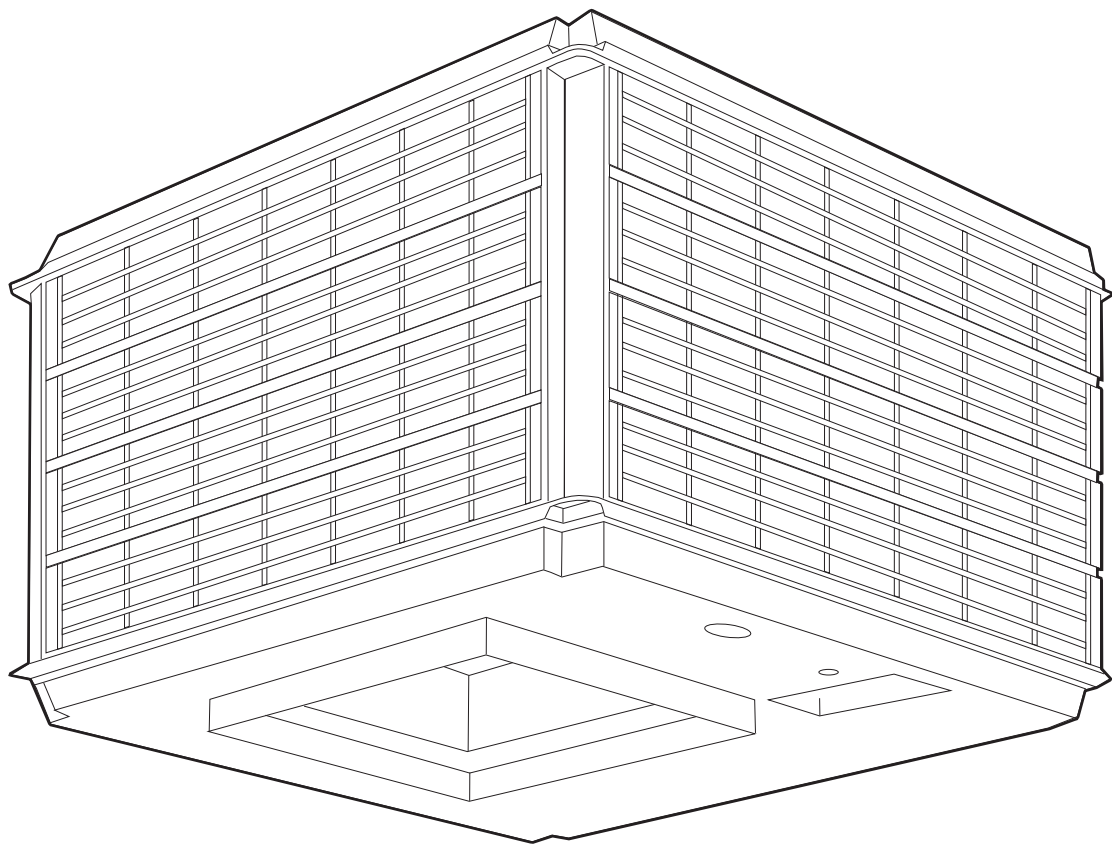




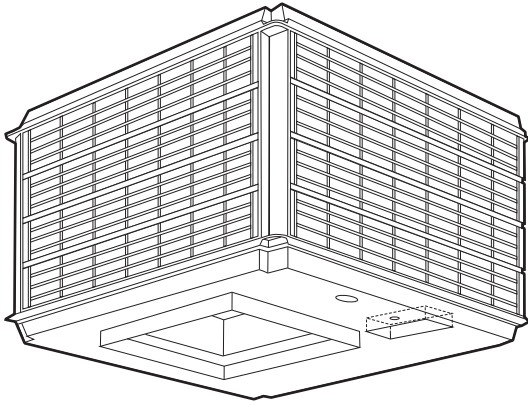
# INSTALLATION MANUAL

## EA Evaporative Cooler

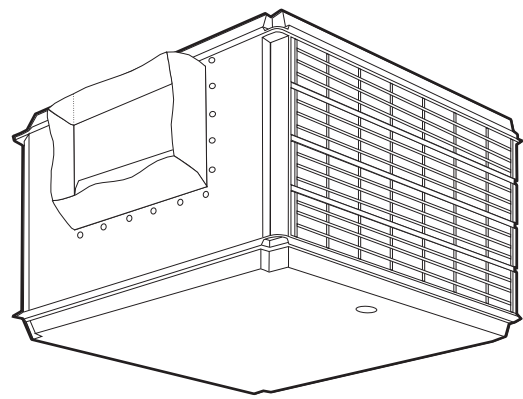


(English) (EA)

**Down Discharge**



**Side Discharge**



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## Safety

### SAFETY INSTRUCTIONS

#### 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 Evaporative Air Cooler. The operator is responsible for following the warnings and instructions in this manual and on the cooler.

**Read this entire manual before proceeding to install the cooler.**

**This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**

**Children should be supervised to ensure that they do not play with the appliance.**

**Failure to observe these warnings and instructions will void manufacturer's warranties and will 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 by a flame coming into contact with the cooler materials.

**Avoid Dangerous Situations:**

**Protect the cooler from all sources of ignition because polymers and cooling pads will burn.**

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

**In cases where BLEED-OFF is not used, pads will require frequent inspection and replacement. Failure to do so may cause water to leak into the building or onto the roof, that may enter electrical components and create an electrical shock or fire hazard.**

**Where this condition is allowed to exist, the manufacturer accepts no responsibility for any damage or injury that may occur.**

#### Installation, Repair and Operation

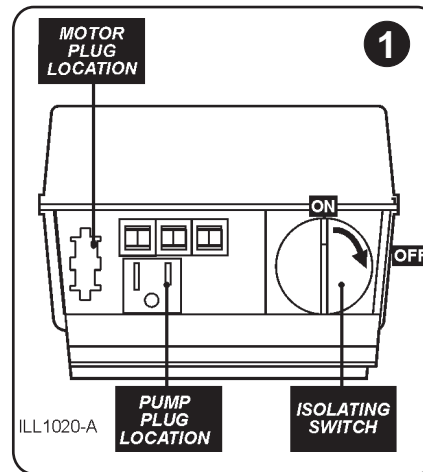
- All installation and repair work must conform to local electrical, water supply and environmental codes, rules and regulations and applicable national standards.

- All installation, maintenance and repair work must be done by a licensed and qualified electrician and/or a qualified, experienced heating, ventilating, air conditioning technician. All such work must be effected with factory authorised spare parts only.

- Disconnect electrical power at the fuse or circuit breaker box before installation commences. ALWAYS turn OFF the isolating switch (disconnect) located on the junction box inside the cooler BEFORE commencing any maintenance procedures. (Fig. 1). Then disconnect the fan motor and pump plugs from the junction box.

- Use only the power supply voltage shown on the motor nameplate.

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



- Keep children, bystanders and animals at a safe distance, a minimum of 30ft (10m) away from working areas.

- Dress safely. Wear non-skid shoes when working at high levels and roofs. Do not wear loose clothing or personal accessories while installing or servicing the air cooler as they may become caught in moving parts.

- Keep loose hair, loose clothing, fingers and all other parts of the body away from openings and moving parts. 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 when lifting or raising the air cooler to its final location. Use safe equipment and never attempt to lift the cooler alone. Always have assistance. Otherwise you might damage the cooler or the building or injure yourself.

- Ground Fault Circuit Interrupter (GFCI) protection should be provided on the circuit supplying this air cooler. Receptacles are available with built-in GFCI protection.

- Air coolers installed on roofs must not have the waste water directed onto the roof as stains will occur. Connect the cooler drain outlet to a gutter or drain pipe using a suitable hose.

- Always use the correct tools.

- **WARNING!** the packaging plastic on this cooler can be a safety hazard. Dispose of carefully.

- Never drill holes in the pan or walls of the cooler. See details later about where to drill holes for entry of services and cooler mounting.

- **Avoid dangerous situations. Do not use the cooler in the presence of flammable liquids or gasses to avoid creating fire or explosion. This air cooler is NOT flame retardant. A fire may result from contact with a flame or from an electrical short.**

- **Use of wrong replacement parts creates risk of severe electric shock and fire which may result in serious property damage, personal injury or death.**

- Secure all electrical connections inside junction box. Pump and fan motor must plug into receptacles. Never splice outside junction box. Failure to follow wiring instructions creates risk of severe electric shock and fire.

#### ADDITIONAL SAFETY INSTRUCTIONS

##### Water pump:

The water pump is supplied with this cooler and is factory fitted into its correct location.

## Safety (cont)

Ensure that it is properly secured and upright as intended. 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 authorised 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 authorised water pump:

Seeley "Tornado" pump (part no. 095851)

### "Power Clean" Style Timed Pumps

**Under no circumstances are "Power Clean" style timed pumps to be used in any Breezair air 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!**

### Fan Motor

This cooler is supplied with a fan motor made by the cooler manufacturers. **USE ONLY THE AUTHORISED FAN MOTOR SUPPLIED.**

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

### Factory Authorised Fan Motor

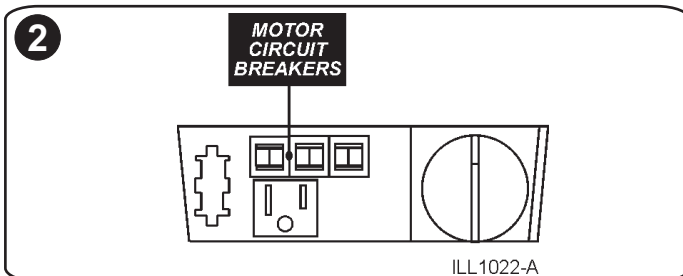
Seeley SEELECTRIC 2 speed motors:

½ HP MFD-2 motor part # 095431

¾ HP MFD-4 motor part # 095455

1.0 HP MFD-10 motor part # 095448

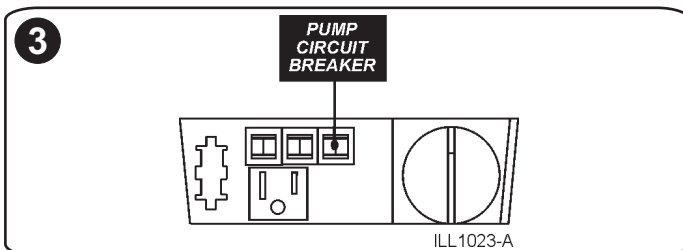
**The fan motor is equipped with inbuilt overheating protection that will reset automatically on cool-down to a safe temperature. This may take up to 45 minutes.**



### Circuit Breaker Protection

This cooler is fitted with circuit breaker protection for the fan motor and pump. Should the 2 speed fan motor overload, one of the circuit breakers located on the front face of the junction box will trip, showing a white button. To reset, press this white button until it "clicks" and remains in.

**TIP.....** A tripped high speed circuit breaker usually shows that the amp setting of the motor is too high.



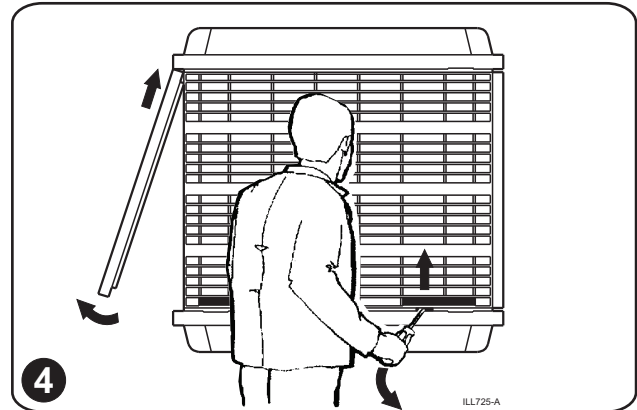
Should the pump overload and the circuit breaker trip, the pump should be examined carefully for electrical failure before resetting the circuit breaker.

## Installation details

### Removing Pad Frames:

Each pad is clipped into the cooler cabinet and is removed by using a medium sized screwdriver. (fig 4.)

Insert the screwdriver into 2 slots along the top edge of each side of the pan and lever downwards. The pad frame will then slide down and out of the cabinet.



### Replacing Pad Frames:

Ensure the pad frame is the correct way up by checking that the ribbed gutter is at the top. Push the top edge of the frame under the lip of the top panel. Then push the bottom edge into the edge of the pan at the bottom. Two sharp hits by hand should locate it over the clips. If this is not successful use the screwdriver to lever the bottom edge of the pad frame over the clips.

### Cooler Location:

Check the proposed cooler location first, to ensure it is structurally capable of supporting the weight of the cooler. Polymer coolers are light-weight but they require adequate support. The largest cooler in the EA range is about 250 lbs (113Kgs).

Always locate the cooler where there is a plentiful supply of clean fresh air, and not in a recess or close to the ground where the air may be dusty or polluted.

SEE LATER SECTION "OPERATION OF COOLER" ABOUT ADEQUATE EXHAUST OPENINGS REQUIRED.

**Keep the cooler away from heater flues, exhaust vents (especially kitchens) and sources of ignition. Avoid dangerous situations.**

Allow for adequate, SAFE, access around the cooler for maintenance, especially for pad cleaning, water connections, electrical connections, drain connections.

It is mandatory that water cannot enter the building as a result of poor sealing (caulking or flashing) of the various penetrations into the building (ducts, necks, water pipes, electrical conduits).

## Installation Details

### Mounting the Air Cooler

Handling and installing the cooler is always much easier if you remove the pad frames first.

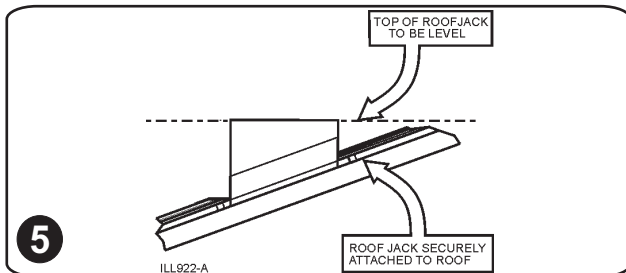
#### New installation, Roof Jacks:

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

#### Replacement installation, Roof Jacks:

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

**NOTE!** It is recommended that a strip of foam or sealant is applied to the upper 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 the lip of the pan for level when the cooler is in position on the roof jack. (Fig. 5)



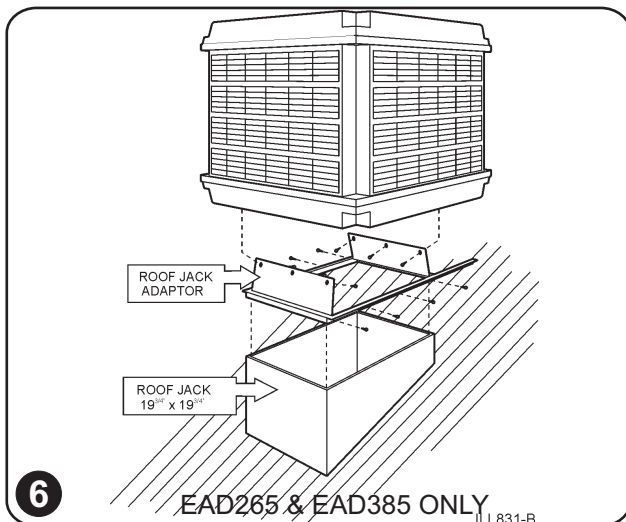
### Raising the Cooler to its final location. HANDLE WITH CARE. DO NOT DROP.

For lifting or pulling the cooler, always apply the ropes around the full cabinet or the blower housing and NEVER tie them to any of the four corner posts.

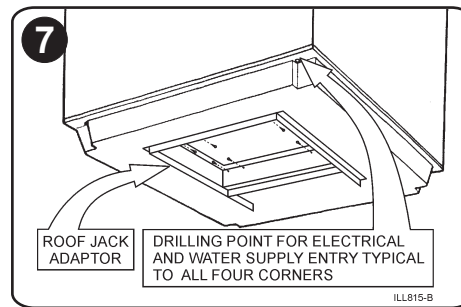
**WARNING!** Take care when moving the cooler that nothing is allowed to penetrate into the discharge opening (such as the end of a ladder), as damage may occur to the internal cooler components. If a ladder is used as a slide for the cooler to be pulled onto a roof or platform, we strongly recommend the cooler be turned upside-down first. Protect the lid from scratching.

After placing the cooler on the roof jack check that water spreaders and other internal components are all securely in place.

**Down draft:** Model EAD148 does not require a mounting frame or adaptor as they are designed to fix directly into the 17 $\frac{3}{4}$ " x 17 $\frac{3}{4}$ " roof jack. Models EAD265 & EAD385 are supplied with a metal roof-jack adaptor for 19 $\frac{3}{4}$ " x 19 $\frac{3}{4}$ " roof jacks. (Figs 6, 12)

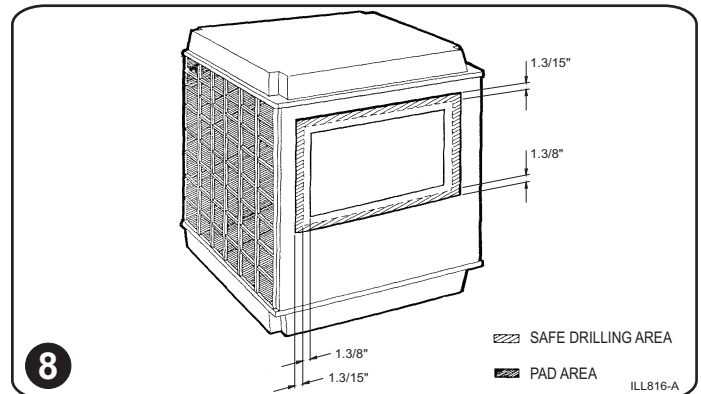


The adaptor must be screwed into the air cooler outlet first. Then lift the cooler assembly onto the roof jack. (Fig. 12)



Always check that the roof jack or duct is capable of supporting the operating weight of the cooler. If not, additional supporting frame may be required.

**Side Draft:** All side draft coolers require a special frame to support the cooler from below or from the wall. Ducts may be attached directly to the air opening of the cooler. Fig. 8 shows the safe area for drilling and screwing. Use a sealing compound to achieve air tight connection.

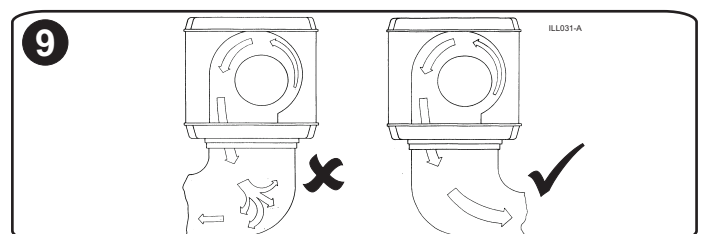


### Optional Support Legs

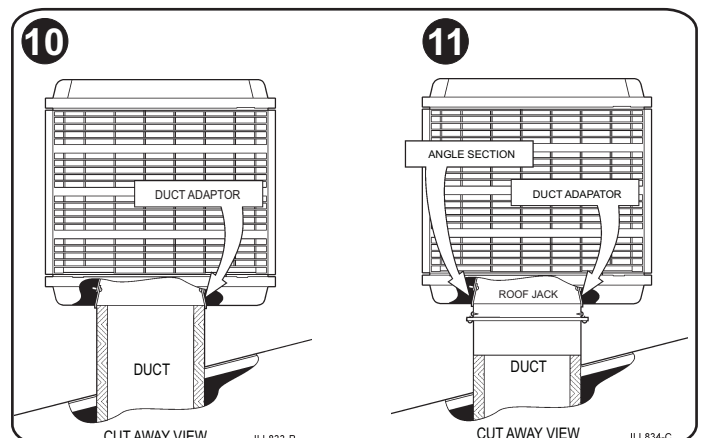
Optional Breezair support legs are available from your Breezair supplier. They have been designed to attach to all down draft EA models and may be used when additional support is necessary.

### Cooler Orientation

Better air flow and lower back pressure will result from careful orientation of the blower and housing as shown in fig. 9 below:

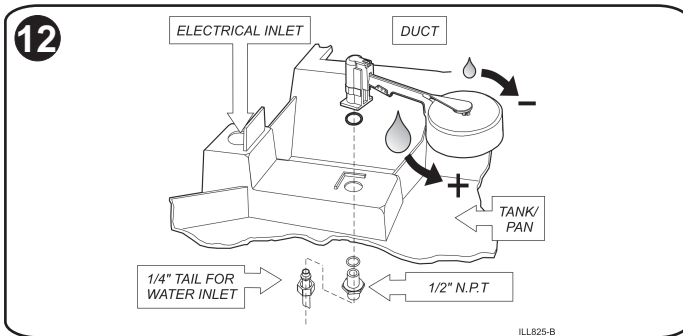


Side Draft coolers should be secured to their mounting frames (where used) with the ratchet clip anchor straps supplied. (Fig. 10). Do not over-tighten the straps as you might distort the pan.



## Water Installation

A permanent water supply is required to be connected to the float valve that is factory fitted inside the cooler. The float valve controls the water level in the pan automatically. The water connection point for DOWN draft coolers is located underneath the pan, where the 1/2" float valve nipple protrudes. (Fig. 12)



The water connection point for SIDE draft coolers is inside the cooler directly onto the float valve. Route the water supply pipe either through a hole in the blank front panel of the cooler, or, through a hole in the pan drilled in any corner adjacent to the corner posts.

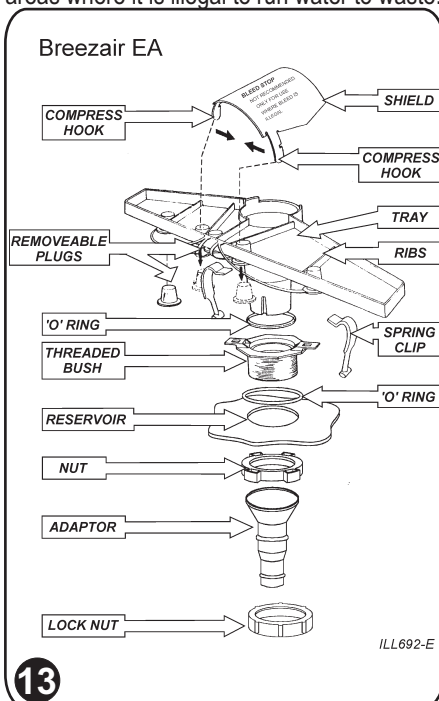
Install a manual water shut-off valve near the point of entry of the water supply to the cooler. In areas subject to winter freezing install a drain down feature. **DO NOT FIT SHUT OFF VALVES DIRECTLY ONTO THE FLOAT VALVE NIPPLE.**

### WARNINGS!

- 1) Flush foreign matter from water supply pipe before final connection to avoid damage to the float valve.
- 2) Always ensure that the water supply pipe does not place sideways pressure onto the float valve nipple as it is plastic.

### Overflow & Bleed Off Feature

A special "bleed-off" fitting is supplied with the cooler or in the Power Pack. It has a 3-fold function: it acts as an overflow, a drain and a bleed-off. If the water level gets too high the excess water overflows into the fitting and away to waste. If the user wants to drain the pan he can lift the fitting out of the drain hole and the pan water will run away to waste. The bleed function must always be commissioned, except in areas where it is illegal to run water to waste.



The continuous bleeding of a small amount of water to drain forces fresh water to enter the cooler and reduces the rate at which salt and scale build up on the pads.

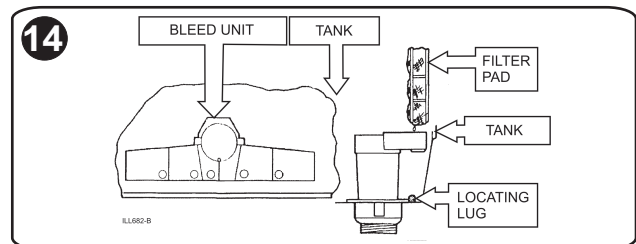
The bleed-off fitting is inserted into the large hole already formed in the pan. (Fig. 13, 20). Screw the tank nut firmly under the pan by hand.

The bleed rate can be varied according to local conditions. With all the plastic plugs removed from the tray, minimum bleed will occur.

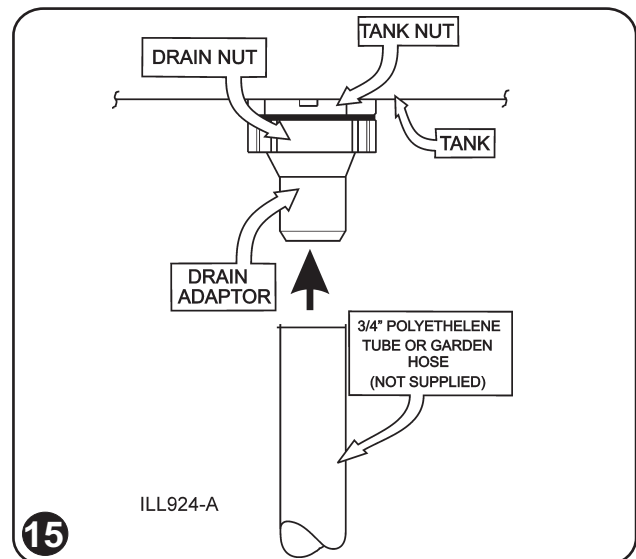
Insert plugs to increase the bleed rate to suit your salt build up experience. See heading Operating Adjustments for further details. In those areas where draining of bleed-off water is illegal, the bleed must be disabled. Use the "bleed stop" shield supplied with the cooler. (Fig. 13)

**WARNING!** In cases where bleed-off is not used the pads will require frequent inspection and replacement. Failure to do so may cause water to leak into the building or onto the roof, which may enter electrical components creating an electric shock or fire hazard. Where this condition is allowed to exist, Seeley International (Americas) accepts no responsibility for any damage or injury that might occur.

Make sure the fitting is located correctly in relation to the pads and that the large O-ring is on before placing the fitting into the hole in the pan. Secure with clips provided. (Fig. 14)



The drain adaptor allows the attachment of a 3/4" drain hose to run water to a waste point. Attach it to the bleed fitting underneath the pan by using the drain nut. (Fig. 15)



## Electrical Installation

### 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 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 matches your electrical system voltage.

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

Sub-circuit wiring must be rated at cooler rated amperes or higher, and must be protected by a suitable fuse or circuit breaker. Sub-circuit cables are to be double insulated all the way into the cooler junction box.

**Ensure that all electrical connections are tight.** Loose connections will cause overheating that may lead to machine damage or fire.

Replace all covers on completion of the work, using only the screws supplied.

**Do not tamper with factory wiring.**

Before leaving the job, 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.** Make this adjustment at the motor pulley (sheave). See later detail under heading "Operating Adjustments".

### WIRING DIAGRAMS

#### Wiring Option 1

Fig. 18 shows the field wiring for a 2 speed cooler WITH LINE SUPPLY WIRED FIRST TO THE COOLER (not first to the wall control).

#### Wiring Option 2

Fig. 19 shows the field wiring for a 2 speed cooler WITH LINE SUPPLY WIRED FIRST TO THE WALL CONTROL (not first to the cooler).

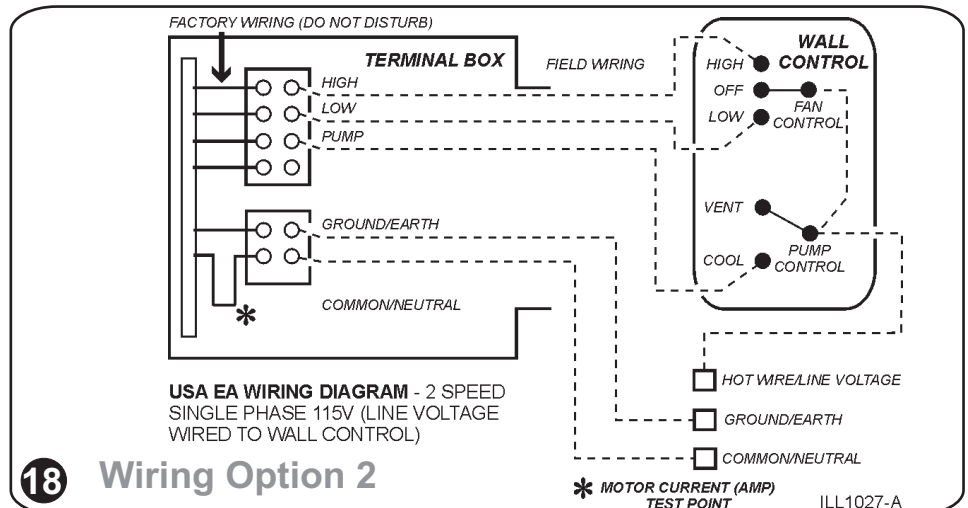
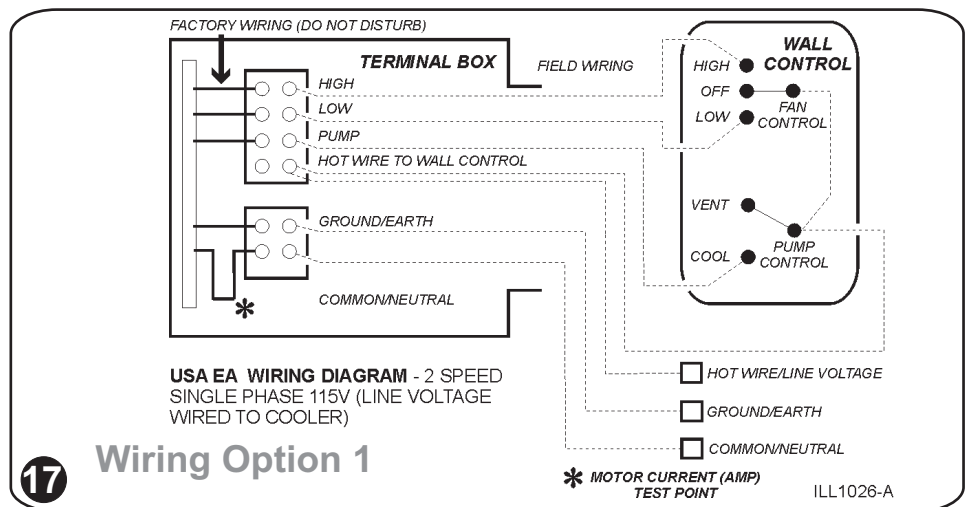
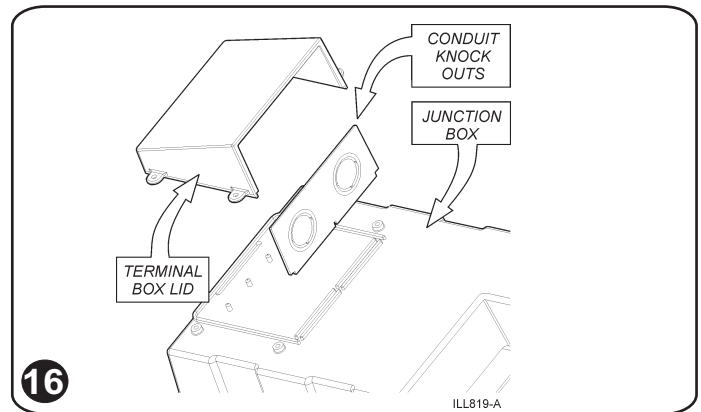
FOR INFORMATION CONCERNING OTHER WIRING CONFIGURATIONS CALL BREEZAIR TECHNICAL DEPARTMENT. (800) 926-6824

The junction box is already factory fitted to the blower housing. Attached to the junction box is a main power supply termination box. The main power termination box is made in two sections to facilitate easy wiring connections. Knock-outs are provided for 1/2" conduit. A hole must be drilled for 3/4" conduits. (Fig. 17)

**Connect the power supply and control cables inside this termination box as shown on wiring diagram/s below.**

**The junction box is factory sealed; do not attempt to open it; there are no field serviceable parts inside.**

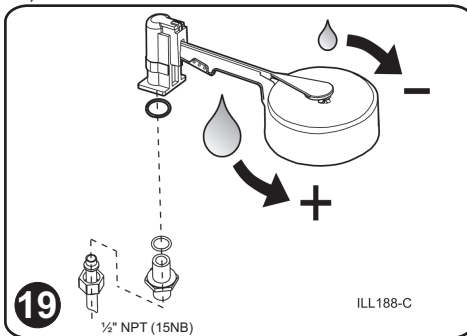
The junction box contains plug receptacles for fan motor, water pump, and other optional features if used. Fan motor amperes must be adjusted before closing the termination box using a clip-on ammeter on the power wires.



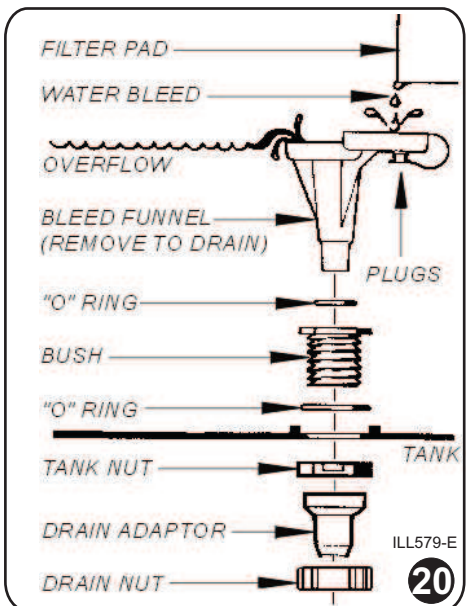
## Operating Adjustments

### Water level:

The water level in the cooler is important. Adjust the level at the float valve inside the cooler. Rotate the large plastic float CCW or CW to change the level. CW will lower the level; CCW will raise the level. (Fig. 19)



**NEVER ADJUST THE WATER LEVEL WITH THE COOLER RUNNING** because the residual water in the pads and pipes will cause the water to overflow when it runs back into the pan.



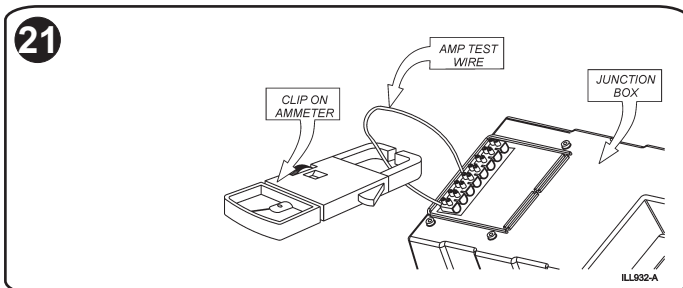
Water level should be about  $\frac{3}{4}$ " below the overflow outlet (top lip of bleed-off tray) when the valve shuts off. (Fig. 20)

### Motor Power (Amps)

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

Ensure that all intended doors, windows or other means of exhaust are open in the building, and that all outlet grilles are open fully.

Set the cooler running at the highest speed for about 10 minutes, or until the motor has reached its normal operating temperature (hot!).



Motor load must be checked without the pump running.

Clip your ammeter onto the free cable in the main termination box. (Fig 21) **This should be done by a trained licensed electrician.**

Check the measured amps against the **motor nameplate amps**. If the measured amps are less than the nameplate amps the adjustable motor pulley sheave must be altered to increase the blower speed, thereby delivering the full capability of the cooler to your installation.

**The measured amps must be equal or close to, but never more than the nameplate amps.** (See heading "Pulley (Sheave) Adjustment")

If the measured amps are greater than the motor nameplate amps the fan **MUST** be slowed down by adjusting the motor pulley sheave in the opposite manner. **Failure to do this will cause overheating in the motor and may cause the motor's thermal protector to trip.**

Replace all covers when adjustments are completed using the screws provided.

### Pulley (Sheave) Adjustment

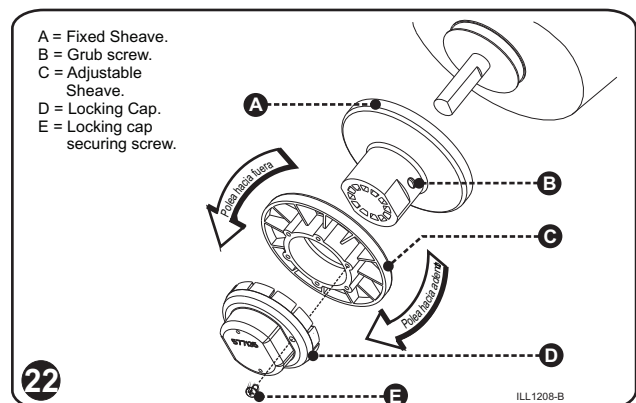
The motor pulley is adjustable in order to set the motor amperes at the correct (nameplate) level, and thus provide the owner with full machine cooling capacity.

**DO NOT USE THE PULLEY ADJUSTMENT TO SET BELT TENSION.**

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

Remove the drive belt.

To **increase the fan speed** (and therefore the motor amps), the two halves of the pulley must be closer together, ie: **turn the adjustable sheave clockwise.** (Fig.22)



To **decrease the fan speed** (and therefore the motor amps), the two halves of the pulley must be further apart, ie: **turn the adjustable sheave counter-clockwise.** (Fig. 22)

The outer half of the pulley is on a thread and can be moved in or out by removing the locking cap and then turning the outer half by hand in the desired direction.

When an adjustment is made, replace the locking cap, aligning the screw hole with the nearest hole in the adjustable sheave. Lock it into place with the securing screw. Refit the belt, reset the belt tension, then run the cooler and check the amps. Repeat the process until the amp level is set. You can start and stop the cooler for this procedure by using the isolating switch inside the cooler.

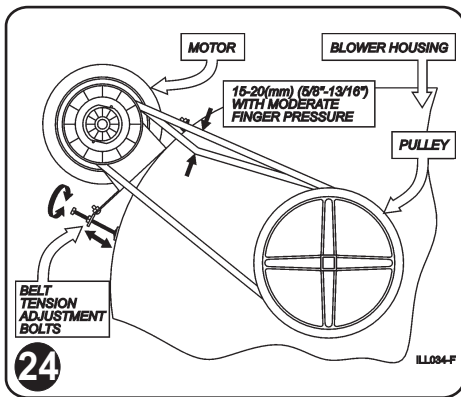
### Belt Tension

**Belt tension is important.** If it is too tight there will be excessive belt and bearing wear. If it is too loose there will be belt slip, excessive belt wear and loss of cooler performance. There are two adjusting bolts with locking nuts already fitted to the motor cradle.

The tension should be adjusted so that the deflection on one side of the belt is  $\frac{5}{8}$ " to  $\frac{13}{16}$ ". To make the adjustment, loosen the locking nuts and screw the bolts in or out as required to change the belt tension. Re-tighten the locking nuts.



It is important to recheck the motor amps again after re-setting the belt tension. Correct belt tension ensures the belt will not slip. Check the temperature of the belt by hand after each adjustment, by turning off the cooler and holding one side of the belt in your hand. If the belt is warm to touch, it is slipping! Continue to tighten until it runs cool. (fig. 24)



**Bleed Off**

See previous heading "Overflow and Bleed-Off feature" under "Water Installation".

Adjusting the bleed rate is necessary to reduce the salt deposit on the pads. **Salt deposit can NEVER be entirely eliminated, only the rate of deposit can be changed.** The bleed feature causes some salt concentrated water in the pan to be drained away. Fresh water enters the cooler automatically as the salty water exits.

The rate of bleed will vary according to water quality, but should be set to a minimum rate as set out below:-

EA148 (small cabinet): 0.05 gpm

EA265 (med. cabinet): 0.08 gpm

EA385 (large cabinet): 0.13 gpm

**NOTE!** Bleed adjustment cannot be precise as operating conditions vary continually.

**NOTE!** Previous warning about running coolers without bleed-off.

**OPERATION OF COOLER**

**Using your Cooler**

Evaporative air coolers always function on 100% fresh outside air.

Therefore you must either open doors and windows, or, provide exhaust outlets in the building. **FAILURE TO PROVIDE ADEQUATE EXHAUST OPENINGS WILL CAUSE A BUILD UP OF HUMIDITY INSIDE THAT WILL BECOME VERY UNCOMFORTABLE.**

**Start up**

- Turn on the water supply and make sure the shut off valve at the cooler is also on.
- Turn on electrical power supply.
- Wait a few minutes for the water to fill the cooler pan.
- Turn on "cooling" at the wall control to start the pump and pre-wet the pads.
- Turn on the fan to High or Low speed as desired.
- In humid weather you may feel more comfortable by turning off the cooling to run the fan only.

- You can create your own pattern of air flow in the building by adjusting the outlet vents and doors and windows to direct the air where you want it.

**MAINTENANCE INSTRUCTIONS**

**Pre-season Maintenance**

**NOTE!** All maintenance must be done by a trained, licensed technician.

- Turn off the power supply to the cooler.
- Remove pad frames
- Turn off the isolating switch inside the cooler.
- Fit new pads if necessary.

**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 to, or safety of the air cooler when alternative pads are used. Using poor quality or incorrect pads may cause water carry-over that might enter electrical components creating an electric shock or fire hazard.**

If the pads are re-used they can be easily cleaned by hosing them with clean water, but do not use excess pressure because you might create holes in the pad media.

- Replace the Bleed-off fitting. (This should have been removed at the end of last season. Refer. End Season Maintenance).

- Reconnect the water supply line and turn on the water supply.

- Check the float valve for correct operation and check water level.

- Inspect and clean the pump filter and impellor housing. (To remove pump from filter) Press release button on filter, twist the pump body with button depressed, lift pump body out of filter base.

- Check belt tension and adjust if necessary.

- The main blower shaft bearings are sealed for life and do NOT require oiling or greasing.

- Turn on the cooler isolating switch.

- Put the pad frames back on the cooler.

- Restore main power supply and run cooler according to the previous instructions under "Operation of Cooler".

**In-season Maintenance**

Turn off the power supply to the cooler.

- Remove pad frames
- Turn off the isolating switch inside the cooler.

- Inspect the pads and clean or replace as required (see previous instructions under "Pre-season Maintenance").

- Check water level and adjust if necessary.

- Turn on the cooler isolating switch.

- Put the pad frames back on the cooler.

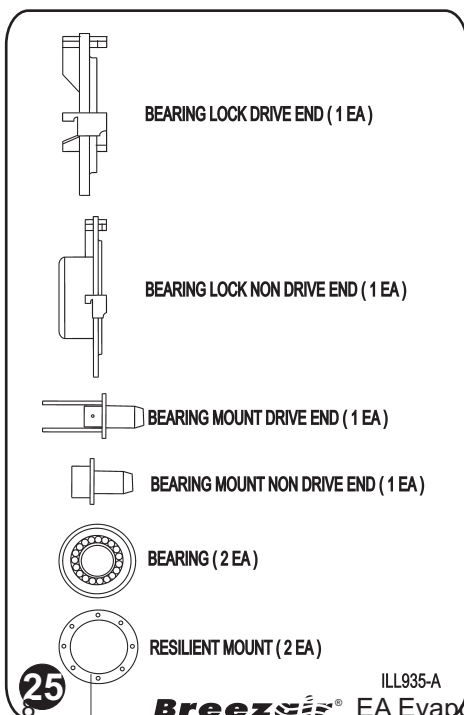
- Restore main power supply and run cooler according to the previous instructions under "Operation of Cooler".

**End-season Maintenance**

- Turn off the power supply to the cooler.
- Remove pad frames
- Turn off the isolating switch inside the cooler.
- Remove pad frames. Clean them by hosing them with clean water, but do not use excess pressure because you might create holes in the pad media.
- Remove and clean the special water "spreader" plates located under each edge of the top panel. Do not disconnect from water hose. When replacing them, check underneath to see that the spreaders are correctly located in the notches under the top panel.
- Drain all the water from the cooler by removing the bleed tray. Do NOT put it back until next season. Do not lose the O-ring seal.
- Disconnect the water supply pipe from the pan. Make sure no water is left in the float valve. Leave pipe disconnected and drained for winter to prevent freezing and splitting.
- Clean the bottom pan thoroughly.
- Replace pads frames.
- Cover the cooler for winter if desired.

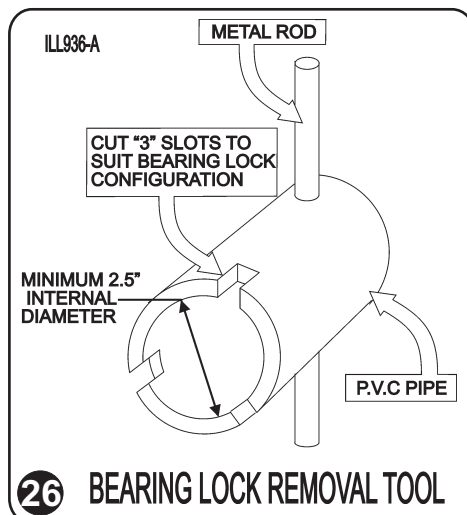
**Bearing Replacement**

Sometimes a blower shaft bearing will fail and must be replaced in the field. Before removal of the failed bearing/s obtain a Bearing Kit, part no. 800523. (Fig. 25)

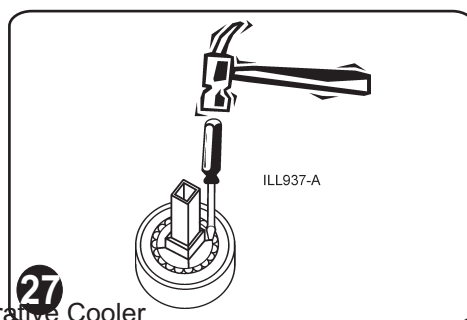


**To remove bearings:**

- Disconnect electrical power to the cooler.
- Remove V-belt.
- Remove black plastic end cap (if fitted) from the end of the square shaft.
- Remove small black plastic pin in blower pulley (use screw driver as a lever).
- Remove two small, black, plastic pins in the shaft on each side of the blower. (use screw driver as lever).
- Remove blower pulley. As you begin to extract the pulley, depress the two bearing mount clips together (located inside the pulley boss) to allow the pulley to slide off the shaft.
- Remove the black, plastic bearing locks covering the bearing hubs by twisting them counter-clockwise. You may need make a special tool for this job. (Fig. 26).



- Place a strong, flat screwdriver across the corner of the non-drive end bearing mount (still on the shaft) and hit it sharply with a hammer to break the mount. The bearing should then be freed to slide off the shaft. (Fig. 27) The blower shaft should then be able to be pushed to push the drive end bearing assembly out from the hub. In a similar way, break the drive end bearing mount to free the bearing.



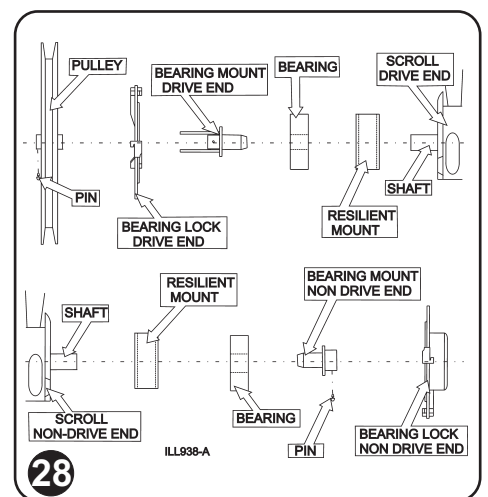
- Discard all the old components and use the new ones in the bearing kit.

**To replace bearings:**

- Fit new bearings to the two bearing mounts.
- Fit new rubber resilient mounts over the bearings.
- Clean the shaft and apply a small amount of lubricant to aid re-assembly.
- Push the blower shaft through so it protrudes through the non-drive end hub.
- Push the non-drive end bearing assembly onto the shaft, lining up the small hole on the mount with the hole in the shaft. Insert the pin.

**NOTE! The bearing mount is different for drive end and non-drive end of shaft.**

- Gently drift the non-drive end bearing/shaft assembly into the hub and replace the bearing lock by twisting clockwise.
- Push the drive end bearing assembly along the shaft and into the hub. This may require gentle assistance with hammer and drift.
- Engage drive end bearing lock into its housing and twist clockwise to lock.
- Replace the two small pins each side of the blower on the shaft.
- Push the blower pulley back onto the shaft making sure the small hole in the pulley lines up with the corresponding hole in the shaft. Insert small black pin.
- Push black plastic end-cap into end of shaft.



<u>PROBLEM</u>	<u>PROBABLE CAUSE</u>	<u>SUGGESTED REMEDY</u>
Inadequate Cooling	Under-sized cooler.	Replace with larger cooler.
	Under-sized ducts.	Replace with larger ducts.
	Clogged or dirty cooling pads.	Clean or replace pads.
	Dry pads or lack of water while cooler is operating.	Check water distribution system for possible obstruction in hoses. Check pump.
	Insufficient air discharge openings or inadequate exhaust from building, causing high humidity and discomfort.	Make sure there is adequate provision for exhausting stale air from building (open windows and doors).
	Excessive resistance from poorly located backdraft damper.	Remove backdraft damper and substitute manual slide damper.
	Excessive ambient humidity (see also item above re inadequate exhaust).	On days during summer when ambient humidity is high the cooler will not reduce the temperature as much as on drier days. There is no remedy except to shut off the pump.
	Belt slipping.	Tighten belt by re-adjusting motor position. Replace belt if worn.
Rapid formation of white deposits on pads and louvres.	High mineral content of supply water.	Increase the bleed rate.
Noisy cooler.	Fan out of balance due to dirt, etc.	Clean the fan.
	Air distribution system creating too much back pressure, or changes of direction too sudden, or grilles too small.	Have contractor re-evaluate his design; use bends instead of elbows; change grille sizes.
	Belt squealing.	Tighten belt.

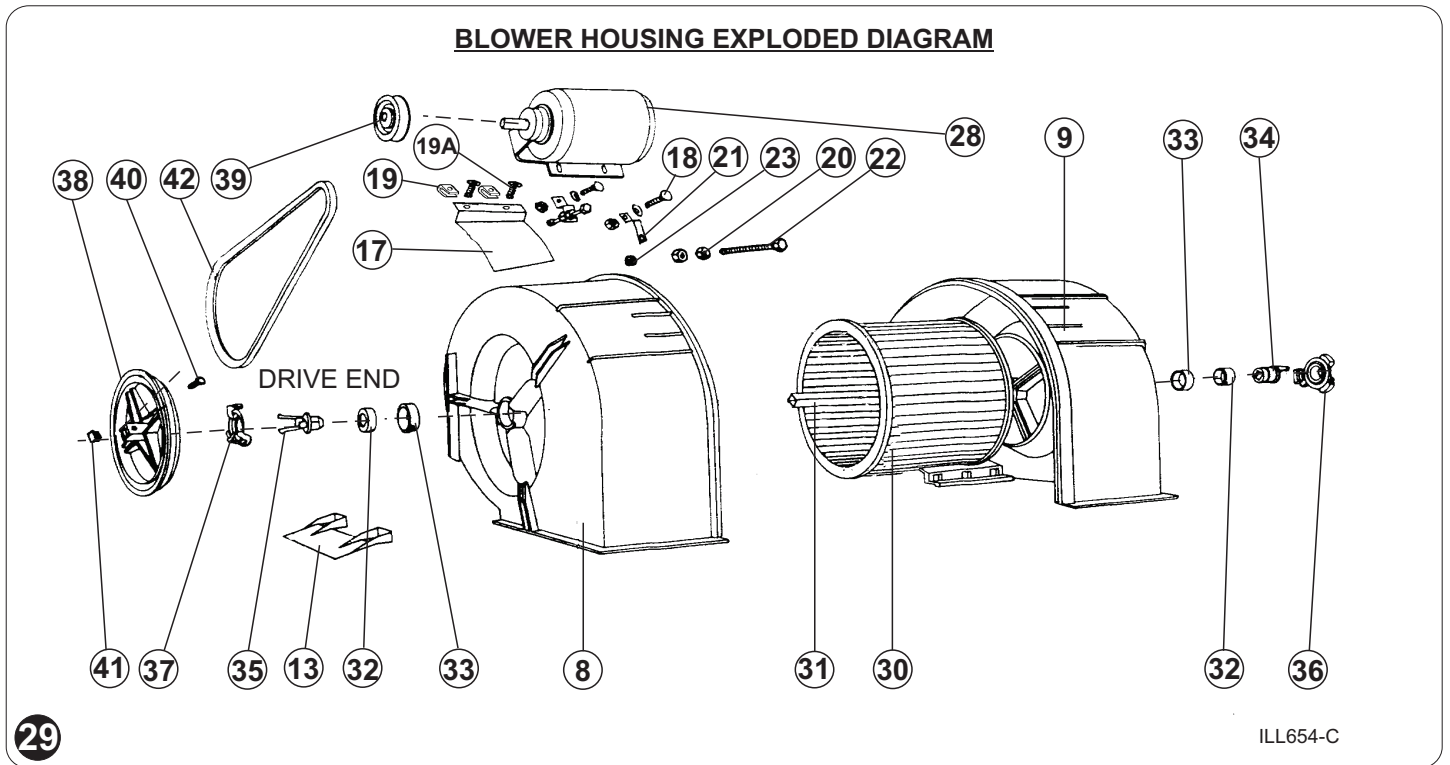
<u>PROBLEM</u>	<u>PROBABLE CAUSE</u>	<u>SUGGESTED REMEDY</u>
Belt slipping or wearing excessively.	Belt loose.	Tighten belt.
	Pulleys out of line.	Align pulleys.
	Worn belt.	Replace belt.
	Worn or warped pulleys.	Replace and re-align pulleys.
	Moisture on belt.	Stop any water leaks.
Pump fails to operate.	Pump circuit breaker tripped.	Check pump for faults. Replace if necessary.
	Pump motor failure.	Replace pump.
	Pump control switch faulty.	Replace control switch.
	Loose electrical terminations.	Check all electrical terminations.
Blower fails to start.	Motor circuit breaker tripped.	Check cause of overload, especially motor amp setting. Adjust if necessary to at or below motor nameplate amps. Reset circuit breaker.
	Incorrect wiring of pump and control switch.	Connect the electrical connections correctly.
	Main power circuit breaker tripped or fuse blown.	Check cause of overload. Reset circuit breaker or replace fuse.
	Loose electrical terminations.	Check all electrical terminations.
	Defective control switch.	Replace control switch.
	Blower motor burned out.	Replace motor.
	Belt or pulley loose.	Check and tighten pulley and belt.
	Belt broken.	Install new belt.
	Low system voltage.	Consult with power supply authority.
	Incorrect motor; motor changed but wrong size fitted.	Fit correct size motor.

<u>PROBLEM</u>	<u>PROBABLE CAUSE</u>	<u>SUGGESTED REMEDY</u>
Pump runs but no water circulation. Pump runs but pads lack water.	Insufficient water in pan.	Adjust float level.
	Water hoses blocked.	Check and clean out blockage. Unkink hose.
	Pump filter blocked.	Clean pump filter and impellor housing..
Continuous overflow of water.	Float valve adjustment not correct.	Adjust float valve. Ensure supply water pipe is not straining the valve sideways.
	Heavy pad deposits.	Clean or replace pads.
Water being blown into the building.	Loose water hose connections.	Tighten all connections.
	Water hose broken.	Replace any cracked or broken hoses.
	Cover not fitted on float valve.	Install correct cover on float valve to prevent spray.
	Pads not fitted correctly into pad frames.	Make sure pads properly installed.
	Water level too low, causing pump to create fountain that is being sucked into air stream.	Increase water level.
	Incorrect or damaged pads fitted.	Replace with manufacturer's recommended pads.
Unpleasant odour.	New cooler pads.	Drain tank, refill, run pump for a while.
	Cooler located near source of unpleasant odour.	Remove source of odour or relocate cooler.
	Algae in pan water.	Drain pan, clean thoroughly with strong cleansing agent, refill, change pads.
	Pads remain wet after shut down.	Run fan on "vent" for 10 minutes after cooling cycle to dry pads out.
	Heavy pad deposits.	Clean or replace pads.

**EXPLODED VIEWS AND REPLACEMENT PARTS**

When ordering replacement parts, please quote item number and description.

TYPE	SIDE DRAFT	DOWN DRAFT
Small	EAS148	EAD148
Medium	EAS265	EAD265
Large	EAS385	EAD385

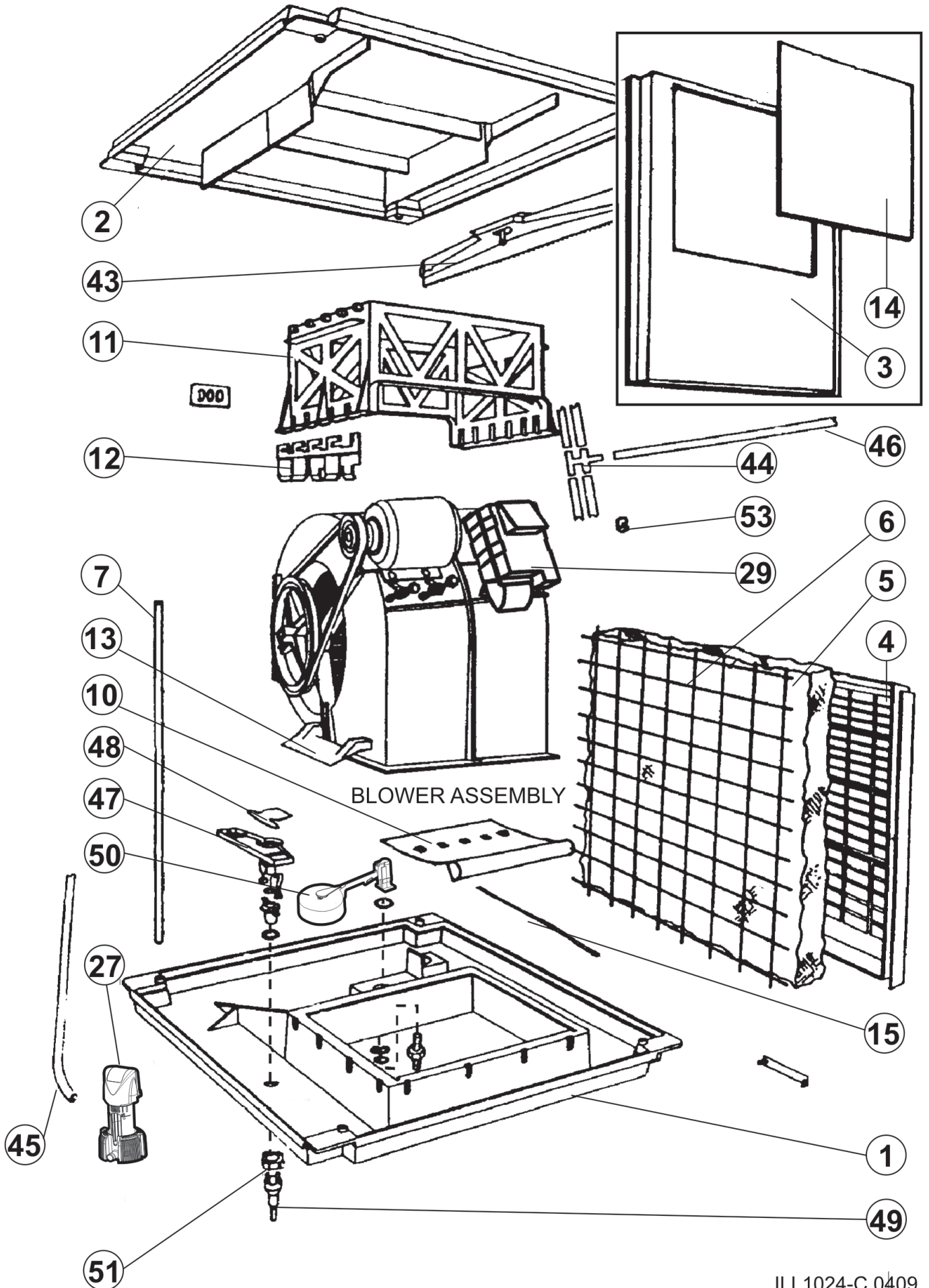


**V-BELT REPLACEMENT**

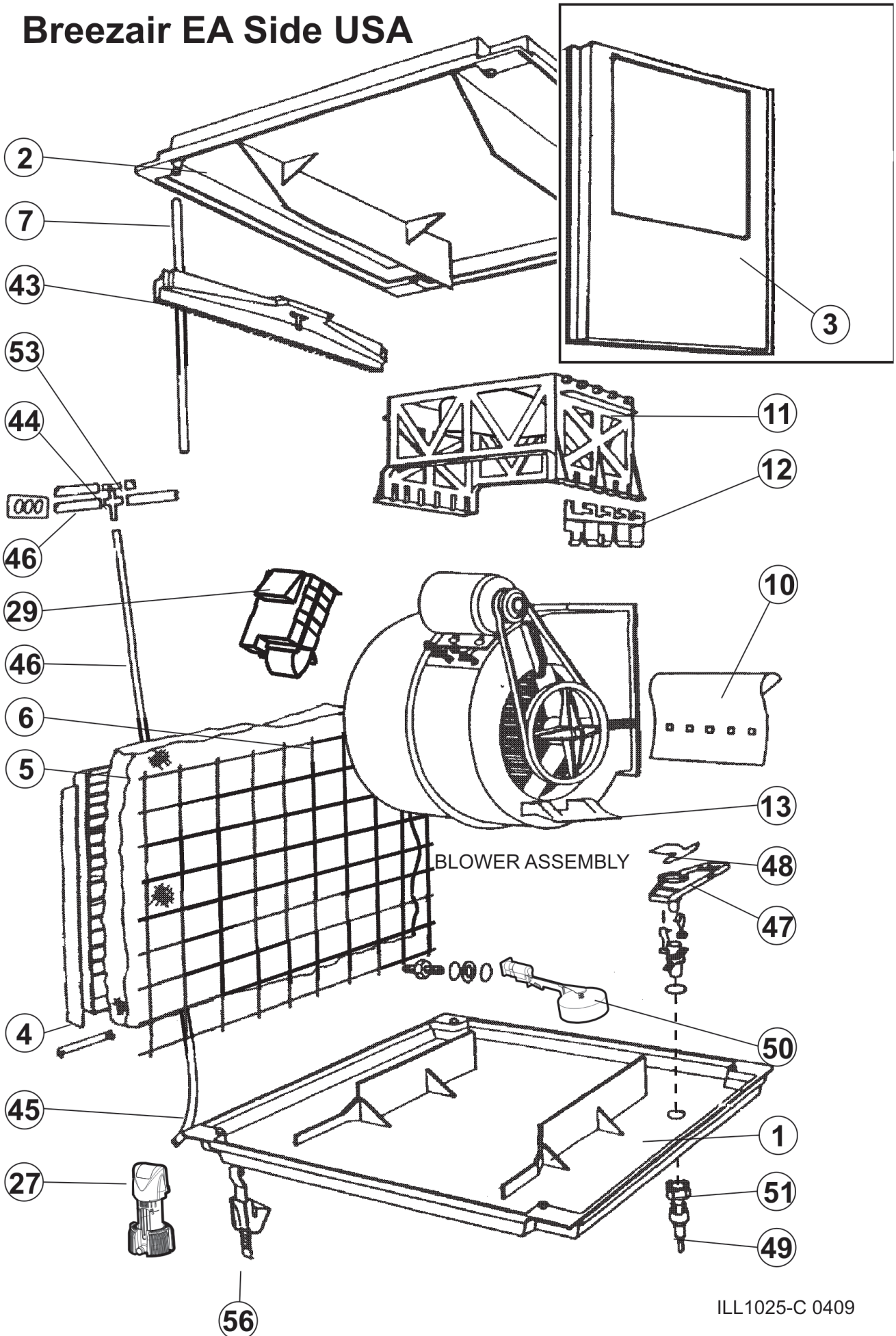
Refer to table for appropriate belt size information.

	SIDE DRAFT	DOWN DRAFT
Small	EAS148 - A49 (supplied), 4L-510 (alternate)	EAD148 - A49 (supplied), 4L-510 (alternate)
Medium	EAS265 - A50 (supplied), 4L-520 (alternate)	EAD265 - A50 (supplied), 4L-520 (alternate)
Large	EAS385 - A55 (supplied), 4L-570 (alternate)	EAD385 - A54 (supplied), 4L-560 (alternate)

# Breezair EA Down USA



# Breezair EA Side USA



ILL1025-C 0409







ITEM	DESCRIPTION	QTY
1	PAN (TANK)	1
2	LID	1
3	PANEL FRONT (for Side draft and small down draft)	1
4	PAD FRAME	3 or 4
5	PAD ASSEMBLY	3 or 4
6	WIRE ASSEMBLY (pad retainer)	3 or 4
7	POST CORNER	4
8	SCROLL (blower housing) LH (motor side)	1
9	SCROLL (blower housing) RH	1
10	PLATE (cut-off)	1
11	BRIDGE	1
12	CONNECTOR (lid to scroll) for small down draft	2
13	BAFFLE (anti-vortex)	2
14	COVER PLATE (small down draft only)	1
15	SEALING TAPE	
16		
17	PLATE (motor mount)	1
18	BOLT ROUND HEAD COACH	2
19	SPEED NUT 5/16 UNC (motor mount)	2
19a	BOLT 5/16 HEX. (motor mount)	2
20	NUT 5/16 HEX. (adjuster bkts-2 & bolts-4)	6
21	BRACKET adjuster	2
22	BOLT 5/16 adjusting	2
23	BOOT plastic, adjuster bolt tip	2
24	RIVETS & WASHERS	
25	PLUG for slots in down draft pan, blower mount upstand.	16
26	WASHER, NYLON float valve	1
27	PUMP WATER	1
28	MOTOR BLOWER	1
29	JUNCTION BOX	1
30	BLOWER CENTRIFUGAL	1
31	SHAFT BLOWER	1
32	BEARING BLOWER	2
33	MOUNT RESILIENT BEARING	2
34	MOUNT, BEARING non-drive end	1
35	MOUNT, BEARING drive end	1
36	LOCK, BEARING non-drive end	1
37	LOCK, BEARING drive end	1
38	PULLEY, BLOWER, 8" OR 9"	1
39	PULLEY, MOTOR - adjustable	1
40	PIN, plastic, black	3
41	CAP, END SHAFT	1
42	V-BELT	1
43	SPREADER water distribution	3 or 4
44	4-WAY DISTRIBUTOR (water)	1
45	HOSE ¾" ID, PVC water distribution	
46	HOSE ½" ID, PVC water distribution	
47	BLEED-OFF FITTING	1
48	BLEED STOP used only where bleed illegal	1
49	BLEED-OFF ADAPTOR	1
50	FLOAT VALVE, AUTO	1
51	BLEED-OFF LOCKING NUT	1
53	CAP used to plug any unused distributor outlet	1
54	ADAPTOR, ROOF JACK (galv. steel)	1
56	TIE DOWN, ANCHOR & STRAP	4



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**[www.convaircooler.com](http://www.convaircooler.com)**

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Accordingly, specifications are subject to change without notice.

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