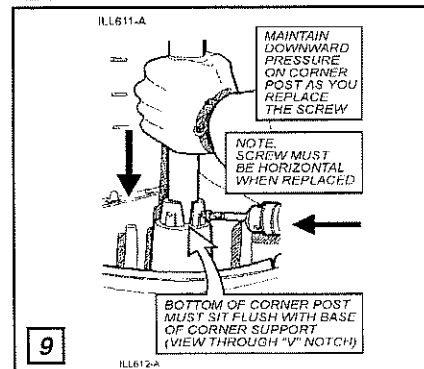
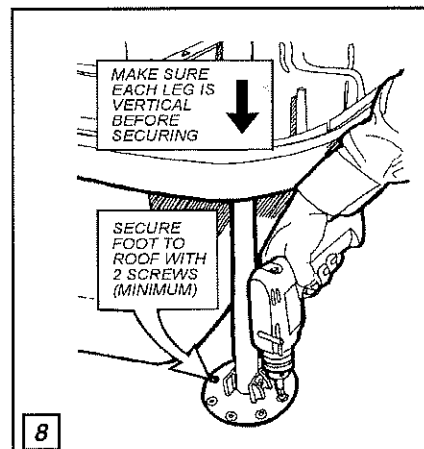
Never drill any holes in the primary base surface of the bottom tank (reservoir) of the air conditioner nor in the side walls of the tank.



Securing Leg Supports

After levelling and securing the unit on the roof jack you are ready to fix the four leg supports in position. The telescopic leg supports (with feet attached) slide up and down inside the cooler's corner posts. By removing the screw from the lower end of each corner post you enable the leg support to slide down to roof level. Refer figures 7, 8 & 9 for the procedure for adjusting and securing the leg supports.

The legs are not full weight bearing and only for additional support in case of weak ducting, high winds, etc.

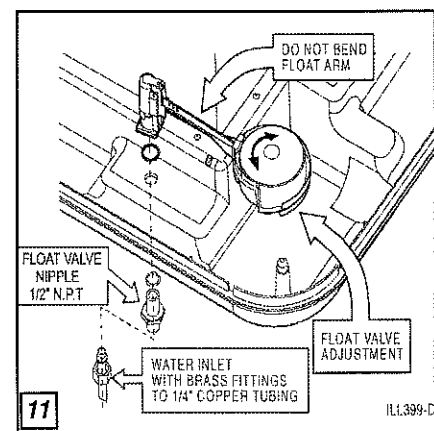
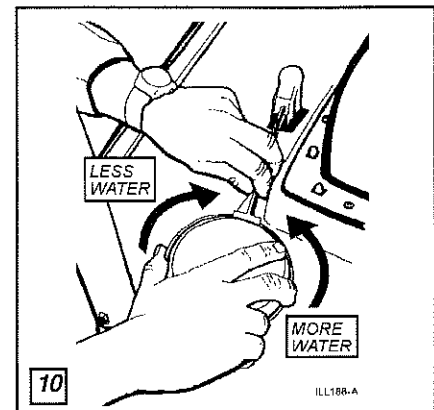


Water Installation

A permanent water supply is required to be connected to the float valve which is factory fitted inside the cooler.

The float valve controls the level of water in the pan/tank automatically and is adjusted by rotating the large plastic float at the end of the float arm (see Fig. 10)

The water connection point is located on the underside of the pan/tank at the point where the float valve nipple protrudes from the bottom (see Fig. 11).



Water Installation.....cont..

Install a manual water connection shut-off valve external to and in the vicinity of the cooler. This allows the water supply to be isolated whenever work needs to be done on the cooler. **In areas subject to freezing, the water line needs a drain down facility.** Do not fit the shut-off valve directly onto the float valve nipple (See Fig. 11, page 6).

NOTE: Flush the water pipe to remove any foreign material then connect it to the float valve nipple.

Always ensure that the copper pipe connection to the float valve does not place sideways strain onto the float valve. Run the pipe straight into the valve.

Overflow / Bleed-off Fitting

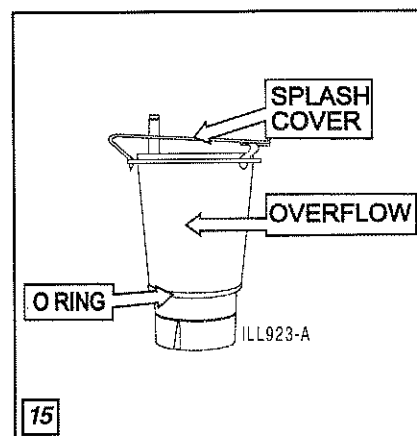
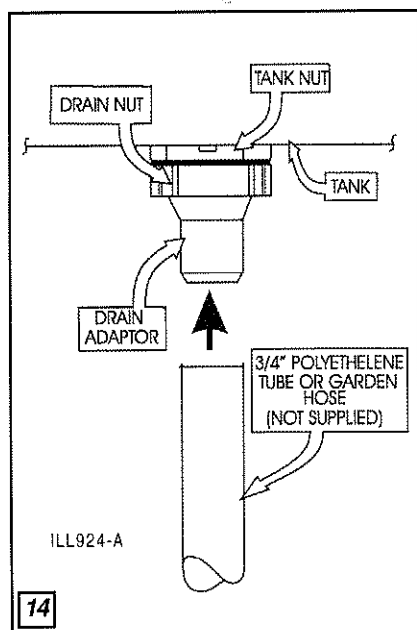
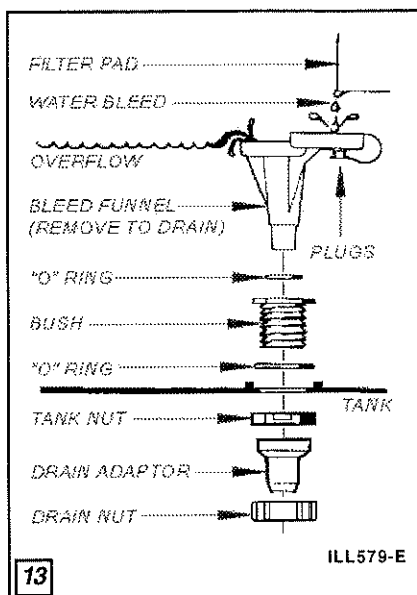
Evaporative air coolers are usually equipped with a "bleed-off" function which will reduce the level of salt build up in the pan/tank. The continuous bleeding of a small amount of water to drain ensures that fresh water is allowed in, to dilute the salt in the pan/tank.

A special plastic overflow bleed-off fitting is supplied in the Power Pack. It acts as an overflow, a bleed-off and a drain.

Depending on local codes, **Drain water** from the overflow/drain outlet must be carried away through a pipe to a suitable discharge point on the building or property (usually the drain or gutter). The pipe may be any material allowed by local code which will withstand direct sunlight and weathering. Minimum recommended drain size 3/4" bore.

Make sure that it is correctly located in relation to the pad frames and that the large o-ring is on before placing it into the hole. The nut must be screwed up tightly (by hand) underneath the cooler (see Fig. 13).

If using 3/4" polyethylene or garden tubing, slip it over the adaptor and with the lock nut (finger tight) (see Fig. 14). Once the fitting is correctly installed it will act as an overflow if the water level reaches an unsafe height. It also acts as a bleed-off, allowing a small amount of water to drain off continuously so as to limit the build up of salts in the water. To clean Pan/Tank un-clip the two (2) plastic spring clips the fitting can be lifted away from the bottom hexagonal nut and this will let the water drain away completely.



Do not lose the o-ring fitted to the overflow.

To properly adjust the bleed-off, proceed as follows:

(1) Remove the pad frame adjacent to the bleed-off assembly.

(2) Fit all the plastic plugs into the bleed tray.

(3) Replace the pad frame and start the cooler on high speed with the pump running. Wait a few minutes for the cooler to reach full performance.

(4) With all the plugs inserted, bleed is maximum. If you decide the amount of bleed is too much, then remove plug/s from the bleed tray one at a time until the desired amount is achieved. With all the plugs removed a minimum amount of bleed will still occur as determined by the manufacturer.

In some cities in the U.S.A. it is illegal to bleed water to drain and therefore the bleed-off function must be inoperative. This is achieved by fitting the overflow (see Fig. 15). The overflow is also used if the optional accessory Water Manager is purchased.

Water Level

Turn on the water supply and allow the pan/tank to fill with water. The float valve will eventually stop the water from entering the cooler. Wait for this to happen and observe the water level.

If the level is too low, rotate the large float **counter clockwise** (see Fig. 10, page 6). If the level is too high, rotate **clockwise**.

Continue this procedure until the water level remains at about the top of the water valve support in the pan/tank. This setting on a new cooler will allow for some seating of the valve seals which will cause the water level to rise slightly.

Set the water level to approx. 1/4" above the float/valve support (see Fig. 12, page 6).

The water level should never be adjusted with the cooler and pump running because the water in the pads will run back into the pan/tank and might overflow.

Water Pump

The water pump is supplied with the cooler and is factory fitted into its correct location. Ensure that it is properly secure and upright as intended.

Under no circumstances must the pump run dry

There is no need to adjust the water flow since the cooler is designed to operate with maximum cooling at low air velocities.

Water Pump Replacement

Factory authorized pumps are fitted with thermal overload protection. Water pumps may seize up and overheat, creating a fire risk. Pumps that have thermal overload protection are designed to shut off the pump if the motor overheats.

Factory Authorized Water Pumps

Breezair EM-1 and EM-2 coolers:

- Seeley Magnadrive (Part No. 095424)

"Power Clean" Style Timed Pumps

Under no circumstances are "Power Clean" style timed pumps to be used in any Breezair cooler.

Use of these devices, or any other non approved device, will cause serious damage to the special safety circuits of this cooler. **Failure to follow this instruction will VOID ALL WARRANTY and may create severe risk of electric shock and fire!**

Warning:

In cases where bleed off is not used, pads will require frequent inspection and replacement. Failure to do so will create a situation where water may leak into the home or on the roof, which may cause an electrical shock or fire hazard. Where this condition is allowed to exist, CONVAIR accepts no responsibility for any damage that may occur.

Electrical Installation

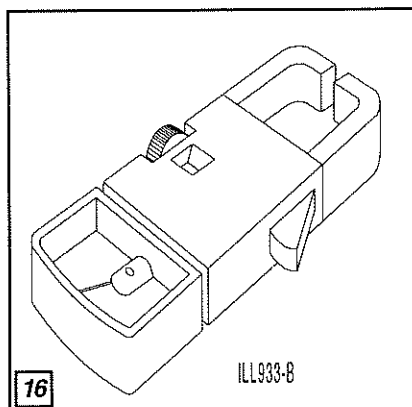
WARNING: When retro fitting the cooler to an existing installation always turn off the electrical power at the source of the wiring. **Do not take risks.** Turn off and tape over the circuit breaker or remove the fuses completely and keep them with you until the job is complete. Set cooler, isolator switch, wall switch, motor and pump to "off". Be sure to tell other occupants of the building what you are doing.

WARNING: Check to be sure that the voltage rating of the cooler is compatible with your electrical system voltage.

The electrical installation must be carried out by a licensed and qualified electrician.

Sub-circuit wiring should be rated at unit rated amps or larger, and must be protected by a suitable fuse or circuit breaker.

Before leaving the installation a trained, licensed technician must check that the cooler is operating correctly and **must set the motor full load amps using a clip on ammeter (see Fig. 16).** Make the adjustment at the adjustable motor pulley (sheave). See later. (Pg 11, 12 & 17)



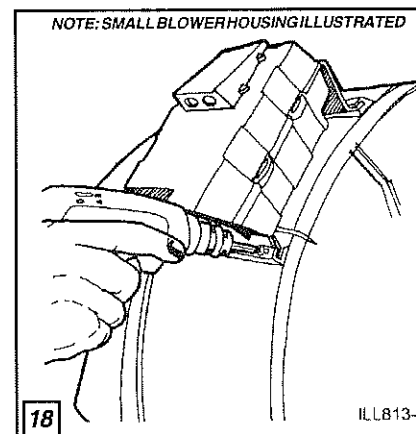
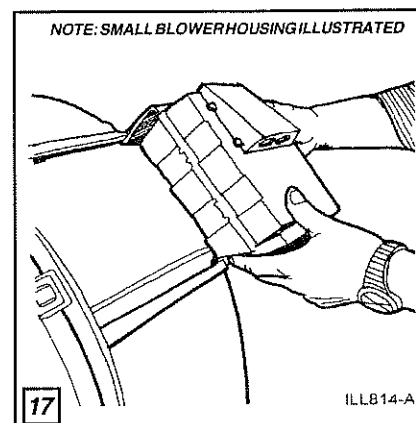
The electrical wires are to be double insulated all the way into the cooler's junction box.

Ensure that all electrical connections are tight. Loose connections cause overheating which can result in machine malfunction or fires.

Replace all covers when work is completed using only the screws supplied.

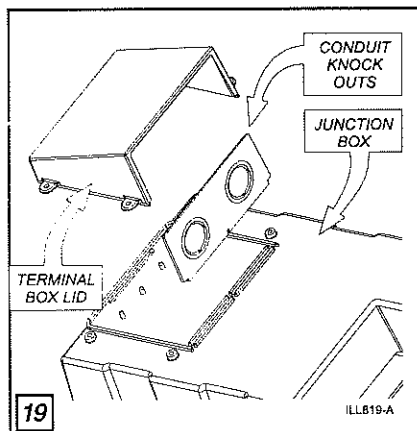
The Power Pack supplied with this cooler includes a junction/terminal box assembly. Clip junction box onto the blower housing (see Fig. 17). A screw is required to lock the junction box into position (see Fig. 18).

Electrical connections must only be made in the junction box provided (see Fig. 19 Page 9). **The main junction box is factory sealed, do not attempt to open the junction box, there are no field terminations or servicable parts within.**



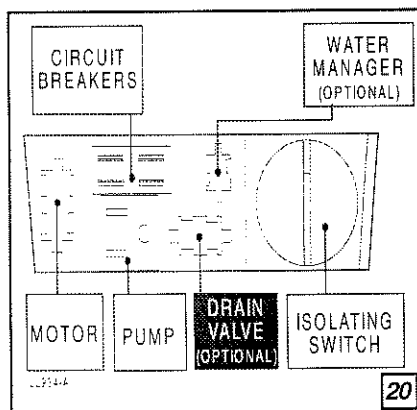
The junction box is constructed in two parts (see Fig. 9). Knock-outs have been provided on the face plate for conduit terminations. Secure conduits to the face plate and connect field wires to the terminals as indicated in the wiring diagrams (see Figs. 22 & 23, page 10). **Do not tamper with any factory wiring.**

The main junction box includes plug receptacles for the fan motor, water pump and optional accessories (see Fig. 20 Pg 9). Follow the instructions on the enclosure to ensure correct connection of electrical components.



Before closing the junction box, a trained, licensed technician must check that the cooler is operating correctly and must calibrate the fan motor to it's full load current (amps) using a clip on ammeter (see Fig. 16 Page 8).

This procedure is explained in later instructions (see Motor Power [Amps], page 11). After completing motor load calibration, insert the face plate into the slot provided and screw the terminal box lid into position using the screws supplied (taking care not to pinch the wires between the lid and base).



Circuit Breaker Protection

This cooler is fitted with circuit breaker protection for the fan motor and pump.

Should either a 2 speed or Variable speed fan motor overload, one of the circuit breakers will pop out, showing a white button. To reset, press this button in until it "clicks" and remains in.

For coolers fitted with Variable speed fan motors, the pump circuit breaker is located on front face of junction box next to motor circuit breaker (see Fig.20).

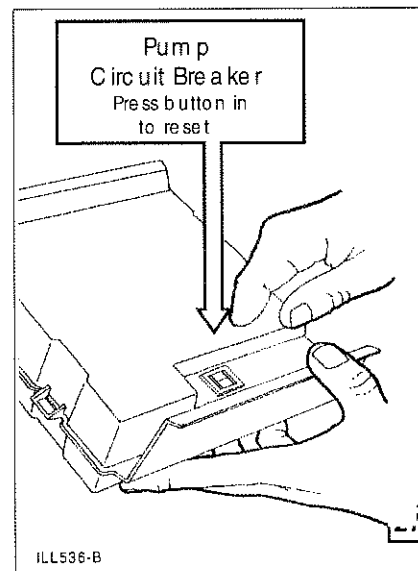
For coolers fitted with 2 speed fan motors, the pump circuit breaker is located on the underside of the junction box. See heading "Reset Pump Circuit Breaker 2 speed coolers ONLY" to reset circuit breaker.(see Fig.21).

Should the pump overload, and the circuit breaker button pops out, the pump should be examined carefully for electrical failure before resetting the circuit breaker.

Reset Pump Circuit Breaker 2 Speed Coolers ONLY

To reset Circuit Breaker:

- (1) Disconnect power supply at the main panel.
- (2) Remove the junction box from the blower housing (see Figs. 17 & 18, page 8 and reverse the procedure).
- (3) Invert the junction box and locate the circuit breaker.
- (4) Press button in until it "clicks" and remains in (see Fig.21).
- (5) Reposition the junction box on the blower housing (ensure the locking screw is reinstalled).



Fan Motor

This cooler is not supplied with a fan motor fitted.

The fan motor is supplied with the Power Pack.

USE ONLY THE AUTHORIZED FAN MOTOR SUPPLIED WITH THE POWER PACK.

Failure to follow this instruction will VOID ALL WARRANTY and may create severe risk of electric shock and fire!

TIP:

A tripped high speed circuit breaker is usually an indication that the amp setting of the motor is too high. (See Page 11 for procedure to correct)

Factory Authorized Fan Motor

BREEZAIR / SEELEY SEEELECTRIC TWO SPEED MOTORS:

1/2 HP	MFD-2 motor	part # 095431
3/4 HP	MFD-4 motor	part # 095455
1 HP	MFD-10 motor	part # 095448

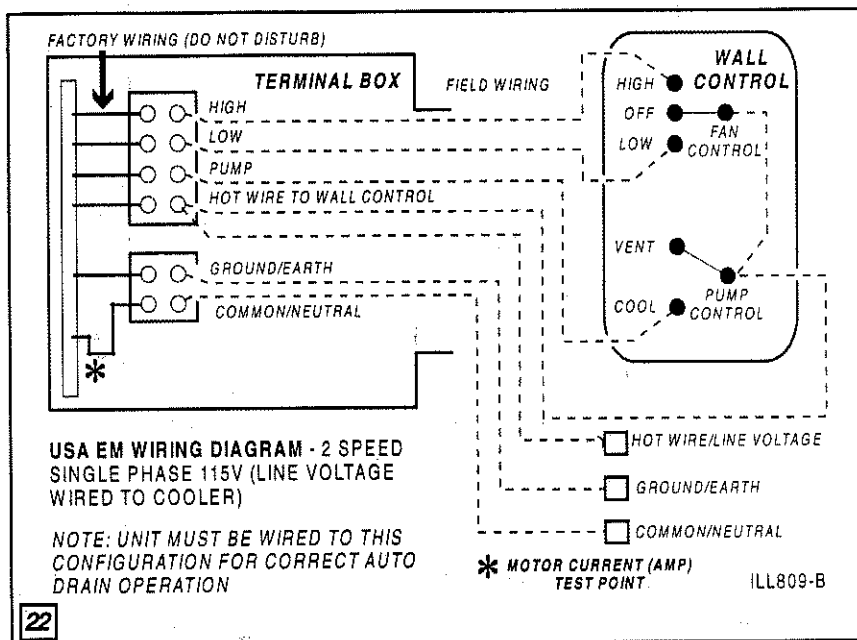
BREEZAIR / SEELEY SEEELECTRIC VARIABLE SPEED MOTORS:

1/2 HP	MVS-2 motor	part # 095257
3/4 HP	MVS-4 motor	part # 095264
1 HP	MVS-10 motor	part # 095271

Wiring Option 1

Fig. 22 shows the field wiring for a 2 speed EM cooler with **LINE VOLTAGE WIRED TO THE COOLER**.

NOTE: The cooler must be wired to this configuration for correct operation of the optional auto drain valve as the auto drain needs constant power.



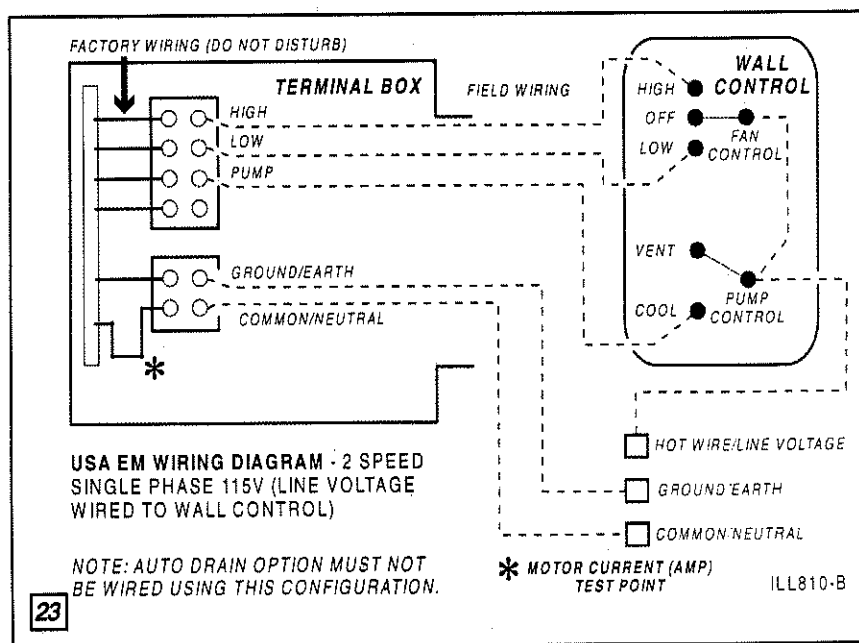
Wiring Option 2

Fig. 23 shows the field wiring for a 2 speed EM cooler with **LINE VOLTAGE WIRED TO THE WALL CONTROL**.

NOTE: The optional auto drain valve must **NOT** be used on coolers with the line voltage connected to the wall control as the auto drain will not function.

Variable Speed

Wiring instructions for the optional **SENSORTOUCH™** variable speed wall control with the Seelectric variable speed motor are included in the variable speed wall control kit.



**FOR INFORMATION CONCERNING OTHER WIRING CONFIGURATIONS
CALL CONVAIR TECHNICAL DEPARTMENT ON 1-800 9 CONVAIR**

Install Fan Motor

(1) Remove fan motor from box. (The motor is already fitted with a cradle, motor cord and pulley (sheave).

(2) As shown in Fig 24, fit belt tension bolts assembly.

(3) Assure J-nuts are fitted to the fan motor mounting plate as shown in Fig 24.

(4) Attach fan motor assembly to fan motor mounting plate as shown in Fig 24

(5) Attach plastic boots to bottom of belt tensioning bolt.

(6) Now align the motor and fan pulleys. (Shown in Fig 25) Small corrections to alignment can be made by repositioning the pulley on the motor shaft, before tightening the Allen screw. It is essential that the pulleys are correctly aligned. Poor alignment will cause excessive belt, pulley and bearing wear.

The correct alignment of the pulleys and the tightening of the motor pulley (sheave) onto the "flat" of the shaft is most important to ensure successful transmission of the motor power (torque) to the fan and prevent slipping.

Place the V-belt onto the two pulleys by starting at the motor pulley and then "rolling" it over the fan pulley. Be careful not to trap fingers between the belt and the fan pulley.

Motor Power (Amps)

Important: Install all the pad frames, except the one on the motor side.

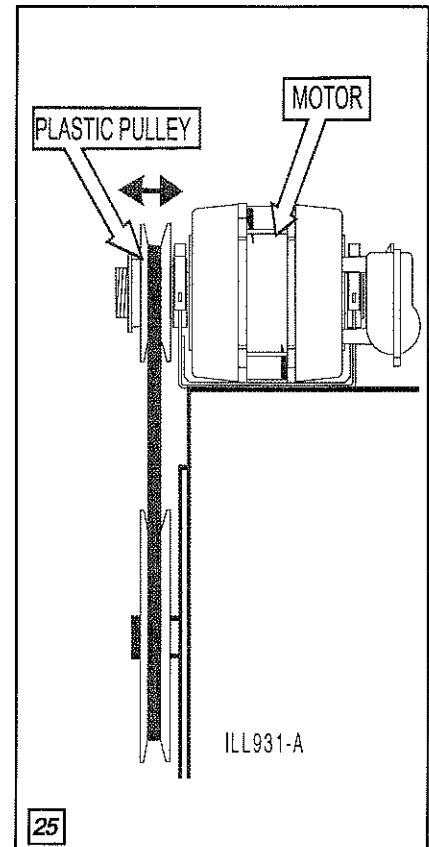
Ensure that most doors and windows in the house are open and all air supply grills are open and unrestricted. Set the cooler running at highest speed for approximately ten (10) minutes or until the motor has reached it's normal operating temperature. **Motor load must be checked without the pump running.**

Locate the amp test wire in the terminal box (see fig 26). Measure the motor current in amps using a clip on ammeter (see Fig. 26). **This should be done by a trained, licensed technician.** Check the measured amps against the motor nameplate rating.

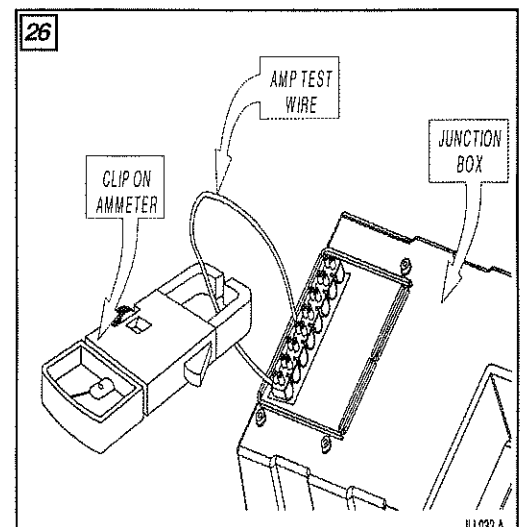
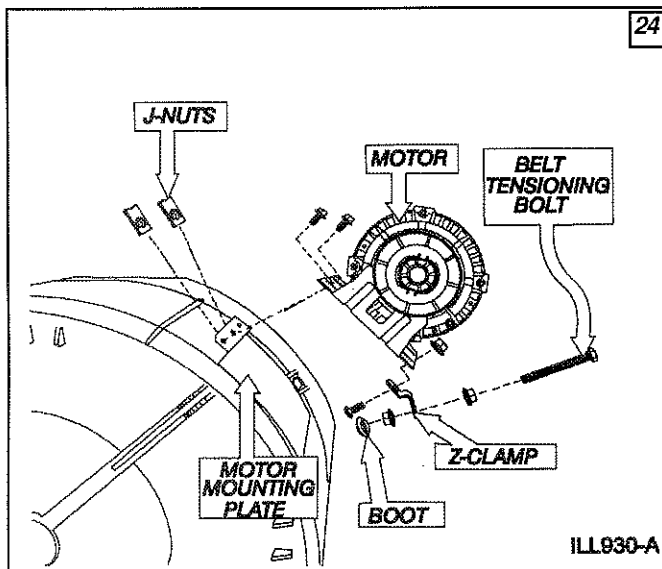
If the measured amps are less than the nameplate amps the adjustable pulley sheave must be altered to increase the blower speed, thereby delivering the full capability of the cooler to your installation. **The measured amps may be equal or close to, but never more than the nameplate amps** (see heading Pulley [Sheave] Adjustment following).

If the measured amps are greater than the nameplate amps the fan **MUST** be slowed down by adjusting the same pulley sheave in the opposite manner. Failure to do this will overheat the motor which may result in a fire.

Replace all covers when the adjustments are complete using only the screws supplied.



MOTOR PULLEY AND FAN PULLEY IN ALIGNMENT WITH "V-BELT" IN PLACE. WHEN ALIGNING MOTOR AND FAN PULLEY THE "V-BELT" "SHOULD NOT BE PRESENT."



Pulley (Sheave) Adjustment

The adjustment is made with the cooler switched OFF. **Never attempt this adjustment with the cooler operating.**

Remove the drive belt.

To **increase the fan speed** and therefore increase the motor amps, the two halves of the sheave (see Fig 27) must be closer together, i.e. **turn the adjustable half clockwise.**

To **decrease the fan speed** and therefore decrease the motor amps, the two halves of the pulley (see Fig 27) must be further apart, i.e. **turn the adjustable half counter-clockwise.**

The outer half of the sheave is on a large thread and can be moved in or out by removing the locking ring and then turning (by hand) the outer half of the sheave in the desired direction.

When an adjustment is made, refit the locking ring to lock the sheaves in place, replace the belt and check the amps. Smaller adjustments should be made each time you approach the desired setting.

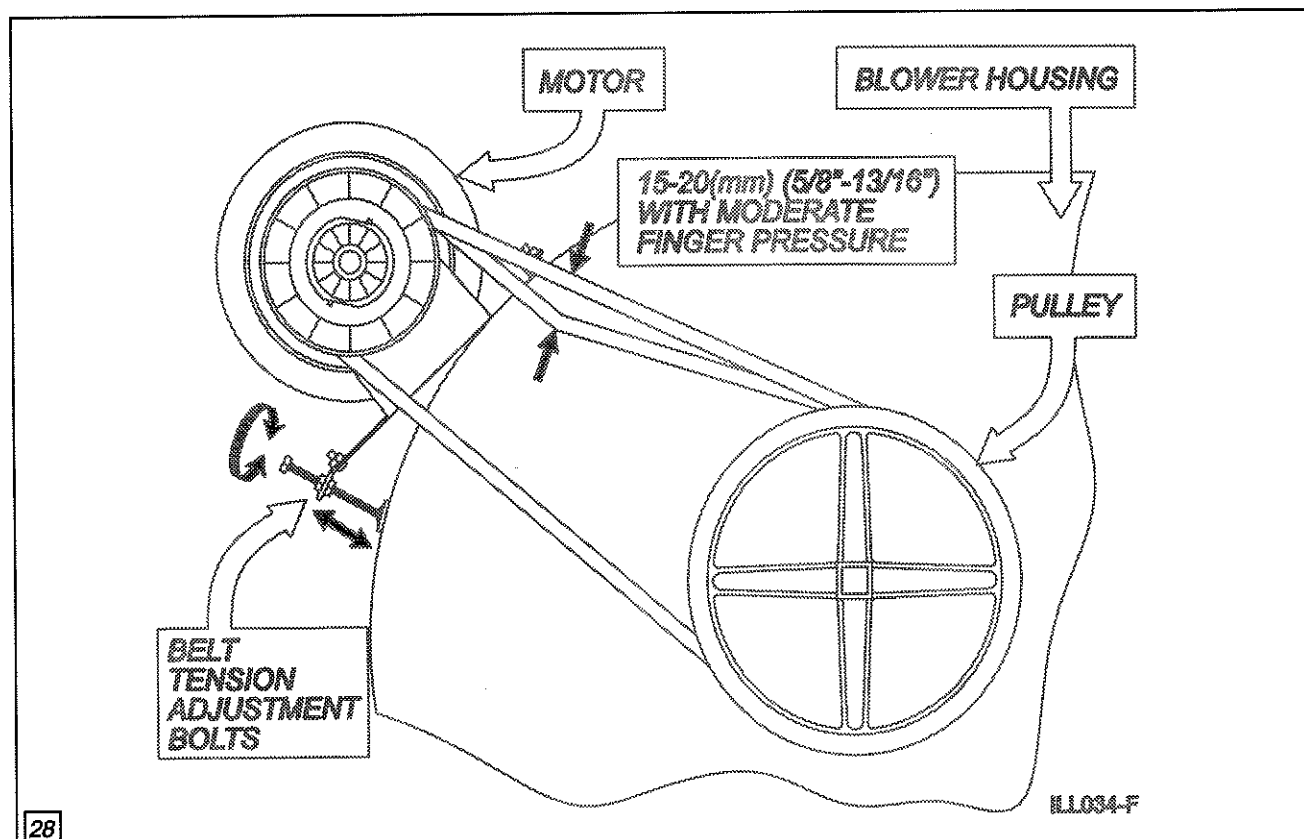
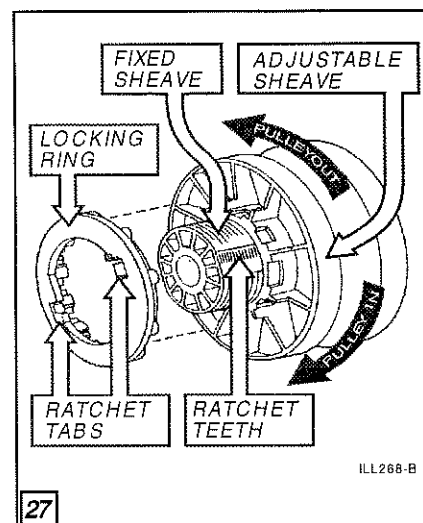
Belt Tension

Belt tension is important because if it is too tight you will get excessive belt wear and bearing wear. If it is too loose you will get belt slip with accompanying noise and loss of cooler performance.

There are two adjusting bolts with locking nuts, supplied in the power pack which are to be attached to the motor mounting cradle for adjusting belt tension (see Fig. 28).

The tension should be adjusted so that the deflection on one side of the belt half way between the motor pulley and the fan is 5/8" to 13/16" (see Fig. 28).

To make the adjustment, loosen off the locking nuts on the two adjuster bolts on the motor mounting cradle and screw the bolts in or out as required to tighten or slacken the belt tension. When the adjustment is correct, tighten the locking nuts again.



For coolers fitted with accessory kits also refer to the instructions in the kits.

Preseason Maintenance

NOTE: All maintenance must be performed by a trained, licensed technician.

- Turn off the electric power supply to cooler.
- Remove the pad frames.
- Turn off the isolating switch in the cooler.
- Fit new pads if necessary. For units fitted with accessory kits also refer to the instructions in the kits.

The life of the Celdek pads fitted, is generally much longer than traditional Aspen pads. However the life does depend on usage, the weather and water quality.

Please note that the pads supplied have been selected to give the highest possible cooling performance. When replacing pads do not use alternatives. The manufacturer is not responsible for the performance, damage or safety of the cooler when alternative materials are used. Using poor quality or incorrect pads may cause water to carry over, which may enter the electrical components creating an electrical shock or fire hazard.

If the pads are reused they can be easily cleaned by hosing them with clean water, but do not use excess pressure as this may create holes in the pad material.

- Replace the bleed-off fitting. This should have been removed as part of last season maintenance. ref **End Season Maintenance.**
- Reconnect the water supply line and turn on the water supply.
- Check the float valve for correct operation and level control. Check the water level.
- Inspect the pump and check that it will freely rotate by hand. If it is jammed with salt build-up, remove it and clean it thoroughly. After cleaning the pump replace it into the cooler, making sure

that it is securely in place.

- Check belt tension and adjust if necessary.
- Turn on the isolating switch in the cooler.
- Replace the pad frames.
- Restore electrical power supply and follow Operating Instructions.

In-season Maintenance

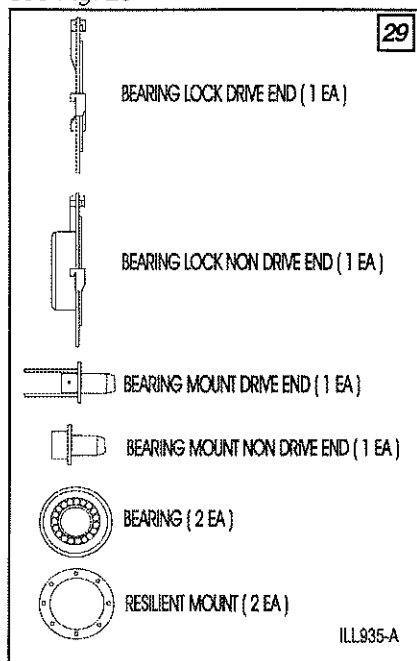
- Turn off the electrical power supply to the cooler.
- Remove the pad frames.
- Turn off the isolating switch in the cooler.
- Inspect the pads and clean or replace the material as required (see previous instructions headed Preseason Maintenance).
- Check the water level and adjust the float if necessary.
- Check that the pump impellor rotates freely.
- Turn on the isolating switch in the cooler.
- Replace the pad frames.
- Restore electrical power supply and follow Operating Instructions.

End Season Maintenance

- Turn off the electrical power supply to the cooler.
- Turn off water supply.
- Turn off the isolating switch in the cooler.
- Remove the pad frames. Hose them down carefully, do not use excess pressure as this may create holes in the pad material (see instructions under Preseason Maintenance).
- Unscrew and clean the special patented water "spreader plates" located under the top panel of the cooler, above each pad frame. When replacing them into position, watch underneath the top panel of the cooler to see that the spreader is correctly locating in the notches under the top panel.
- Drain all the water from the cooler by removing the bleed/drain tray from its location. Do not replace this item until the start of next season. Do not lose the o-ring seal.
- Disconnect copper water supply line from the tank. Make sure no water is retained in the float valve.
- Leave disconnected and drained until next season to prevent freezing and splitting.
- Clean the bottom pan/tank thoroughly.
- Replace the pad frames.
- Cover the cooler for the winter if desired.

Bearing Replacement

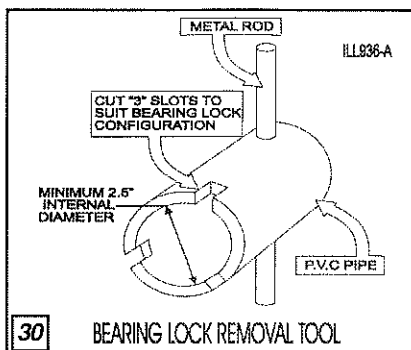
Sometimes a bearing will fail and must be replaced in the field. Before removal of the bearings, ensure you have a Bearing Kit (Part No. 800523). see Fig. 29



The following procedure should be adhered to :

To Remove Bearings

- Ensure electric power is disconnected to the cooler.
- Remove belt.
- Remove black plastic end cap (if fitted) from end of square shaft.
- Remove small black plastic pin in fan pulley (use screwdriver as lever).
- Remove two small black plastic pin in the shaft on either side of fan (use screwdriver as lever).
- Remove fan pulley. As you begin to extract the pulley depress the two bearing mount clips together (located inside the pulley boss) to allow it to slide along the shaft.
- Remove the black plastic bearing lock covering the bearing hub by twisting it counter clockwise to remove. This may require a special tool to be made, see Fig 30, example of tool.



- Use same tool to remove lock on other side of fan.

- Remove the bearing and its rubber resilient mount from the hub then remove the bearing from the resilient mount.

- Place a flat screwdriver across the corner of the bearing mount. Hit the screwdriver with a hammer until the bearing mount cracks. Once the part has cracked pull it from the bearing with a pair of pliers. (See Fig. 32)

To Replace Bearings

- Fit new bearing/s to the bearing mounts.
- Fit the rubber resilient mounts over the bearing/s.
- Clean the shaft and use a lubricant on the shaft for re-assembly
- Push the bearing assembly back up to its housing.

- Engage the bearing lock into its housing and twist it clockwise to lock.

- Push the pulley back onto the shaft, making sure the small hole in the pulley lines up with the small hole in the shaft. Insert pin.

- Push black plastic end-cap (if fitted) back into end of shaft.

- Push the drive end bearing assembly hard up to its housing.

- Engage the bearing lock into the housing and twist it clockwise to lock.

- Using a block of wood and hammer, carefully drive the non-drive bearing assembly back on the shaft and into its housing until the small hole in the bearing mount lines up with hole in shaft. Insert pinpins into its locating hole in the shaft.

- Replace the bearing lock by turning it clockwise to lock

- Carefully center the fan on the shaft and replace the two plastic pins in the shaft on either side of the fan.

