



## OWNERS MANUAL

U.S. Patent 6,223,548

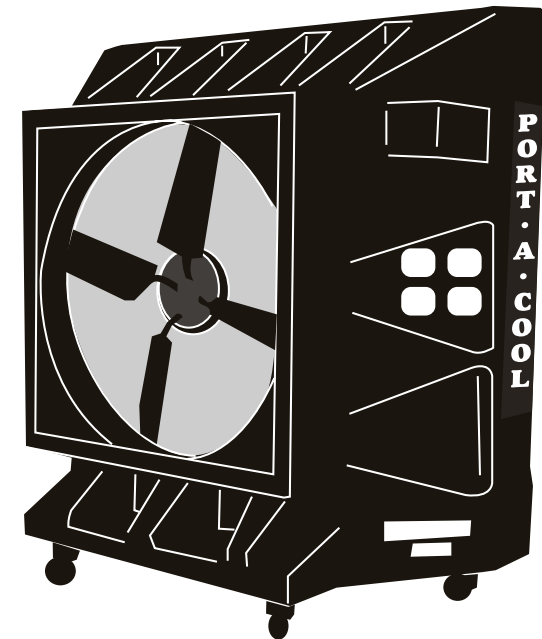
U.S. Patent D 362,905

U.S. Patent 6,502,414

Port-A-Cool® Products and Accessories  
and  
Küül® Pads Cooling Media  
are manufactured by



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### FOR ELECTRIC MODELS

PAC2K482S, PAC2K361S, PAC2K363S, PAC2K36HPVS,  
PAC2K24HPVS, PAC2K163S, PAC2K163SFC, PAC2K163SHD  
PAC2K16HPVS, PAC2K16HPVSFC

### INCLUDES EXPORT MODELS

PAC16HPFC-22050, PAC16HPFC-22060, PAC2K161FC22050,  
PAC2K161FC22060, PAC2K161S-22050, PAC2K161S-22060, PAC2K16HP-22050,  
PAC2K16HP-22060, PAC2K24HP220-50, PAC2K24HP220-60, PAC2K362S220-50,  
PAC2K36HP220-60, PAC2K36HP220-50, PAC2K481S220-50, PAC2K481S220-60



# PORT-A-COOL®

## Evaporative Cooling Unit

### OWNERS MANUAL

#### FOR ELECTRIC MODELS

PAC2K482S, PAC2K361S, PAC2K363S, PAC2K36HPVS, PAC2K24HPVS, PAC2K163S, PAC2K163SFC,  
PAC2K163SHD, PAC2K16HPVS, PAC2K16HPVSFC

#### INCLUDES EXPORT MODELS

PAC16HPFC-22050, PAC16HPFC-22060, PAC2K161FC22050, PAC2K161FC22060, PAC2K161S-22050,  
PAC2K161S-22060, PAC2K16HP-22050, PAC2K16HP-22060, PAC2K24HP220-50, PAC2K24HP220-60,  
PAC2K362S220-50, PAC2K36HP220-50, PAC2K36HP220-60, PAC2K481S220-50, PAC2K481S220-60

### READ AND SAVE THESE INSTRUCTIONS

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# I. INTRODUCTION

The PORT-A-COOL® unit is a fully self-contained, portable, high efficiency evaporative cooler that is proudly made in America at our Center, Texas factory.

## A. What is Evaporative Cooling?

When trying to understand evaporative cooling, it may be best to think of air as being like a sponge, in that regard, air has an ability to absorb moisture that it comes in contact with. The amount of moisture that the air will absorb depends on the state of the air, or specifically, how much moisture the air already contains and the temperature of the air. If the air is warm and contains only a small amount of moisture, it will more readily absorb moisture. As air cools, its volume decreases, and with it, its ability to absorb moisture decreases.

The term "relative humidity" describes the quantity of water in the air in relation to its total capacity. Any volume of air at any given temperature has an ability to hold a certain quantity of moisture. If the air contains 20% of its total capacity to hold moisture, the relative humidity is said to be 20%. Whereas, a humidity of 100% indicates that the air at this temperature and pressure is holding all the moisture it can. If the air has less than 100% relative humidity when entering the PORT-A-COOL® unit, then it has the ability to hold more moisture, and will thus evaporate more water and cool more effectively.

When describing the amount of moisture in the air, the term relative humidity is used because the absorption capacity of air changes relative to air temperature. The warmer the air, the more absorbent it becomes, and can consequently hold more water. That is to say that air that has a 100% relative humidity can hold no more water vapor. However, if the air is heated, it expands, and as a result the relative humidity decreases even though the total amount of water vapor in the air has not changed. As a result, we must describe the level of humidity relative to its maximum capacity. Is it a 50°F sponge or an 80°F sponge? An 80°F sponge will hold more water at 50% humidity than a 50°F sponge.

How is cooling produced? In order to evaporate water, heat (energy) is required. In fact, the evaporation of one gallon of water requires almost 8,700 BTU's. Where does this heat come from? The heat comes from whatever the water is in contact with as it evaporates. This could be a hot sidewalk, your body, a tree, or from the air itself. As the heat is removed from an object, the temperature of that object is decreased. In the case of the PORT-A-COOL® unit, heat is removed from the air, reducing the temperature of the air.

It is important to realize that the temperature of the water does not have a great effect upon the cooling produced by the evaporation. If you were to place a gallon of 50°F water on a warm sidewalk, it would consume 9,000 BTU's during its evaporation, thus making the sidewalk 9,000 BTU's cooler. A gallon of 90°F water would produce 8,700 BTU's of cooling, only a 3 percent difference in the total result. This translates into a difference of less than 1° F in the performance of a PORT-A-COOL® unit.

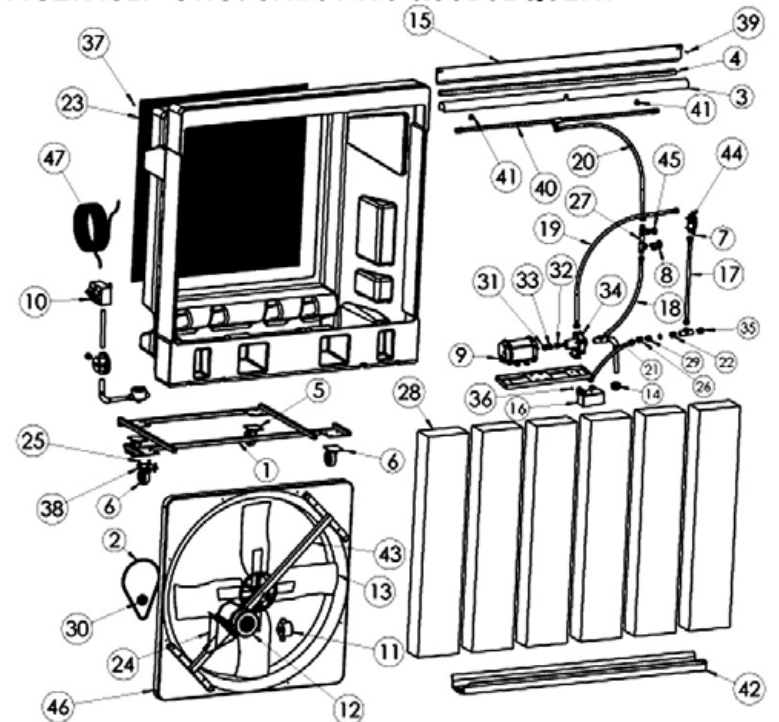
The following table demonstrates the BTU's removed from the air based on a given amount of water evaporated in an hour by the PORT-A-COOL® unit.

U. S. Gallons / Hour	Total BTU's Removed
10 (37.8 liters or 8.3 Imperial Gallons)	87,000
12 (45.4 liters or 10.0 Imperial Gallons)	104,400
14 (53.0 liters or 11.7 Imperial Gallons)	121,800

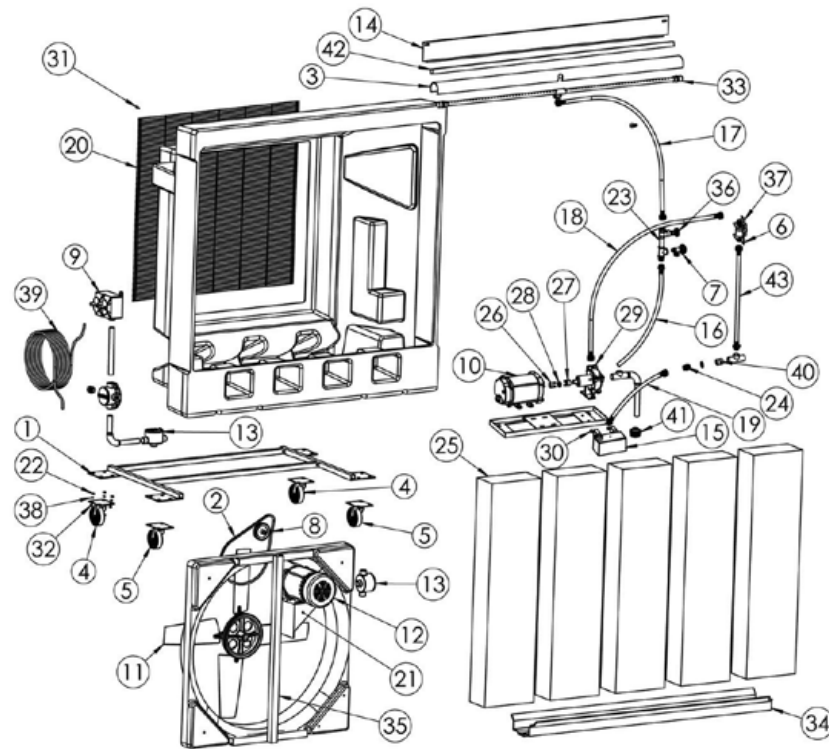
For actual temperature drops refer to Appendix A.

In simple terms, evaporative cooling is nature's way of cooling. The PORT-A-COOL® unit utilizes the same phenomenon, but in an extremely efficient manner.

## PAC2K48EP ORG. SN#61410 & SUBSEQUENT



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BASE-2K48	CASTER BASE ASSM FOR 48" PAC	25	N-516-NY-LOK	5/16-18 NY-LOK NUT FOR CASTERS
2	BELT2K-45-01	A-45 FAN BELT	26	PAC-FLB-01	BRASS INLET FITTING
3	BONNET-04	48" SPRAY BAR BONNET	27	PAC-FLB-02	PLUMBING ASSEMBLY
4	BRACE-48-03	BONNET BRACE FOR 48" UNIT	28	PA-D660-G	REPLACEMENT PAD (6 per unit)
5	CASTERS-2K-5	8" PNEUMATIC SWIVEL CASTER	29	PRES-REG-01	WATER PRESSURE REGULATOR
6	CASTERS-2K-6L	8" PNEU LOCKING SWIVEL CASTER	30	PULLY-3.75	3.75 O.D. MOTOR PULLEY
7	CTRL-VALVE-BRKT	CONTROL VALVE MOUNTING BRACKET	31	PUMP-ACC-07	1/2" COUPLING
8	DRAIN-02	3/4" BOILER DRAIN VALVE	32	PUMP-ACC-08	5/8" COUPLING
9	EXP-ACC-04	1725 RPM 1/4 HP 90° Z-RUNP MOTOR	33	PUMP-ACC-09	RUBBER COUPLING
10	EXP-SWITCH-01	DUAL CONTROL SWITCHES	34	PUMP-EXP-01	BRONZE PEDestal PUMP
11	FAN-ACC-27	MOTOR CONDUIT BOX	35	PVC-ADR-01	3/4" x 1/2" ADAPTOR
12	FAN-ACC-28	48" HAZARDOUS LOCATION MOTOR	36	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
13	FAN-ASSM-05	BLADE & HUB ASSEMBLY-48"	37	S-006	#12 X 1 1/4" TEK SCREW
14	FILTER-01	SUCTION LINE FILTER	38	S-007	5/16-18 TRUSS HEAD SCREW
15	FLAP-46-01	48" FRONT FLAP	39	S-009	10.24 X 3/4" TRUSS HEAD SCREW
16	FLOAT-02	FLOAT VALVE	40	SPRAY-06	SPRAY BAR FOR 48" PAC
17	HOSE-FF16	1/2" X 16' LONG FEM/FEM HOSE	41	SPRAY-ACC-04	CLAMP FASTENER 1029
18	HOSE-FF36	3/4" X 36' LONG FEM/FEM HOSE	42	TROUGH-03	PAD TROUGH FOR 48" PAC
19	HOSE-FF50	1/2" X 50' LONG FEM/FEM HOSE	43	UPRIGTS-48	UPRIGHT FOR 48" PAC
20	HOSE-FF73	3/4" X 73' LONG FEM/FEM HOSE	44	VALVE-05	1/2" BALL VALVE
21	HOSE-FM	1/2" X 24' LONG MALE/FEM HOSE	45	VALVE-06	3/4" GATE VALVE
22	HOSE-FTG-06	FEM/FEM 3/4" BRASS SWIVEL	46	VENTUR-48-01	VENTURI FOR 48" PAC FAN ASSEMBLY
23	MESH-PAC-06	FAN SCREEN	47	WIRE-143-01	POWER CORD 50' LONG
24	MOTOR-MNT-46	MOUNT/36 FOOT MOUNT MOTOR			



## B. Humidity and Evaporative Cooling.

A given volume of air at a certain temperature and pressure has the ability to absorb and hold a certain amount of water vapor. If that volume of air contains 50% of the amount of moisture that it is capable of holding, it is said to be at 50% relative humidity. The higher the temperature of the air, the higher the amount of moisture it is capable of holding. Any change in the temperature without a corresponding change in the pressure results in an increase or decrease in the amount of water vapor the air can hold.

If the temperature increases without an increase in the pressure, the result is a decrease in the relative humidity, and thus an increase in its ability to hold moisture. That is to say that in the morning the humidity may be high, but as the day passes and the temperature increases the relative humidity will naturally decrease.

The extent to which relative humidity decreases through the day can be affected by local weather systems and proximity to large bodies of water. If an increase in temperature accompanied by a weather system containing moisture moves in, then the drop in humidity will not be as great. Nevertheless, the fact remains that relative humidity does drop as air temperature increases. In fact, for every 20°F rise in temperature, the moisture-holding ability of air doubles. For instance, if the temperature of the air was 70°F and the relative humidity was 100% at 5 a.m., and the temperature increased to 90°F at noon, the moisture holding ability of the air would double.

As a result, the air would now be holding only half of the moisture it is capable of holding, and the relative humidity of the air would drop to 50%.

The hotter the day, the drier the air becomes, and the more cooling that can take place through the evaporation of water. This means that when the day gets hot enough to require cooling, the relative humidity will be much lower than in the morning and will allow an evaporative cooling device to work more effectively.

Since any evaporative cooling device must evaporate water to achieve cooling, more water vapor is put into the air. As the ambient relative humidity increases, it becomes more difficult to put moisture into the air. The efficiency of any evaporative cooling device is directly related to its ability to evaporate water (cooling the air) at a given relative humidity. A unit with low efficiency will cool only at low relative humidity levels, while a unit with high efficiency can achieve effective cooling at much higher humidity levels.

## C. Evaporative Cooling and the PORT-A-COOL® unit.

The PORT-A-COOL® unit is the state-of-the-art, high efficiency, portable evaporative cooling system that utilizes high efficiency KÜÜL® brand, rigid cooling media, manufactured with the patent pending "thru-cure"™ process. The PORT-A-COOL® unit's unique patented housing enclosure, along with the KÜÜL® brand high efficiency cooling media, allows the unit to cool effectively in very high relative humidity conditions. Conditions that other portable evaporative cooling devices, such as the old style "swamp coolers", cannot approach.

The public has an initial tendency to equate the PORT-A-COOL® unit with the "swamp cooler," types of evaporative coolers and, in reality, the only thing that they have in common is that they are both evaporative coolers, much as the 1973 model automobile and 2003 model automobile are both cars. The key to efficient evaporative cooling is using a specially designed, high efficiency, rigid cooling media contained in a properly designed housing to insure effective directing of the air over the water saturated media at the proper velocity. The PORT-A-COOL® unit has incorporated all of these features and more.

As explained in PART B of this section, the effectiveness of the PORT-A-COOL® unit is best appreciated when it is above 85°F and below 75% relative humidity. By the time the outside temperature reaches 85°F, the humidity is almost always below 75%. Generally, as one goes up, the other goes down.

For actual temperature drops refer to the charts of Appendix A.

ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BASE-2K36	CADDY	23	PAC-PLB	PLUMBING ASSEMBLY
2	BELT2K-48-01	A-48 FAN BELT	24	PAC-PAB-01	BRASS INLET FITTING
3	BONNET-01	SPRAY BAR BONNET	25	PAD6048/G	REPLACEMENT PAD (5per unit)
4	CASTERS-2K	SWIVEL CASTER	26	PUMP-ACC-07	1/2" COUPLING
5	CASTERS-2KL	LOCKING SWIVEL CASTER	27	PUMP-ACC-08	5/8" COUPLING
6	CTRL-VALVE-BRKT	CONTROL VALVE MTG BRKT	28	PUMP-ACC-09	RUBBER COUPLING
7	DRAIN-01	1/2" BOILER DRAIN VALVE	29	PUMP-EXP-01	BRONZE PEDESTAL PUMP
8	PULLEY-3.75	3.75 O.D.PULLEY	30	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
9	EXP-SWITCH-01	DUAL CONTROL SWITCH-01	31	S-006	#12 X 1 1/4" TEK SCREW
10	EXP-ACC-04	1725 RPM 1/4 HP/60HZ PUMP MOTOR	32	S-007	5/16-18 TRUSS HEAD SCREW
11	FAN-ASSM-01	BLADE & HUB ASSEMBLY-36"	33	SPRAY-06	SPRAY BAR FOR 36" PAC
12	FAN-ACC-03	36 HAZARDOUS LOCATION MOTOR	34	TROUGH-01	PAD TROUGH FOR 36" PAC
13	FAN-ACC-04	MOTOR CONDUIT BOX	35	UPRIGHTS-36	UPRIGHT FOR 36" PAC
14	FLAP-36-01	36" FRONT FLAP	36	VALVE-01	1/2" GATE VALVE
15	FLOAT-02	FLOAT VALVE	37	VALVE-05	1/2" BALL VALVE
16	HOSE-FF21	1/2" X 21" LONG FEM/FEM HOSE	38	WASHER-04	5/16" LOCK WASHER/CASTERS
17	HOSE-FF57	1/2" X 57" LONG FEM/FEM HOSE	39	WIRE-14/3-01	POWER CORD 50' LONG
18	HOSE-FF32	1/2" X 32" LONG FEM/FEM HOSE	40	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL
19	HOSE-FM21	1/2" X 21" LONG MALE/FEM HOSE	41	FILTER-01	SUCTION LINE FILTER
20	MESH-PAC-02	FAN SCREEN	42	BRACE-36-02	BONNET BRACE FOR 36" UNIT
21	MOTOR-MNT-36	MOUNT/36 FOOT MOUNT MOTOR	43	HOSE-FF15	1/2" X 15" LONG FEM/FEM HOSE
22	N-516-NYLOK	5/16-18 NYLOK NUT FOR CASTERS			

## II. SETUP

### A. Unpacking the PORT-A-COOL® unit.

The standard 24", 36" and 48" electric models of the PORT-A-COOL® unit are shipped completely assembled and sitting on a plastic pallet with a large cover box strapped over the PORT-A-COOL® unit. It is a simple matter to cut the straps and remove the box by lifting it over the PORT-A-COOL® unit. Remove the protective plastic dust cover to expose the PORT-A-COOL® unit. The 16" model PORT-A-COOL® units are shipped in an enclosed corrugated box and need only be removed from the box.

### B. Connecting the water and electricity.

#### Water Connection (PORT-A-COOL® unit must be in upright and level position)

After the PORT-A-COOL® unit has been thoroughly tested at the factory, a special 2-sided brass hose adapter is attached to the water inlet on the side of the PORT-A-COOL® unit, which is below the spray bar adjustment and drain valves. A standard garden hose is attached to this brass hose adapter and cinched down to preclude leaks. Visually verify that the hose washer is in position and in good condition.

In the 16" SFC unit, the water tank in the lower portion is designed to be filled at a remote location and then used without a permanently connected hose. Simply fill the lower tank using the sight glass as a gauge.

WATER SUPPLY INLET PRESSURE SHOULD BE LIMITED TO 50 PSI MAXIMUM

Once the hose connection is made, water may be turned on to the PORT-A-COOL® unit. Water should now be entering through the float valve to fill the sump tank.

To verify that your connections are secure, visually inspect connections for leaks. Once the sump tank is filled, the water flow should cease and the inlet connections may now be visually checked for leaks, paying particular attention to the hose connection into the float valve and the connections into the brass inlet fitting. All of these inspections have been performed at the factory but shipping may have caused connections to loosen.

The cooling pads may now be replaced by reversing the removal operation above in Section II, Paragraph B.

#### Electrical Connection

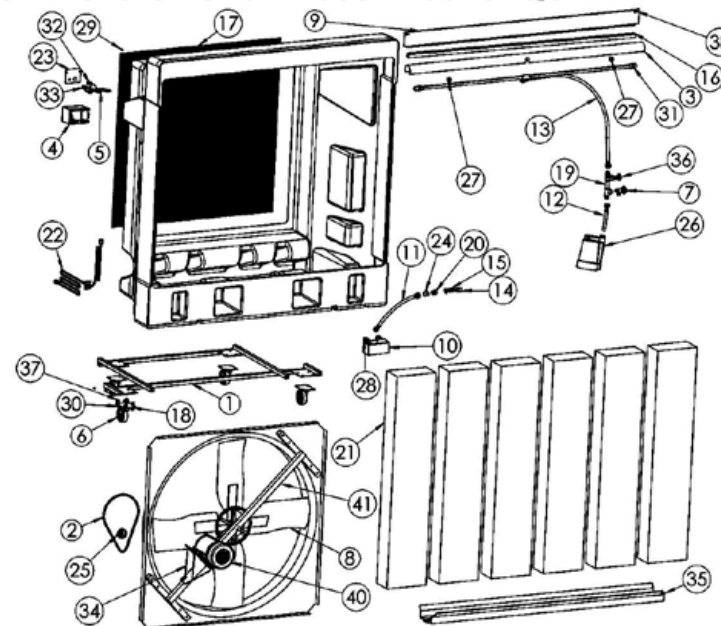
PORT-A-COOL® UNIT MUST BE IN UPRIGHT POSITION WITH COOLING PADS INSTALLED!

All models utilize a single power cord and control switches. Before connecting the plug to an outlet, insure that there is no standing water where the cord may lie or the operator is standing. The use of separate multiple outlet devices are not recommended.

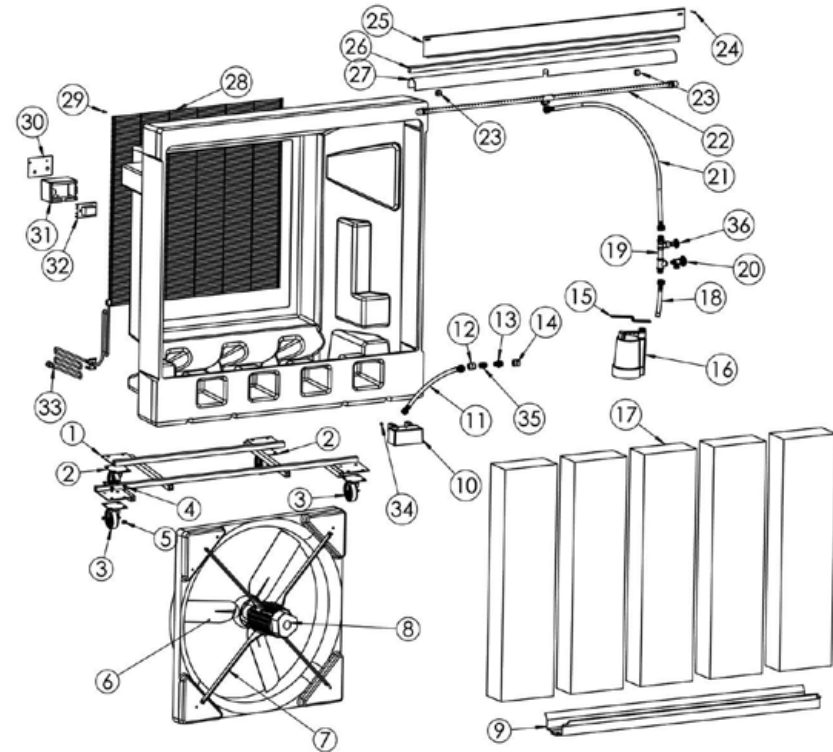
When making electrical connections insure that local and national codes are adhered to. Use only with GFCI Protected Receptacles.

Please refer to the Barcode Product Label on the side of the unit for specific electrical requirements.

## PAC2K482S ORG SN# 66321 SUBSEQUENT



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BASE-2K48	CADDY	21	PAD0606/G	PAD FOR 48" PAC (6 per unit)
2	BELT2K-45-01	A-45 FAN BELT	22	PKTAIL-12	12' ELECTRICAL CORD
3	BONNET-04	SPRAY BAR BONNET	23	PLATE-2SPD-98	SWITCH PLATE 2 SPD
4	BOX-UL-02	2 SPD ELECTRICAL BOX	24	PRES-REG-01	WATER PRESSURE REGULATOR
5	CTRL-2SPD-01	2 SPEED SWITCH SET	25	PULLEY-48-02	AK34 PULLEY
6	CASTER-KIT-02	6" CASTERS SET OF FOUR	26	PUMP-018-4R	L/G 1/8HP SUBMERSIBLE PUMP
7	DRAIN-01	1/2" BOILER DRAIN VALVE	27	SPRAY-AOC-04	CLAMP FASTENER 1029
8	FAN-ASSM-05	FAN BLADE ASSEMBLY FOR 48" UNIT	28	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
9	FLAP-48-01	FRONT FLAP FOR 48" PAC	29	S-006	#12 X 1 1/4" TEK SCREW
10	FLOAT-02	FLOAT VALVE	30	S-007	5/16-18 TRUSS HEAD SCREW FOR CASTERS
11	HOSE-FM	1/2" X 2' MALE/FEM HOSE INLET TO FLOAT	31	SPRAY-06	SPRAY BAR FOR 48" PAC
12	HOSE-FF3	1/2" X 3' FEM/FEM HOSE FLB TO PUMP	32	SWITCH-TOG-03	TOGGLE SWITCH FOR 48" PAC
13	HOSE-FF3	1/2" X 6' FEM/FEM HOSE SPRAY BAR TO FLB	33	SWITCH-TOG-02	2 SPEED TOGGLE SWITCH
14	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL	34	MOTOR-MNT-48	MOTOR MOUNT FOR 48" UNIT
15	PVC-ADP-01	3/4" X 1/2" ADAPTER	35	TROUGH-03	PAD TROUGH FOR 48" PAC
16	BRACE-48-03	BRACE FOR BONNET	36	VALVE-01	1/2" GATE VALVE
17	MESH-PAC-06	FAN SCREEN	37	WASHER-04	5/16" LOCK WASHER/CASTERS
18	N-516-NYLOK	5/16-18 NYLOK NUT FOR CASTERS	38	S-009	10-24 X 3/4" TRUSS HEAD SCREW
19	PAC-PLB-02	BLACK PLUMBING ASSEMBLY	39	S-013	#10 X 3/8" WASHER HEAD SCREW
20	PAC-PLB-01	BRASS INLET FITTING	40	MOTOR-010-01	1HP/2SPD MOTOR FOR 48" UNIT
			41	UPRIGHTS-48	UPRIGHT FOR 48" UNIT



ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	BASE-2K36	CADDY	19	PAC-PLB-02	BLACK PLUMBING ASSEMBLY
2	CASTER-2K	SWIVEL CASTER	20	DRAIN-01	1/2" BOILER DRAIN
3	CASTER-2K-L	LOCKING SWIVEL CASTER	21	HOSE-FF57	FEMFEM HOSE 57" LONG
4	S-007	5/16-18 TRUSS HEAD SCREW	22	SPRAY-06	SPRAY BAR FOR 36" PAC
5	N-516-NYLOK	5/16-18 NYLOK NUT	23	SPRAY-ACC-04	CLAMP FASTENER 1029
6	BLADE-ASSM-01	VOSTERMAN 36" FAN BLADE ASSEMBLY	24	S-009	10-24 X 3/4" TRUSS HEAD SCREW
7	FAN36HP-MNT-01	PI-CO 3VP1006 MOTOR SUPPORT ARM-36" PAC	25	FLAP-36-01	FRONT FLAP FOR 36" PAC
8	MOTOR-012-05	1/2 HP DIRECT DRIVE VOSTERMAN MOTOR	26	BRACE-36-02	BONNET BRACE
9	TROUGH-01	PAD TROUGH FOR 36" PAC	27	BONNET-01	SPRAY BAR BONNET FOR 36" PAC
10	FLOAT-T02	FLOAT VALVE	28	MESH-PAC-02	FAN SCREEN FOR 36" PAC
11	HOSE-FM30	FEMALE HOSE 30" LONG	29	S-006	#12 X 1 1/4" TEK SCREW
12	PRES-REG-01	WATER PRESSURE REGULATOR	30	PLATE-VARSPD-98	SWITCH PLATE FOR HP UNIT
13	PAC-PLB-01	BRASS INLET FITTING	31	BOX-UL-03	ELECTRICAL BOX
14	HOSE-FTG-05	FEMFEM 3/4" BRASS SWIVEL	32	CTRL-VAR/SPEED	VARIABLE SPEED CONTROL SWITCH
15	PUMP-ACC-13	PUMP BRACKET- 1/6 HP PUMP	33	PGTAL-12	12" ELECTRICAL CORD
16	PUMP-016-4R	SUBMERSIBLE 1/6 HP PUMP	34	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
17	PAD048/G	PAD FOR 36" PAC (5 per unit)	35	PVC-ADP-01	3/4" X 1/2" REDUCING ADAPTER
18	HOSE-FF	FEMFEM HOSE 24" LONG	36	VALVE-01	1/2" GATE VALVE

### III. OPERATING PROCEDURES

#### Specifications

Each model of the PORT-A-COOL® unit has its own set of operational specifications, sizes, weights, voltage frequency, current requirements, etc. Please ask for the specifications for your model from your distributor or check the serial number plate.

#### B. Placement of the PORT-A-COOL® unit.

**PORT-A-COOL® unit should be used in well-ventilated areas only.**

There are three primary considerations when deciding where to place the PORT-A-COOL® unit.

- 1) Fresh Air Supply - The inlet side of the PORT-A-COOL® unit (pad side) must be placed so as to insure that a smooth, uninterrupted supply of fresh air is available.
- 2) Air Pattern - The cool air discharged from (fan side) the PORT-A-COOL® unit should have a clear area in which to circulate, being as free of obstructions as possible.
- 3) Ventilation (Exhaust) - There should be a defined place in which the air from the PORT-A-COOL® unit can be exhausted from the area being cooled. This is to prevent the PORT-A-COOL® unit from recirculating air that has already been through the cooling process.

A primary consideration when actually deciding where to place the PORT-A-COOL® unit is the direction of the airflow. The PORT-A-COOL® unit creates a fan-shaped air pattern that disperses the air over a large area. This pattern may be disturbed or broken up by obstacles such as shelves, work benches, etc. It is important to insure that a clean, unbroken path for the air from the PORT-A-COOL® unit is provided to the maximum extent possible.

It may be desirable to raise the PORT-A-COOL® unit above any low obstructions in order to increase the overall coverage. When raising the height, insure that the platform constructed for holding the PORT-A-COOL® unit is stable, well constructed, and will not allow the PORT-A-COOL® unit to tip over. The PORT-A-COOL® unit must be level and in the upright position. When supporting with a platform allow for the full weight of a functioning PORT-A-COOL® unit by including the weight of the water both in the sump tank and the added weight of the water saturated cooling pads. The total weight could be in excess of 500 lbs. (227 kg.).

When the PORT-A-COOL® unit is placed near a wall or other obstruction, it is recommended that a distance of at least 3 feet from the wall or obstruction to the face of the cooling pads be maintained. This allows the unrestricted flow of warm air to the cooling pad side of the PORT-A-COOL® unit. When using multiple units in close proximity, be sure to aim the PORT-A-COOL® unit so that the air flows compliment each other and not oppose. Opposition will negate the airflow and allow an area of dead air to accumulate between PORT-A-COOL® units.

#### C. Filling with water. (ALL MODELS EXCEPT FILLER CART MODELS)

Refer to Section II, Part C for details on connecting to a water supply line. Once the unit is connected to a water supply, turn on the supply valve allowing the PORT-A-COOL® unit sump tank to fill with water. Once the sump tank is full, the float valve will shut off the supply flow. (50-PSI max. inlet water pressure.)

On filler cart models, fill the 22-gallon reservoir referring to the sight glass on the front of the reservoir for filling amounts.

## D. Starting the pump and adjusting the water flow.

**CAUTION - DO NOT RUN PUMP WHEN SUMP IS DRY.**

Once the sump tank is full, moving the pump switch to the "ON" position will turn on the pump.

When initially turning on the pump, the level in the sump will drop suddenly and restart the flow of supply water. This is a normal condition, as the cooling pads require a large amount of water for proper wetting.

When the PORT-A-COOL® unit is new, the new pads will require an initial 'breaking-in' period. This period is required for the pads to begin readily absorbing water. It may require up to a week to achieve maximum efficiency.

It is important to insure that the spray bar is properly adjusted when first starting the water flow in the PORT-A-COOL® unit. Increasing the flow using the SPRAY BAR ADJUSTMENT valve on the side of the unit makes this adjustment.

## E. Starting the fan. (Cooling pads must be installed and caster brakes must be engaged.)

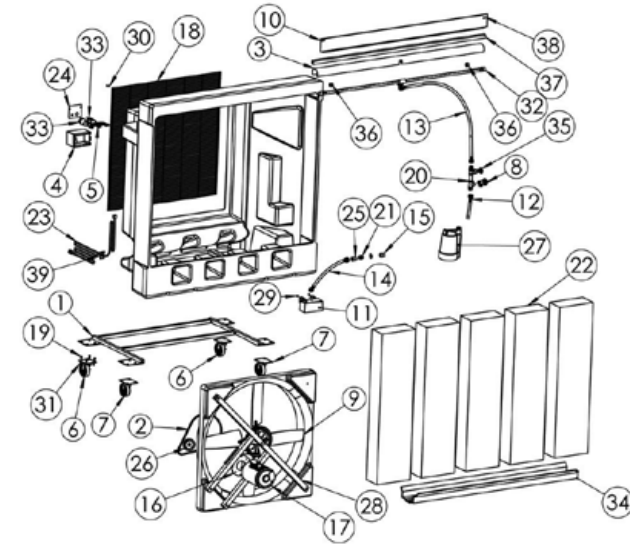
Starting the fan is as simple as turning the fan switch to the 'ON' position or to one of the available speeds on the multi-speed models. On the multi-speed model, it is preferred to step slowly through the speeds allowing the fan to obtain its full speed at the LOW speed before going to MEDIUM and before going to HIGH.

Proper adjustments should leave the pads saturated with water, but not flooded. Pads should appear wet, however, cascading amounts of water can actually reduce cooling efficiency. Proper adjustment will prevent problems and increase cooling capacity.

When turning the fan off at the end of the day or week, the pump should be turned off about 15 minutes before the fan to allow the cooling pads to dry. This will increase the life of the pads.

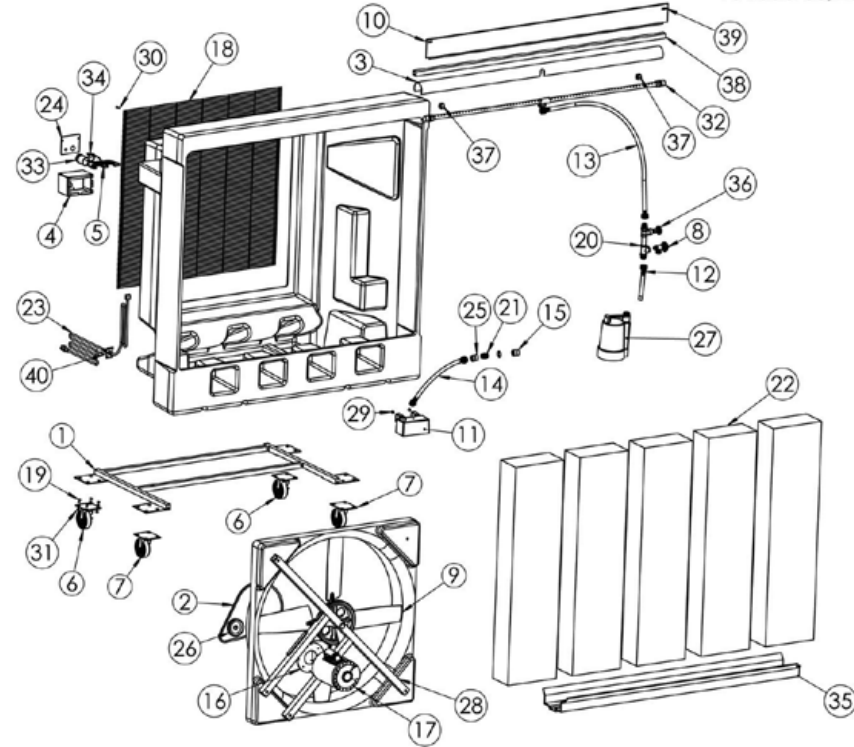
## PAC2K361S REV. I SN# 76066 & SUBSEQUENT

REVISED 02/12/04



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BASE-2K36	CADDY	24	PLATE-1SPD-98	SWITCH PLATE 1 SPD
2	BELT2K-36-01	A-36 FAN BELT	25	PRES-REG-01	WATER PRESSURE REGULATOR
3	BONNET-01	SPRAY BAR BONNET	26	PULLEY-3.75	3.75 O.D. PULLEY
4	BOX-UL-02	1 SPD ELECTRICAL BOX	27	PUMP-016-4R	1/5 HP SUBMERSIBLE PUMP FOR 36" PAC
5	CTRL-1SPD-01	1 SPEED SWITCH SET	28	RTRM-PLT-36-01	36" RTRM PLT TRUSSON ASSEMBLY
6	CASTERS-2K	5MMVEL CASTER	29	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
7	CASTERS-2K-L	LOCKING 5MMVEL CASTER	30	S-006	#12 X 1 1/4" TEK SCREW
8	DRAIN-01	1/2" BOILER DRAIN VALVE	31	S-007	5/16-18 TRUSS HEAD SCREW
9	FAN-ASSM-01	PLASTIC BLADE & HUB ASSEMBLY	32	SPRAY-06	SPRAY BAR FOR 36" PAC
10	FLAP-36-01	FRONT FLAP FOR 36"	33	SWITCH-TOG-03	TOGGLE SWITCH FOR 36" PAC
11	FLOAT-02	FLOAT VALVE	34	TROUGH-01	PAD TROUGH FOR 36" PAC
12	HOSE-FF	1/2" X 24" FBM/FEM HOSE RLB TO PUMP	35	VALVE-01	1/2" GATE VALVE
13	HOSE-FFS7	1/2" X 57" FBM/FEM HOSE SPRAY BAR TO RLB	36	SPRAY-ACC-04	CLAMP FASTENER 1029
14	HOSE-FMB0	1/2" X 30" MALE FEM HOSE INLET TO FLOAT	37	BRACE-36-02	BONNET BRACE
15	HOSE-FTG-05	FEM/FEM 3/4" BRASS 5MMVEL	38	S-009	10-24 X 3/4" TRUSS HEAD SCREW
16	MOTOR-MNT-01	MOUNT FOR 36" MOTOR	39	S-013	#10 X 3/8" WASHER HEAD SCREW
17	MOTOR-012-01STA	1 SPD MOTOR W/63" HARNESS (FRCD. W/9K522B)			
18	MESH-PAC-02	FAN SCREEN			
19	N-516-NY-L0K	5/16" NYLOCK NUT FOR CASTERS			
20	PAC-FLB-02	BLACK PLUMBING ASSEMBLY			
21	PAC-FLB-01	BRASS INLET FITTING			
22	PAD0048/G	PAD FOR 36" PAC (5 per unit)			
23	PRTAIL-12	12' ELECTRICAL CORD			





ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BASE-2K36	CADDY	21	PAC-PLB-01	BRASS INLET FITTING
2	BELT2K-38-01	A-38 FAN BELT	22	PAD6048/G	PAD FOR 36" PAC (5 per unit)
3	BONNET-01	SPRAY BAR BONNET	23	PGTAIL-12	12" ELECTRICAL CORD
4	BOX-UL-01	3 SPD ELECTRICAL BOX	24	PLATE-3SPD-98	SWITCH PLATE 3 SPD
5	CTRL-3SPD-01	3 SPEED SWITCH SET	25	PRES-REG-01	WATER PRESSURE REGULATOR
6	CASTERS-2K	SWIVEL CASTER	26	PULLEY-3.75	3.75 O.D. PULLEY
7	CASTERS-2K-L	LOCKING SWIVEL CASTER	27	PUMP-016-4R	1/6 HP SUBMERSIBLE PUMP FOR 36" PAC
8	DRAIN-01	1/2" BOILER DRAIN VALVE	28	RTM-FULT36-01	36" RTM FULTRUSION ASSEMBLY
9	FAN-ASSM-01	PLASTIC BLADE & HUB ASSEMBLY	29	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
10	FLAP-36-01	FRONT FLAP FOR 36"	30	S-008	#12 X 1 1/4" TEK SCREW
11	FLOAT-02	FLOAT VALVE	31	S-007	5/16-18 TRUSS HEAD SCREW
12	HOSE-FF	1/2" X 24" FEM/FEM HOSE PLB TO PUMP	32	SPRAY-06	SPRAY BAR FOR 36" PAC
13	HOSE-FF57	1/2" X 57" FEM/FEM HOSE SPRAY BAR TO PLB	33	SWITCH-TOG-03	TOGGLE SWITCH FOR 36" PAC
14	HOSE-FM30	1/2" X 30" MALE/FEM HOSE INLET TO FLOAT	34	SWITCH-ROT-02	3 SPEED ROTOR SWITCH
15	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL	35	TROUGH-01	PAD TROUGH FOR 36" PAC
16	MOTOR-MNT-01	MOUNT FOR 36" MOTOR	36	VALVE-01	1/2" GATE VALVE
17	MOTOR-012-02STA	3 SPD MOTOR W/63" HARNESS	37	SPRAY-ACC-04	CLAMP FASTENER 1029
18	MESH-PAC-02	FAN SCREEN	38	BRACE-36-02	BONNET BRACE
19	N-516-NYLOK	5/16" NYLOK NUT FOR CASTERS	39	S-009	10-24 X 3/4" TRUSS HEAD SCREW
20	PAC-PLB-02	BLACK PLUMBING ASSEMBLY	40	S-013	#10 X 3/8" WASHER HEAD SCREW

## IV. MAINTENANCE & STORAGE

Very little maintenance is actually required on the PORT-A-COOL® unit. The primary topic that accounts for most of the maintenance is cleanliness. Keeping the PORT-A-COOL® unit clean will do more than any other single item to keep your PORT-A-COOL® unit in peak operating condition. The rugged, corrosion-resistant construction of the PORT-A-COOL® unit and industrial grade components make for the low maintenance characteristics. In exceedingly dusty or dirty environments, optional filters are available from your distributor (PAC-FRAME-16, PAC-FRAME-24, PAC-FRAME-36, PAC-FRAME-48).

### A. Daily Maintenance

Daily maintenance is really more an operational consideration than actual maintenance. On a daily basis, the pump should be turned off approximately 15 minutes before the fan is turned off. This will allow the cooling pads to dry out and help extend their life, helping to control the growth of mildew, mold, bacteria and other odor causing elements.

### B. Weekly Maintenance

At the end of the week or at a scheduled time, the unit should be shut down and the sump tank should be drained. Closing the Spray Bar Adjustment Valve and opening the Drain Valve accomplish this. If it is desired, a hose may be attached to the Drain Valve to direct the drained water to a remote disposal area. Once the Drain Valve is open, starting the pump will drain the unit. When the pump has removed most of the water a small amount will be left in some areas. In the 16" models, removal of the drain plug will accomplish the same results without the use of the pump.

In the 16" SFC models, disconnect the inlet hose going into the side of the unit and use the pump to drain the unit.

Once the sump is drained and the power disconnected, the pads may be removed to allow inspection of the sump tank. Assuming that the PORT-A-COOL® unit is in a dusty environment, dust will collect in the sump tank over time. This dirt and any remaining water may be vacuumed out using a wet/dry shop vacuum and wiped clean with a cloth. Also, inspect and clean the Inlet Strainer located on the bottom of the pump. Replace pads in correct airflow direction, referring to label on the pads.

### C. Storage

Storage of the PORT-A-COOL® unit is very simple.

- 1) Drain all water from the sump tank and clean as above, ensuring that the pads and sump are completely dry.
- 2) Roll up the electrical power cord and secure it to ensure that it will not be rolled over, tripped over or caught in equipment.
- 3) Cover the PORT-A-COOL® unit completely to prevent dust build-up and store in a dry area.

**CAUTION: DISCONNECT POWER BEFORE REMOVING COOLING PADS FROM THE PORT-A-COOL® unit!!**

This also helps prevent damage to the pads. Optional dust covers are available from your distributor. (P/N #: PAC-CVR-01, PAC-CVR-02, PAC-CVR-03).

**NOTICE: POWER CORD MAY BE REPLACED ONLY BY THE MANUFACTURER OR QUALIFIED AGENT!!**

## V. TROUBLESHOOTING / REPAIR

### A. Troubleshooting

The most common problems encountered with a PORT-A-COOL® unit are operational problems. The PORT-A-COOL® unit consists of three systems. It is important to determine which system of the PORT-A-COOL® unit the problem is associated with. Certain problems may be associated with more than one system.

When determining which system that the problem is associated with you must first define the problem, i.e., the pump is not running. Although this might seem a bit over-simplified, several things may cause a particular problem. So while defining the problem, a careful check of all systems should be made to fully understand the extent of the problem.

If you have a complete understanding of all the systems of the PORT-A-COOL® unit and how they depend on each other, it becomes much simpler to define and solve any problems.

Although the PORT-A-COOL® unit is designed to be simple to maintain, it will be necessary to have some basic hand tools (screwdrivers, pliers, adjustable wrenches, etc.) as well as a volt/ohm meter for troubleshooting the electrical system.

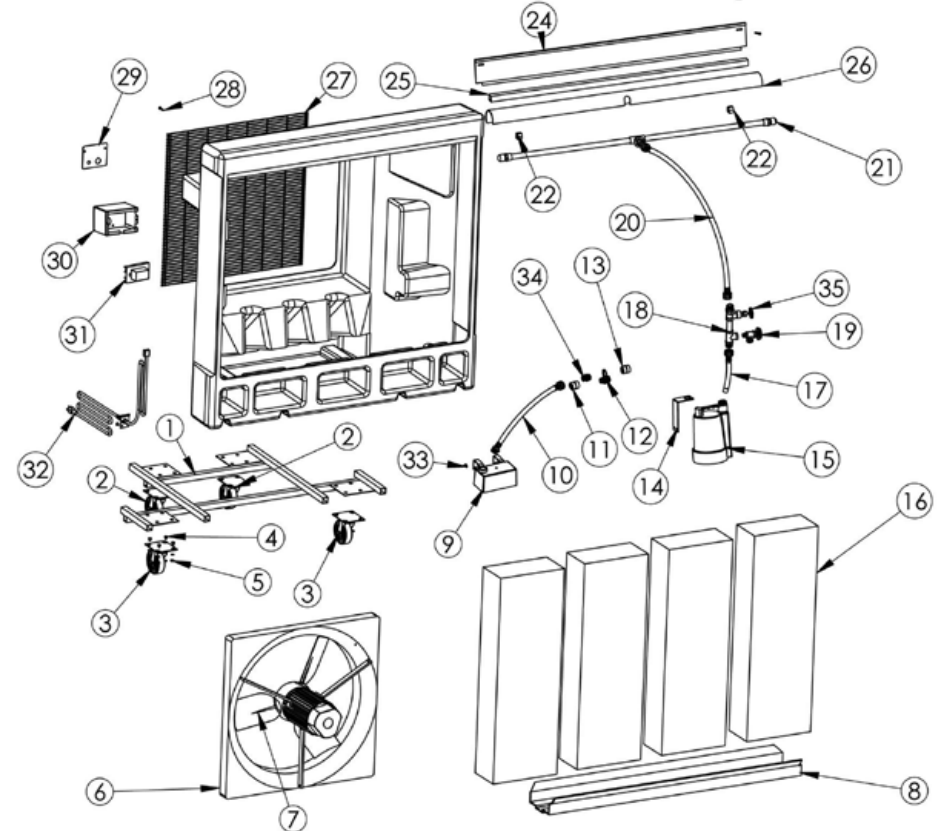
### FAN SYSTEM

This section is divided into the two categories of fans used on all PORT-A-COOL® models: Direct Drive and Belt Drive. Both have some symptoms in common, and both have problems that are particular to each.

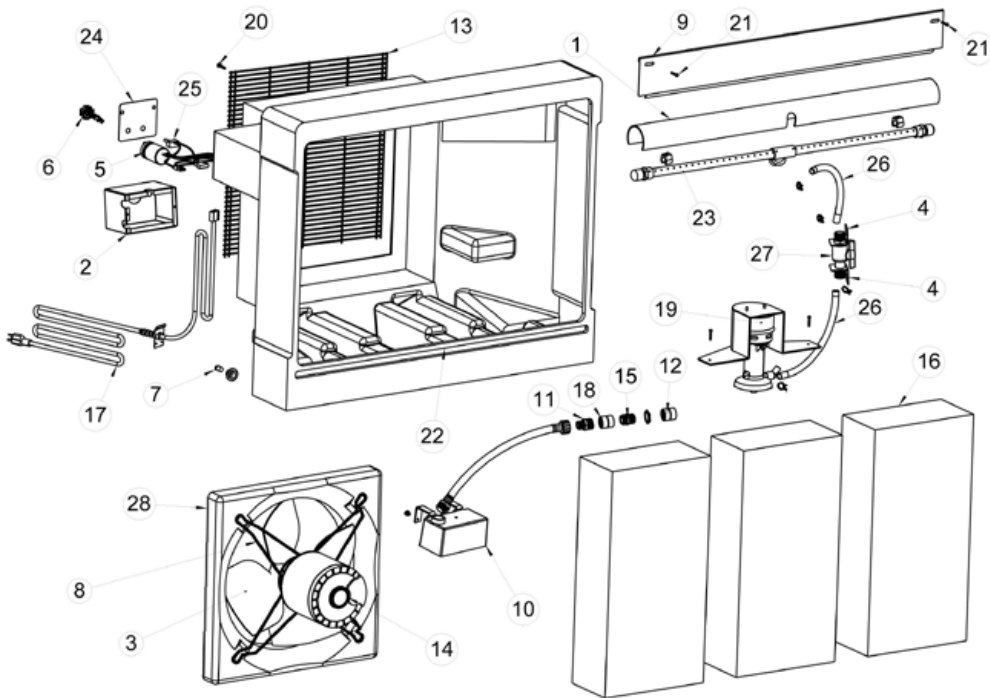
#### CAUTION

**Please use caution when troubleshooting or repairing all electrical components. Be certain that all power is disconnected from the PORT-A-COOL® unit before the cooling pads are removed to gain access to the fan.**

## PAC2K24HPVS REV A. SN# 75815 & SUBSEQUENT revised 04/19/0



ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	BASE-2K24	CADDY	19	DRAIN-01	1/2" BOILER DRAIN
2	CASTER-2K	SWIVEL CASTER	20	HOSE-FF35	FEM/FEM 35" HOSE PLB TOSPRAYBAR
3	CASTER-2K-L	LOCKING SWIVEL CASTER	21	SPRAY-04	SPRAY BAR FOR 24" PAC
4	S-007	5/16-18 TRUSS HEAD SCREW	22	SPRAY-ACC-04	CLAMP FASTENER 1029
5	N-516-NYLOK	5/16-18 NYLOK NUT	23	S-009	10-24 X 3/4" TRUSS HEAD SCREW
6	BLADE-ASSM-02	VOSTERMAN 24" FAN BLADE ASSY. (33deg.)	24	FLAP-24-01	FRONT FLAP FOR 24" PAC
7	MOTOR-012-06	1/3 HP DIRECT DRIVE VOSTERMAN MOTOR	25	BRACE-24-01	BONNET BRACE
8	TROUGH-02	PAD TROUGH FOR 24" PAC	26	BONNET-02	SPRAY BAR BONNET FOR 24" PAC
9	FLOAT-02	FLOAT VALVE	27	MESH-PAC-01	FAN SCREEN FOR 24" PAC
10	HOSE-FM20	FEMALE HOSE 20" LONG INLET TO FLOAT	28	S-006	#12 X 1 1/4" TEK SCREW
11	PRES-REG-01	WATER PRESSURE REGULATOR	29	PLATE-VARSPD-98	SWITCH PLATE FOR HP UNIT
12	PAC-PLB-01	BRASS INLET FITTING	30	BOX-UL-03	ELECTRICAL BOX
13	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL	31	CTRL-VARSPD-02	VARIABLE SPEED CONTROL SWITCH
14	PUMP-ACC-15	PUMP BRACKET- 1/8 HP PUMP 24" PAC	32	PGTAIL-12	12" ELECTRICAL CORD
15	PUMP-016-4R	SUBMERSIBLE 1/8 HP PUMP	33	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
16	PAD6036/G	PAD FOR 24" PAC (4 per unit)	34	PVC-ADP-01	3/4" X 1/2" REDUCING ADAPTER
17	HOSE-FF30	FEM/FEM HOSE 30" LONG PUMP TO PLB.	35	VALVE-01	1/2" GATE VALVE
18	PAC-PLB-02	BLACK PLUMBING ASSEMBLY			



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BONNET-03	SPRAY BAR BONNET	15	PAC-PLB-01	BRASS INLET FITTING
2	BOX-UL-01	3 SPD ELECTRICAL BOX	16	PAD6024/G	PAD FOR 16" UNIT (3 per unit)
3	BLADE-ASSM-06	16" VOSTERMAN FAN BLADE ASSM	17	POWERCORD	ELECT. CORD FOR 16" 24" 36" UNITS
4	CTRL-VALVE-BRKT	FLOW CONTROL VALVE MNT BRKT.	18	PRES-REG-01	WATER PRESSURE REGULATOR
5	CTRL-VS-01	VS SPEED SWITCH ASSM	19	PUMP-0150-1	PUMP 1/70HP SUMBERSABLE PUMP
6	CTRL-KNOB-01	EXT. KNOB FOR VAR. SPD CNTRL	20	S-006	#12 X 1 1/4" TEK SCREW
7	DRAIN-PLUG-01	DRAIN PLUG 16 PAC	21	S-009	10-24 x 3/4" TRUSS HEAD SCREW
8	FAN16HP-MNT-01	16" HP MOTOR SUPPORT ARM	22	SPLASH GUARD	SPLASH GUARD FOR 16" UNIT ONLY
9	FLAP-16-01	3 HOLE FRONT FLAP FOR 16" PAC	23	SFRAY-07	SFRAY BAR FOR 16" PAC
10	FLOAT-02	FLOAT VALVE	24	SWTCHPL-VARSPD	SWTCH COVER PLATE (VS SPD)
11	HOSE-FTG-03	1/2" X 1/2" BARB ADAPTER	25	SWTCH-TOG-03	METAL TOGGLE SWTCH FOR 16" PAC
12	HOSE-FTG-05	FEM/FBM 3/4" X 3/4" BRASS SWMVL	26	TUBE-01	1/2" PLASTIC TUBE (PER FOOT)
13	MESH-PAC-05	FAN SCREEN	27	VALVE-05	1/2" BALL VALVE
14	MOTOR-013-04	1/3 HP VOSTERMAN MOTOR	28	VENT16-INV-01	INJECTION MOLDED VENTURI

### BELT DRIVE MODELS

PROBLEM	CHECK	SOLUTION
Fan motor won't run and makes no sound.	Power cord, switches, circuit breaker, etc.	Check switch connection Reconnect power, reset breaker.
Fan motor won't run and makes a humming sound.	Blade in contact with shroud	Check mounting bolts.
	Motor stalled (will not turn by hand)	Replace motor.
Breaker trips or fuse blows when fan is started.	Motor stall (as above).	Replace motor.
	Other items on circuit.	Remove other items.
Motor overheating and shutting off and restarting several minutes later.	Inlet air obstructed or too close to wall.	Provide minimum 36 inch inlet clearance.
Switch making good contact. makes soft clicking sound.	Faulty motor. Replace switch	Replace motor.
Fan motor won't run and has a burning smell and hums.	Start capacitor leaking from cover.	Replace capacitor.
	Motor stall (as above).	Replace motor.
Fan blade doesn't turn and unit makes squealing sound.	Fan Belt, loose or broken.	Tighten or replace fan belt.
	Fan pulley spinning on shaft.	Tighten pulley set screw.
Fan belts do not last very long.	Motor and fan pulleys misaligned	Realign motor and mount.
Fan will not reach speed but turns and makes humming sound.	Capacitor (where visible) and motor electrical connections.	Replace capacitor or motor.

### DIRECT DRIVE MODELS

PROBLEM	CHECK	SOLUTION
Fan motor won't run and makes no sound.	Power cord, switches, circuit breaker, etc. cord, reset breaker.	Check switch connection Reconnect power
Fan motor won't run and makes a humming sound.	Blade in contact with shroud	Check mounting bolts.
	Motor stalled (will not turn by hand)	Replace motor.
Breaker trips or fuse blows when fan is started.	Motor stall (as above).	Replace motor.
	Other items on circuit.	Remove other items.
Motor overheating and shutting off and restarting several minutes later.	Inlet air obstructed or too close to wall.	Provide minimum 36 inch inlet clearance.
Fan motor won't run and switch makes soft clicking sound.	Faulty motor. Switch making good contact.	Replace motor. Replace switch.
Fan motor won't run and has a burning smell.	Start capacitor leaking from cover.	Replace capacitor.
	Motor stall (as above).	Replace motor.

## WATER SYSTEM

The water system consists of three primary elements: 1) Water Delivery System, 2) Spray Bar Assembly; 3) Pump. Troubleshooting of this system is fairly simple.

The Water Delivery System consists of two assemblies: A) The Water Inlet assembly and B) The Plumbing assembly.

The Water Inlet assembly is made up of three components: 1) The bulkhead fitting, 2) The float valve connection hose and 3) The float valve.

The Plumbing assembly consists of three elements: 1) Riser (PVC components), 2) Drain Valve, 3) Spray Bar Adjustment Valve. The 16 inch model has no riser or drain valve.

The Spray Bar Assembly consists of two components: 1) Spray Bar, 2) Connection Hose.

The pumps that actually move the water through the delivery system are discussed in the charts below. These charts indicate the major symptoms of problems that may be encountered with the Water System components.

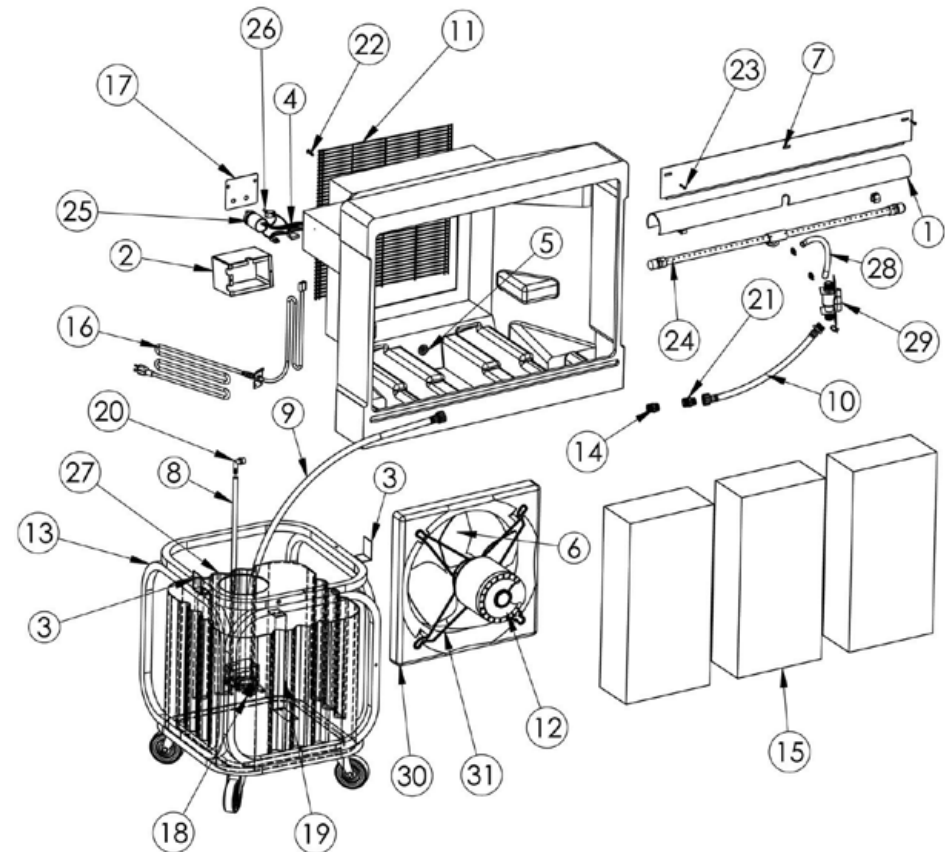
### WATER INLET SYSTEM

PROBLEM	CHECK	SOLUTION
Floor near the PORT-A-COOL® unit is wet. Water flow is too heavy.	Water inlet hose is loose at supply hose or inlet hose is loose at bulkhead fitting	Adjust water flow. Tighten connections and/or replace hose washers.
PORT-A-COOL® unit overflows from sump tank or is spitting water through fan.	Float valve hose is loose at bulkhead fitting or at float valve.	Tighten connections and/or replace hose washers.
	Water pressure is too high to allow float valve to shutoff. (50 psi max.)	Reduce water pressure by checking in-line reducer.
	Float valve is not seating properly.	Check for particles in valve. Replace float valve.
	Spray bar valve adjustment.	Close down adjustment valve to reduce excess water flow.

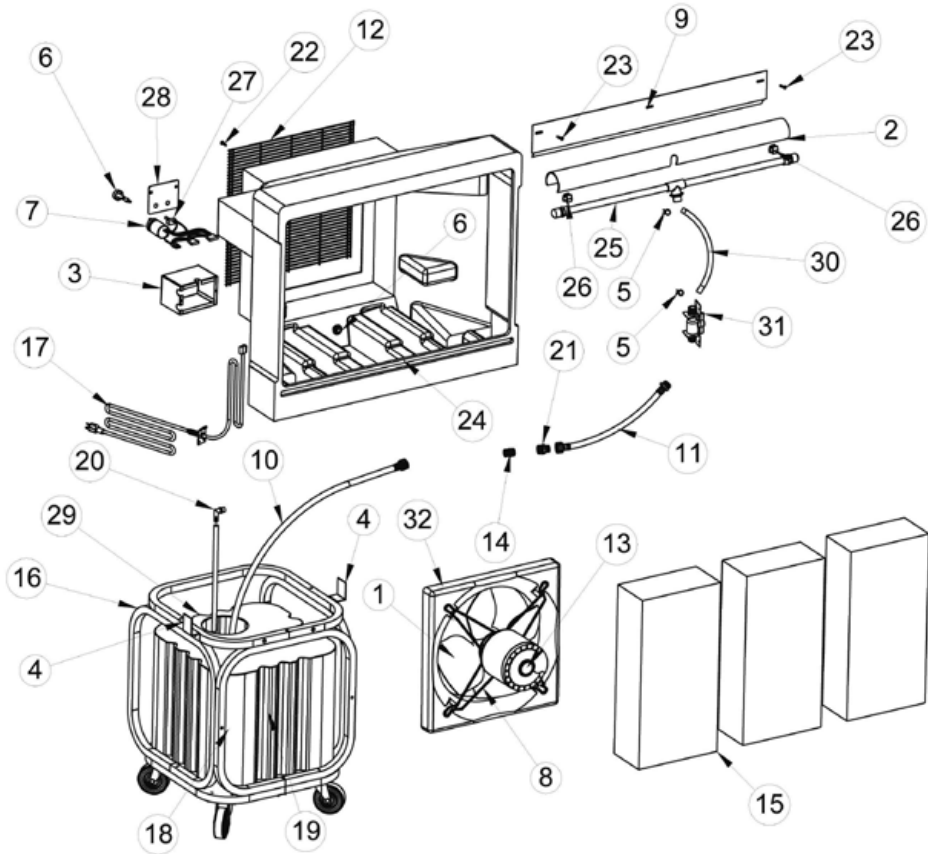
### PLUMBING ASSEMBLY

PROBLEM	CHECK	SOLUTION
Water spitting from the unit.	Cracked riser assembly. Spray Bar Adjustment valve.	Replace riser assembly.
Water leaking from Drain Valve.	Washer worn.	Replace washer.
	Stem worn.	Replace Drain Valve.
Water leaking from Spray Bar Valve.	Washer worn.	Replace washer.
	Stem worn.	Replace Spray Bar Valve.

## PAC2K163SFC ORG. SN# 76229 & SUBSEQUENT New 04/08/04



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BONNET-03	SPRAY BAR BONNET	17	PLATE-REV-SPD	3.2,1.PSC MOTOR SWITCH PLATE
2	BOX-UL-01	3 SPD ELECTRICAL BOX	18	PUMP-0140-1	1/40 HP PUMP
3	BRACKET-01	STABILIZER BRACKET	19	PUMP-ACC-14	PUMP BRACKET FOR 1/40HP PUMP
4	CTRL-3SPD-01	3 SPEED SWITCH SET	20	PVC-ADP.75-03	3/4" 90 DEG. MALE TO BARB ADAPTER
5	DRUM-ACC-01	3/4" SPIN FITTING	21	PVC-ADP-01	3/4 X 1/2 REDUCING ADAPTER
6	FAN-ASSM-04	FAN BLADE	22	S-006	#12 X 1 1/4" TEK SCREW
7	FLAP-16-01	FRONT FLAP FOR 16"	23	S-009	10-24 X 3/4" TRUSS HEAD SCREW
8	HOSE-02	3/4" DRAIN HOSE 24" LONG	24	SPRAY-07	SPRAY BAR FOR 16" PAC
9	HOSE-F50	1/2" X 50" HOSE TO TANK PUMP UNIT	25	SWITCH-ROT-02	3 SPEED ROTOR SWITCH
10	HOSE-FF	1/2" X 24" F/F HOSE INLET TO ADJ. VALVE	26	SWITCH-TOG-03	METAL TOGGLE SWITCH FOR 16" PAC
11	MESH-PAC-05	FAN SCREEN	27	TANK-16-01	22 GALLON TANK
12	MOTOR-012-04	1/2 HP 3 SPD PSC MOTOR	28	TUBE-01	1/2" CLEAR PLASTIC TUBE (PER FOOT)
13	PAC-ACC-30	16" PAC UNIT STAND	29	VALVE-05	1/2" BALL VALVE
14	PAC-PLB-01	BRASS INLET FITTING	30	VENT16-INJ-01	INJECTION MOLDED VENTURI
15	PAD6024G	REPLACEMENT PAD FOR 16" (3 PER UNIT)	31	VENTUR-MNT-01	N'S HEAVY-DUTY MOTOR MOUNT FRAME
16	PKGTAIL-12	12' ELECTRICAL CORD			



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BLADE-ASSM-06	16" VOSTERMAN FAN BLADE ASSEMBLY	17	POWERCORD	POWERCORD ASSEMBLY
2	BONNET-03	SPRAY BAR BONNET	18	PUMP-0140-1	1/40 HP PUMP FOR FILLER CART TANK
3	BOX-UL-01	3 SPD ELECTRICAL BOX	19	PUMP-ACC-14	PUMP BRACKET FOR 1/40HP PUMP
4	BRACKET-01	STABILIZER BRACKET	20	PVC-ADP75-03	3/4" 90 DEG. MALE TO BARB ADAPTER
5	CLAMP-01	1/2" CLAMP FOR PLASTIC TUBE	21	PVC-ADP-01	3/4 X 1/2 REDUCING ADAPTER
6	CTRL-KNOB-01	LONG EXTENDED KNOB FOR VAR/SPD	22	S-006	#12 X 1 1/4" TEK SCREW
7	CTRL-VS-01	VAR SPD CONTROL SWITCH ASSEMBLY	23	S-009	10-24 X 3/4" TRUSS HEAD SCREW
8	FAN16HP-MNT-01	16 PAC MOTOR SUPPORT ARMS	24	SPLASH-GUARD	SPLASH GUARD FOR 16" PAC ONLY
9	FLAP-16-01	FRONT FLAP FOR 16"	25	SPRAY-07	SPRAY BAR FOR 16" PAC
10	HOSE-F50	1/2" X 50" HOSE TO TANK PUMP UNIT	26	SPRAY-ACC-04	CLAMP FASTENER FOR SPRAY BAR
11	HOSE-FF	1/2" X 24" FF HOSE INLET TO ADJ. VALVE	27	SWITCH-TOG-03	METAL TOGGLE SWITCH FOR 16" PAC
12	MESH-PAC-05	FAN SCREEN	28	SWITCH-PL-VARSPD	VAR SPEED MOTOR SWITCH PLATE
13	MOTOR-013-04	1/3 HP VOSTERMAN MOTOR	29	TANK-16-01	22 GALLON TANK
14	PAC-PLB-01	BRASS INLET FITTING	30	TUBE-01	1/2" CLEAR PLASTIC TUBE (PER FOOT)
15	PAD8024/G	REPLACEMENT PAD FOR 16" (3 PER UNIT)	31	VALVE-05	1/2" BALL VALVE
16	PAC-ACC-30	16" PAC UNIT STAND	32	VENT16-INJ-01	INJECTION MOLDED VENTURI

**SPRAY BAR ASSEMBLY (ALL MODELS)**

PROBLEM	CHECK	SOLUTION
Too many dry streaks in the pads.	Holes in spray bar blocked by foreign material.	Remove and clean spray bar.
		Clean individual holes.
Water spitting from the unit.	Hose connection loose.	Tighten hose.
		Replace hose and washer.
		Reseat spray bar end caps
Excess water in air coming from the fan.	Pad Installation	Pads must be installed according to air flow direction label on the pad.

**SUBMERSIBLE PUMPS PROBLEM CHECK SOLUTION**

PROBLEM	CHECK	SOLUTION
Pump will not run when switch is turned on.	Power cord, switches, circuit breaker, switch box, connection, etc.	Reconnect power, reset breaker or reconnect in switch box.
	Air lock in hose.	Disconnect hose at base of pump, run pump to release air, then reconnect.
Pump hums when switch is turned on, but does not pump water.	Inlet filter clogged.	Clean filter.
	Pump motor locked.	Replace pump.
	Other items on circuit.	Remove other items.
Breaker trips or fuse blows when switch is turned on.	Wiring short in line between pump and switch box. Check and/or replace wiring.	
	Pump cycling on and off periodically	Sump tank is empty.
	Spray bar valve is closed.	Open valve.
Pump will not run and power is available and pump is functional.	Switch making closure contact.	Check continuity/ Replace switch.

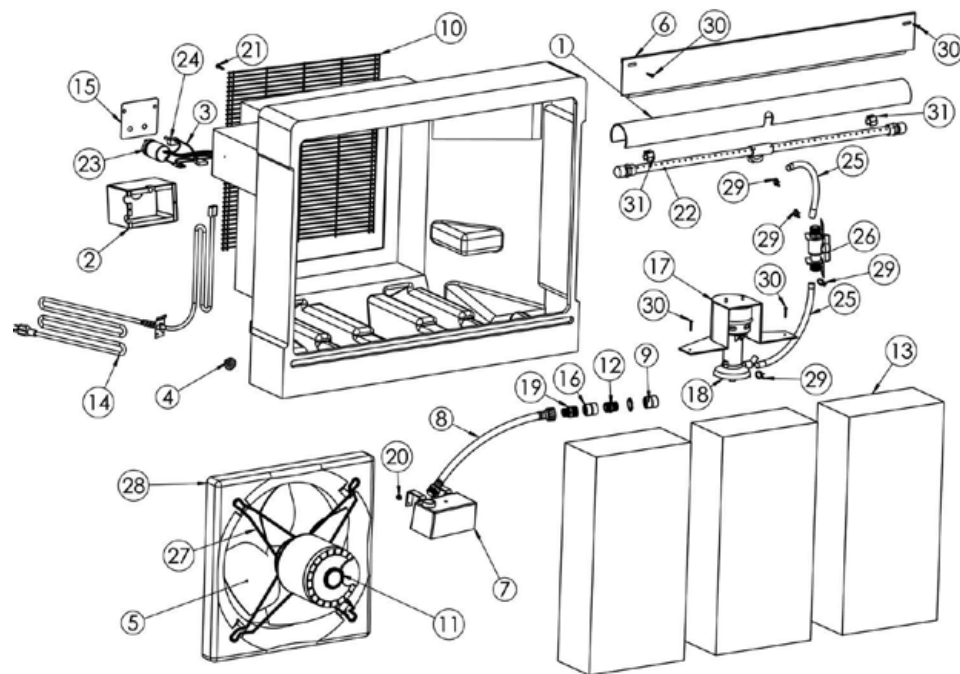
## BRONZE PUMP (PAC2K36EP or PAC2K48EP)

PROBLEM	CHECK	SOLUTION
Pump motor will not run when switch is turned on.	Power cord, switches, circuit breaker, etc.	Reconnect power, reset breaker.
Pump motor hums when switch is turned on, but does not pump water.	Object jammed into impeller blade.	Remove object. Prime pump.
	Air Locked. Pump/Motor locked.	Replace pump/motor.
Pump makes loud noise while running	Pump bearings.	Replace pump.
	Object in impeller housing.	Clear object.
Breaker trips or fuse blows when switch is turned on.	Pump motor locked.	Replace pump/motor.
Pump will not run and power is available and pump is functional	Switch making closure contact.	Replace switch.
Pump motor running but pump is not turning.	Set screws on coupling.	Tighten set-screw / Replace coupling.

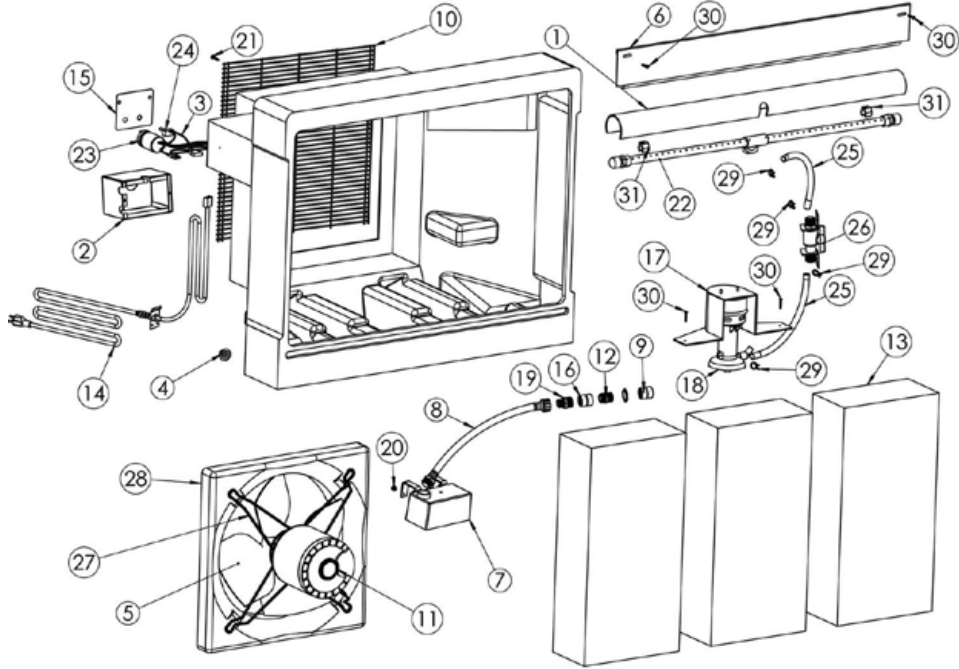
## SHAFT TYPE PUMP (16" models)

PROBLEM	CHECK	SOLUTION
Pump motor will not run when switch is turned on.	Power cord, switches, circuit breaker, switch box, connections, etc.	Reconnect power cord, reset breaker, or reconnect to switch box.
Pump motor hums when switch is turned on, but does not pump water.	Object jammed into impeller blade.	Remove object.
	Air Locked.	Prime pump.
	Check disc that covers impeller	Attach disc securely
Pump makes loud noise while running.	Pump bearings.	Replace pump.
	Object in impeller housing.	Clear object.
Breaker trips or fuse blows when switch is turned on.	Pump motor locked.	Replace pump.
Pump won't run and power is available and pump is functional.	Switch making closure contact.	Replace switch.

## PAC2K163SHD ORG. SN# 75964 SUBSEQUENT revised 04/20/04



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BONNET-03	SPRAY BAR BONNET	17	PUMP BRACKET	PUMP COVER FOR 16" PAC
2	BOX-UL-01	3 SPD ELECTRICAL BOX	18	PUMP-0150-1	PUMP 1/70HP W/NETTING
3	CTRL-3SPD-01	3 SPEED SWITCH SET	19	PVC-ADP-01	3/4 X 1/2 ADAPTER
4	DRAIN-PLUG-01	DRAIN PLUG 16 PAC	20	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
5	FAN-ASSM-04	FAN BLADE	21	S-006	#12 X 1 1/4" TEK SCREW
6	FLAP-16-01	FRONT FLAP FOR 16"	22	SPRAY-07	SPRAY BAR FOR 16" PAC
7	FLOAT-02	FLOAT VALVE	23	SWITCH-ROT-02	3 SPEED ROTOR SWITCH
8	HOSE-FM18	1/2" X 18" F/M HOSE	24	SWITCH-TOG-03	TOGGLE SWITCH FOR 36" PAC
9	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL	25	TUBE-01	1/2" PLASTIC TUBE (PER FOOT)
10	MESH-PAC-05	FAN SCREEN	26	VALVE-05	1/2" BALL VALVE
11	MOTOR-012-04	16" 3 SPD PSC MOTOR	27	VENTURI-MNT-01	N/S HD MOTOR MOUNT FRAME
12	PAC-PLB-01	BRASS INLET FITTING	28	VENT16-INJ-01	INJECTION MOLDED VENTURI
13	PAD6024/G	PAD FOR 16" UNIT (3 per unit)	29	CLAMP-01	1/2" CLAMP FOR PLASTIC TUBE
14	PGTAIL-12	12" ELECTRIC CORD	30	S-009	10-24 x 3/4" TRUSS HEAD SCREW
15	PLATE-REV-SPD	321 PSC MOTOR SWITCH PLATE	31	SPRAY-ACC-04	CLAMP FASTENER 1029
16	PRES-REG-01	WATER PRESSURE REGULATOR			



ITEM#	PART #	DESCRIPTION	ITEM#	PART #	DESCRIPTION
1	BONNET-03	SPRAY BAR BONNET	17	PUMP-BRACKET	PUMP COVER FOR 16" PAC
2	BOX-UL-01	3 SPD ELECTRICAL BOX	18	PUMP-0150-1	PUMP 1/70HP W/NETTING
3	CTRL-3SPD-01	3 SPEED SWITCH SET	19	PVC-ADP-01	3/4 X 1/2 ADAPTER
4	DRAIN-PLUG-01	DRAIN PLUG 16 PAC	20	S-004	1/4-20 X 1/2" BOLT FOR FLOAT
5	FAN-ASSM-04	FAN ASSEMBLY	21	S-006	#12 X 1 1/4" TEK SCREW
6	FLAP-16-01	FRONT FLAP FOR 16"	22	SPRAY-07	SPRAY BAR FOR 16" PAC
7	FLOAT-02	FLOAT VALVE	23	SWITCH-ROT-02	3 SPEED ROTOR SWITCH
8	HOSE-FM18	1/2" X 18" F/M HOSE	24	SWITCH-TOG-03	TOGGLE SWITCH FOR 36" PAC
9	HOSE-FTG-05	FEM/FEM 3/4" BRASS SWIVEL	25	TUBE-01	1/2" PLASTIC TUBE (PER FOOT)
10	MESH-PAC-05	FAN SCREEN	26	VALVE-05	1/2" BALL VALVE
11	MOTOR-014-02	16" 3 SPD REPLACEMENT MOTOR	27	VENTURI-MNT-01	N/S HD MOTOR MOUNT FRAME
12	PAC-PLB-01	BRASS INLET FITTING	28	VENT16-INJ-01	INJECTION MOLDED VENTURI
13	PAD6024G	PAD FOR 16" UNIT (3 per unit)	29	CLAMP-01	1/2" CLAMP FOR PLASTIC TUBE
14	PGTAIL-12	12' ELECTRIC CORD	30	S-009	10-24 x 3/4" TRUSS HEAD SCREW
15	PLATE-3SPD-98	SWITCH COVER PLATE (3 SPD)	31	SPRAY-ACC-04	CLAMP FASTENER 1029
16	PRES-REG-01	WATER PRESSURE REGULATOR			

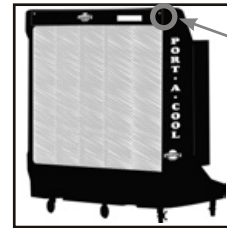
## B. Repair and Replacement Procedures

Ensure that all water is removed from the PORT-A-COOL® unit and all power is disconnected. Remove all impediments to access the component you are checking or replacing.

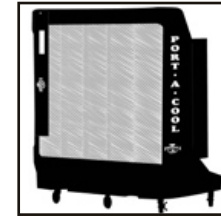
### REPLACING THE COOLING MEDIA (Pads) (All Models)

**Caution - Disconnect power before performing this operation!!**

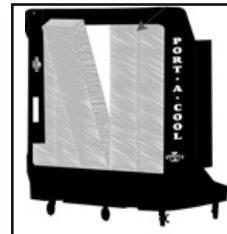
The flap must be removed to allow access to the cooling pads. Start with the center pad, which should be tilted out from the top and lifted out of the drain trough. The two pads to either side of the center pad may then be removed in the same manner. Should you desire to remove the two outside pads, they must first be pulled sideways toward the center of the PORT-A-COOL® unit until they clear the side retainer. They may then be removed in the same manner as the other pads.



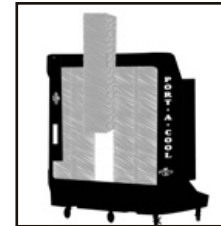
Locate the set screw in the rear of the unit on the upper right side



Remove set screw and lower front flap to vertical position (see illustration)



Once the front flap is moved, grasp the right pad and tilt out at a 90 degree angle (see illustration).



Pull the pad up to remove from unit. Repeat for other pads.

## FAN MOTOR REPLACEMENT

### Belt Drive Models (PAC2K361S, PAC2K363S, PAC2K482S)

1) DISCONNECT POWER and remove the pads as shown on page 15.

2) Motor is located in center of unit. Switchbox is located in upper left.

**(Figure 1)** Locate motor harness wire secured to fan bracket assembly using plastic ties. Cut and remove plastic wire ties. DO NOT CUT ELECTRICAL HARNESS WIRES.

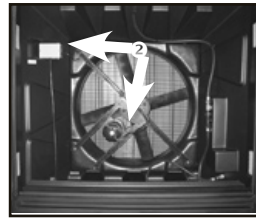
3.) Remove switch box cover. **(Figure 2)** Unplug motor wire harness connector. Push rubber grommet on motor wire harness through switch box opening and remove motor harness from switch box.

4) Loosen four (4) bolts that secure the motor mounting plate. This will allow the motor plate to move up or down. Loosen and remove the belt from the motor pulley. **(Figure 3)**

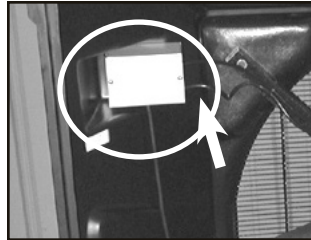
5) On front of motor mount, remove belt pulley by loosening set-screw. Remove four (4) lock nuts securing motor to mount. Remove motor by sliding straight back out of mounting holes.

6) Install new motor by reversing steps above. (A.) Install new motor into motor mount and install four (4) lock nuts to secure motor to mount, but do not tighten. (B) Install motor pulley on motor shaft and align with fan blade hub pulley. Install fan belt on fan blade pulley by sliding motor plate away from the fan hub. Visually align the motor pulley and fan pulley by using the belt as a reference. (C) Adjust the motor pulley in or out to align. Tighten the motor pulley setscrew. (D) Apply pressure on the motor to further tighten the belt being careful not to over tighten. (About 15 pounds of pressure is sufficient). Complete tightening of the four (4) motor plate bolts. (E) Thread terminal end of motor wire through switch box opening and plug connector into switch connector. PROPERLY RESEAT RUBBER GROMMET SEAL ON HARNESS AT OPENING IN SWITCH BOX TO KEEP WATER OUT OF CONTROL BOX. FAILURE TO DO SO COULD CAUSE ELECTRICAL SHOCK. (E) Replace switch box cover. (F) Secure motor wire harness to fan bracket assembly using new wire ties. (G) Replace pads by installing from outside in toward center replacing center pad first.

7) Reconnect the unit power and test motor.



**Figure 1**



**Figure 2**



**Figure 3**

## FAN MOTOR REPLACEMENT

### Direct Drive Models (PAC2K36HPVS, PAC2K24HPVS, PAC2K163S, PAC2K163SHD, PAC2K163SFC, PAC2K16HPVS, PAC2K16HPVSFC)

1) DISCONNECT POWER and remove pads as shown on page 15.

2) Motor is located in center of unit. Switch box is located in upper left. Locate motor harness wire

**(Figure 1)** secured to fan bracket assembly using five plastic wire ties. Cut and remove plastic wire ties. DO NOT CUT ELECTRICAL WIRES.

3) Remove switch box cover. Unplug motor harness wire connector. Push rubber grommet on motor wire harness through switch box opening and remove motor harness wire from switch box. Disconnect motor harness at the quick release connector. **(Figure 2 NEXT PAGE)**

4) Remove the screen from the front of the unit to access the fan side of the unit.

5) Loosen the nut from the threaded motor shaft and take the fan blade off. **(Figure 3 NEXT PAGE)**

6) Locate the 8 bolts (2 on each arm) holding the motor in place. (NOTE: the position of the motor on the mounting arms. Make sure to mount it in the correct railings of the motor housing and at the correct distance from front or back on all four arms to ensure stability and alignment) **(Figure 4 NEXT PAGE)**



**Figure 1**

## APPENDIX A

### Port-A-Cool® unit TEMPERATURE OUTPUT CHARACTERISTICS 70% TO 75% RELATIVE HUMIDITY

70% RH					
DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
21.1	70	10	7.2	17.2	63
23.9	75	10	7.2	20.0	68
26.7	80	11	7.9	22.2	72
29.4	85	11	7.9	25.0	77
32.2	90	12	8.6	27.2	81
35.0	95	12	8.6	30.0	86

75% RH					
DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
18.3	65	8	5.8	15.0	59
21.1	70	8	5.8	17.8	64
23.9	75	9	6.5	20.6	69
26.7	80	9	6.5	23.3	74
29.4	85	9	6.5	26.1	79
32.2	90	9	6.5	28.9	84

WET BULB TEMPERATURE	Wet Bulb Temperature @ Current Humidity Level
DRY BULB TEMPERATURE	Current Ambient Air Temperature
TEMPERATURE DIFFERENCE	Dry Bulb Temp Minus Wet Bulb Temp
TEMPERATURE DROP	Temperature Difference Multiplied by 72%
OUTPUT TEMPERATURE	Dry Bulb Temperature Minus Temperature Drop



**Port-A-Cool® unit**  
**TEMPERATURE OUTPUT CHARACTERISTICS**  
**50% TO 65% RELATIVE HUMIDITY**

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
23.9	75	22	15.8	15.0	59
26.7	80	20	14.4	18.9	66
29.4	85	22	15.8	20.6	69
32.2	90	21	15.1	23.9	75
35.0	95	22	15.8	26.1	79
37.8	100	22	15.8	28.9	84

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
23.9	75	17	12.2	17.2	63
26.7	80	19	13.7	18.9	66
29.4	85	18	13.0	22.2	72
32.2	90	19	13.7	24.4	76
35.0	95	19	13.7	27.2	81
37.8	100	19	13.7	30.0	86

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
23.9	75	15	10.8	17.8	64
26.7	80	15	10.8	20.6	69
29.4	85	15	10.8	23.3	74
32.2	90	15	10.8	26.1	79
35.0	95	17	12.2	28.3	83
37.8	100	16	11.5	31.1	88

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
23.9	75	13	9.4	18.9	66
26.7	80	13	9.4	21.7	71
29.4	85	13	9.4	24.4	76
32.2	90	13	9.4	27.2	81
35.0	95	14	10.1	29.4	85
37.8	100	13	9.4	32.8	91

WET BULB TEMPERATURE    Wet Bulb Temperature @ Current Humidity Level  
 DRY BULB TEMPERATURE    Current Ambient Air Temperature  
 TEMPERATURE DIFFERENCE    Dry Bulb Temp Minus Wet Bulb Temp  
 TEMPERATURE DROP    Temperature Difference Multiplied by 72%  
 OUTPUT TEMPERATURE    Dry Bulb Temperature Minus Temperature Drop

A-3

7) Loosen these bolts just enough to slide the old motor out; don't remove the bolts completely. Replace with new motor.

8) Thread terminal end of motor wire through switch box wire opening and plug five-pin connector into switch connector. **IMPORTANT:** Ensure that rubber grommet seal on harness is properly seated to keep water out of control box.

9) Replace switch box cover.

10) Secure motor wire to fan bracket assembly using new wire ties.

11) Replace pads by installing from outside toward center replacing center pad last.

12) Replace blade and screen to front of unit.



Figure 2



Figure 3

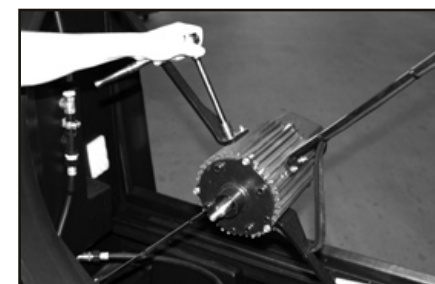


Figure 4

**PUMP REPLACEMENT**

MODELS PAC2K482S, PAC2K361S, PAC2K363S, PAC2K36HPVS, PAC2K24HPVS

1) DISCONNECT POWER and remove pads as shown on page 15.  
 2) Pump is in lower right of unit. Control box is in upper left. Locate pump wire (1) secured to fan bracket assembly using plastic wire ties. Cut and remove plastic ties. **DO NOT CUT ELECTRICAL WIRES. (Figure 1)**

3) Remove screws from control box cover. Unplug pump wire connector. Push rubber grommet on pump wire through control box opening and remove pump harness wire from control box. **(Figure 2)**

4) Locate pump in lower right corner of the unit. Remove hose from pump by unscrewing hose connection. Remove two screws holding pump bracket to the unit housing. Remove entire pump assembly from the unit. **(Figure 3)**

5) INSTALL NEW PUMP BY REVERSING ABOVE PROCEDURES. (1.) Install new pump on pump bracket and attach bracket to housing. Replace pump hose. (2.) Thread terminal end of pump wire through control switch box and plug pump terminal into switch.

6) **IMPORTANT:** Ensure that rubber grommet seal is properly seated to keep water out of switch box.

7) Replace switch box cover. Secure pump wire to fan bracket assembly using new bundle ties.

8) Replace pads by installing pads from outside toward center replacing center pad last. Replace pad flap with screws.

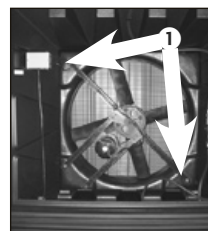


Figure 1

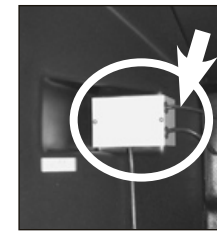


Figure 2

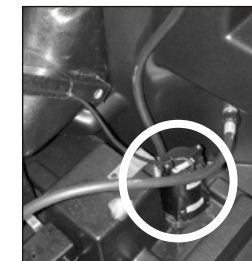
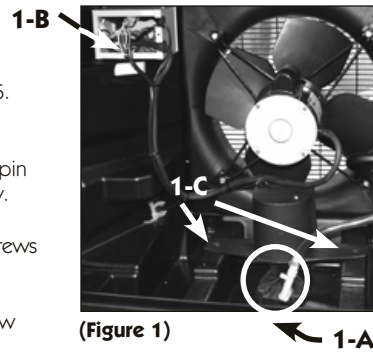


Figure 3

## PUMP REPLACEMENT

MODELS PAC2K163S, PAC2K163SHD, PAC2K16HPVS

- 1) DISCONNECT POWER and remove pads as shown on page 15.
- 2) Remove output tubing from insert fitting on base of pump.  
**(Figure 1-A)**
- 3) Remove the switch box wiring cover and disconnect the 4-pin quick release connector from the pump switch assembly.  
**(Figure 1-B)**
- 4) Remove the pump from the sump tank by removing two screws that hold the pump cover and pump in place.  
**(Figure 1-C)**
- 5) Remove the pump cover from old pump install onto the new pump.
- 6) Reverse the above procedures to install the new pump.
- 7) Replace the cooling pads, positioning as shown on the air flow label.
- 8) Reconnect the unit power and test pump.



**(Figure 1)**

## PUMP REPLACEMENT

MODEL PAC2K163SFC, PAC2K16HPVSFC

- 1) Disconnect electrical power to unit and remove pads per page 15.
- 2) Remove the cover plate on the electrical box to disconnect the motor quick connect and the zip ties holding it together.  
**(Figure 1)**
- 3) Remove two screws that hold the strain relief bracket in order to take the pump cord out of the unit.  
**(Figure 2)**
- 4) Unscrew the 6" drain pipe located under the fan housing. Slide the tank outside the caddy base to access the pump bracket.
- 7) Remove the two screws that hold the bracket to the tank. Remove the bracket and hose from the pump by loosening the fastening screws and hose clamp.
- 8) Install new pump by reversing above steps.



**(Figure 1)**



**(Figure 2)**

## APPENDIX A

### Port-A-Cool® unit TEMPERATURE OUTPUT CHARACTERISTICS 30% TO 45% RELATIVE HUMIDITY

30% RH		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
26.7	80	34	24.5	13.3	56
29.4	85	35	25.2	15.6	60
32.2	90	35	25.2	18.3	65
35.0	95	36	25.9	20.6	69
37.8	100	37	26.6	22.8	73
40.6	105	38	27.4	25.6	78

35% RH		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
23.9	75	30	21.6	11.7	53
26.7	80	31	22.3	14.4	58
29.4	85	30	21.6	17.2	63
32.2	90	32	23.0	19.4	67
35.0	95	32	23.0	22.2	72
37.8	100	33	23.8	24.4	76

40% RH		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
29.4	85	27	19.4	18.9	66
32.2	90	28	20.2	21.1	70
35.0	95	29	20.9	23.3	74
37.8	100	27	19.4	27.2	81
40.6	105	29	20.9	28.9	84
43.3	110	28	20.2	32.2	90

45% RH		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
29.4	85	24	17.3	20.0	68
32.2	90	25	18.0	22.2	72
35.0	95	25	18.0	25.0	77
37.8	100	25	18.0	27.8	82
40.6	105	25	18.0	30.6	87
43.3	110	25	18.0	33.3	92

WET BULB TEMPERATURE Wet Bulb Temperature @ Current Humidity Level  
 DRY BULB TEMPERATURE Current Ambient Air Temperature  
 TEMPERATURE DIFFERENCE Dry Bulb Temp Minus Wet Bulb Temp  
 TEMPERATURE DROP Temperature Difference Multiplied by 72%  
 OUTPUT TEMPERATURE Dry Bulb Temperature Minus Temperature Drop

**Port-A-Cool® unit**  
**TEMPERATURE OUTPUT CHARACTERISTICS**  
**10% TO 25% RELATIVE HUMIDITY**

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
32.2	90	65	46.8	6.1	43
35.0	95	65	46.8	8.9	48
37.8	100	66	47.5	11.1	52
40.6	105	67	48.2	13.9	57
43.3	110	68	49.0	16.1	61
46.1	115	67	48.2	19.4	67

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
32.2	90	55	39.6	10.0	50
35.0	95	56	40.3	12.8	55
37.8	100	57	41.0	15.0	59
40.6	105	57	41.0	17.8	64
43.3	110	58	41.8	20.0	68
46.1	115	59	42.5	22.8	73

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
32.2	90	47	33.8	13.3	56
35.0	95	47	33.8	16.1	61
37.8	100	48	34.6	18.3	65
40.6	105	49	35.3	21.1	70
43.3	110	49	35.3	23.9	75
46.1	115	51	36.7	25.6	78

DRY BULB		TEMP. °F		OUTPUT TEMP.	
Temp. °C	Temp. °F	Difference	Drop	°C	°F
32.2	90	41	29.5	15.6	60
35.0	95	43	31.0	17.8	64
37.8	100	44	31.7	20.0	68
40.6	105	44	31.7	22.8	73
43.3	110	44	31.7	25.6	78
46.1	115	45	32.4	28.3	83

WET BULB TEMPERATURE    Wet Bulb Temperature @ Current Humidity Level  
 DRY BULB TEMPERATURE    Current Ambient Air Temperature  
 TEMPERATURE DIFFERENCE    Dry Bulb Temp Minus Wet Bulb Temp  
 TEMPERATURE DROP    Temperature Difference Multiplied by 72%  
 OUTPUT TEMPERATURE    Dry Bulb Temperature Minus Temperature Drop

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**C. TECHNICAL SUPPORT**

Technical support and service is available directly from your distributor or call PORT-A-COOL® Technical Support Hot Line at 888-266-5243 (888-COOL-AID) for the distributor nearest you. You may also contact the Support Hot Line for consultation on parts replacement.

Please have serial number and model number of unit available.

**VI. REPLACEMENT PARTS**

**A. Returned Merchandise Authorization (RMA) Procedures**

All Port-A-Cool® units, parts, or materials being returned to General Shelters for warranty replacement or repair require an RMA (Return Merchandise Authorization) number.

There are two methods for replacing warranty parts:

1. The distributor can purchase the part with an RMA number and will only be charged for the cost of the part, not for the shipping. When the defective part is returned freight paid, the distributor's account will be credited for the cost of the part.
2. The customer / distributor can call Tech Support to get an RMA number to send the defective part back to General Shelters. Once the part is received by General Shelters, a replacement part will be sent at no charge.

Information needed to get an RMA number:

1. The UNIT serial number.
2. The UNIT model number (ex. PAC2K363S)
3. The part number or description of the part to be replaced.

Only major component parts need an RMA number, i.e. fans, motors, pumps, and some plumbing parts. For replacement of small parts, the serial and model numbers are still required, but the parts do not need to be returned to Port-A-Cool, LLC.

For warranty replacement parts call PORT-A-COOL® Technical Support at 1-888-266-5243. FAX: 936-598-1431.

Shipping Address  
 Port-A-Cool, LLC.  
 721 FM 2468 at Henrietta Road  
 Center, Texas 75935

Mailing Address:  
 Port-A-Cool, LLC.  
 P.O. Box 2167  
 Center, Texas 75935

**B. Port-A-Cool® Unit Limited Warranty**

For one year from date of installation, Port-A-Cool, LLC. warrants any original component part or parts of the Port-A-Cool® evaporative unit found, upon examination by factory-authorized personnel, to be defective in material or workmanship, excepting, however, that the high-performance, fan motor utilized as a component of the Port-A-Cool® HP portable evaporative cooling unit shall be warranted by Port-A-Cool, LLC for a period of three years from the date of installation. All transportation charges on parts submitted for replacement or repair under this warranty must be borne by the purchaser. If said equipment develops such defects within this period, it will be repaired or replaced at our option. For breach of any implied or written warranty on this product, Port-A-Cool, LLC., shall not be liable for any incidental or consequential damages. This warranty is declared void if the equipment is found to have been misused, abused or tampered with by unauthorized personnel.

Due to warranty limits placed on our products by the original manufacturers, our warranty is limited on manufactured units and their original component parts as well as replacement parts to a total of one (1) year after the date of installation, with the above noted 3-year warranty relating to the high-performance fan motor utilized as a component of the Port-A-Cool® HP portable evaporative cooling unit being the only exception.



## FREQUENTLY ASKED QUESTIONS

### Q. IS THERE ANY ASSEMBLY REQUIRED?

A: No. Port-A-Cool® units are ready to use right out of the box.

### Q. HOW DO I PREPARE MY PORT-A-COOL® UNIT FOR STORAGE?

A: Simply drain the unit, dry out the pads and place the unit, preferably covered, in a dry place for the winter season. For more details, please call our Tech Support Hotline at 1-888-COOL-AID.

### Q. I JUST HOOKED UP MY PORT-A-COOL® UNIT FOR THE FIRST TIME AND THERE'S AN UNPLEASANT ODOR! WHAT'S WRONG?

A: A new unit will go through a break-in period during which it may emit some odor. The pads, located in the back of your Port-A-Cool® unit, have never been wet. The resin in the pads will emit an odor the first time you wet them that lasts approximately one to three weeks. Keep the unit in an open area until the odor goes away or put a capful of laundry softener directly in the tank in the bottom of your unit. After approximately two weeks of operation, the odor should disappear. If the unit is not a new unit, algae or bacteria growth in the unit from improper maintenance will cause odors. Please refer to your Owner's Manual for proper cleaning and maintenance.

### Q. MY PORT-A-COOL® UNIT ISN'T PUTTING OUT ANY COOL AIR.

A: First, check the back of your unit to see if the pads are damp. Adjust the water flow. For the evaporation process to occur, the pads must be damp before you turn on the fan. Second, make sure there is water in the tank. It should be allowed to fill before you turn the pump on. Thirdly, make sure the water source and electricity source are connected and working. Fourth, if none of these options fix the problem, call our Tech Support Hotline at 1-888-COOL-AID for additional assistance.

### Q. WHAT IS THE BEST ENVIRONMENT FOR THE PORT-A-COOL® UNIT TO PRODUCE THE MOST COOL AIR?

A: For optimum performance, the temperature should be 85 degrees F or higher and the relative humidity should be below 75%. However, Port-A-Cool® units will reduce the temperature in almost any environment, making it more pleasant.

### Q. WHAT IS THE DIFFERENCE BETWEEN EVAPORATIVE COOLING AND MISTING SYSTEMS?

A: Misting units spray a shower of water into the air that will collect on a person, getting the person or floor wet. The Port-A-Cool® unit uses the evaporative process to produce cooler air.

## FREQUENTLY ASKED QUESTIONS (continued)

### Q. HOW DO I OIL THE FAN MOTOR?

A: The Emerson Motor Installation and Maintenance Information manual states, "Sleeve bearing motors require periodic re-oiling. Re-oil continuous duty units once a year, intermittent duty units every two years, and occasional duty units every five years with 30 to 35 drops of SAE no. 20 non-detergent or electric motor oil."

### Q. WHERE CAN I BUY REPLACEMENT PARTS?

A: Unit replacement parts may be purchased from any Port-A-Cool® product distributor or directly from Port-A-Cool® Parts/Technical Support department.

### Q. HOW OFTEN DO PADS HAVE TO BE REPLACED?

A: Depending on the quality of maintenance and frequency of use, pads typically last up to five years. However, should you have any questions about the life of the pads for your unit, please call our tech support department for more detailed information about replacing your pads.

### Q. WHAT IS THE AMOUNT OF MOISTURE PRODUCED BY A UNIT?

A: Approximately 2% to 5% increase in humidity is produced depending on the temperature and humidity of the environment. This amount of increase in humidity is not noticeable in a ventilated area where the air produced by the unit is exhausted.

### Q. HOW LONG WILL THE WATER SUPPLY LAST IN THE SUMP TANK?

A: With no direct water source available, the unit will evaporate the water in a filled sump tank within two hours of operation. The evaporation rate will vary depending on temperature and humidity. A water source for refilling the sump tank is recommended by the manufacturer. Most units have an internal float valve for regulating water flow into the sump.

### Q. SHOULD I USE ICE IN THE SUMP TANK FOR BETTER COOLING?

A: Some of the vapor from the ice water may be picked up and distributed by the fan, but this does not increase evaporation and therefore will not produce significant cooling.

### Q. WHERE ARE THE MODEL AND SERIAL NUMBERS FOUND ON THE UNIT?

A: On the outside of the housing of every unit is a metal plate with a white label with printed bar-codes and other information. Unit model numbers begin with the letters "PAC." Serial numbers are all-digit numbers. Please always provide the unit's serial number and model number when contacting Parts/Technical Support.

### Q. WHAT IF MY QUESTIONS AREN'T ANSWERED HERE?

A: Our Tech Support staff is available 8 a.m. to 5 p.m. Central Time, Monday through Friday at 1-888-COOL-AID or you can e-mail them at support@port-a-cool.com.

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