

SMOKEETER[®] / *Crystal-Aire*[®]

**Electronic Air Cleaner
MODEL SE 10**

OWNER'S MANUAL



UAS[®]
UNITED AIR SPECIALISTS, INC.
a CLARCOR company

To Place an Order Call ACS, Inc. @ (800) 878-5030

MODEL SE 10

SPECIFICATIONS

POWER REQUIREMENTS

115 VAC, 60 Hz,
.9 Amps Max.

POWER CORD

10' 16 ga. with molded
grounded plug

POWER CONSUMPTION

104 Watts (Max.)

AIR HANDLING CAPACITY

90 to 250 CFM

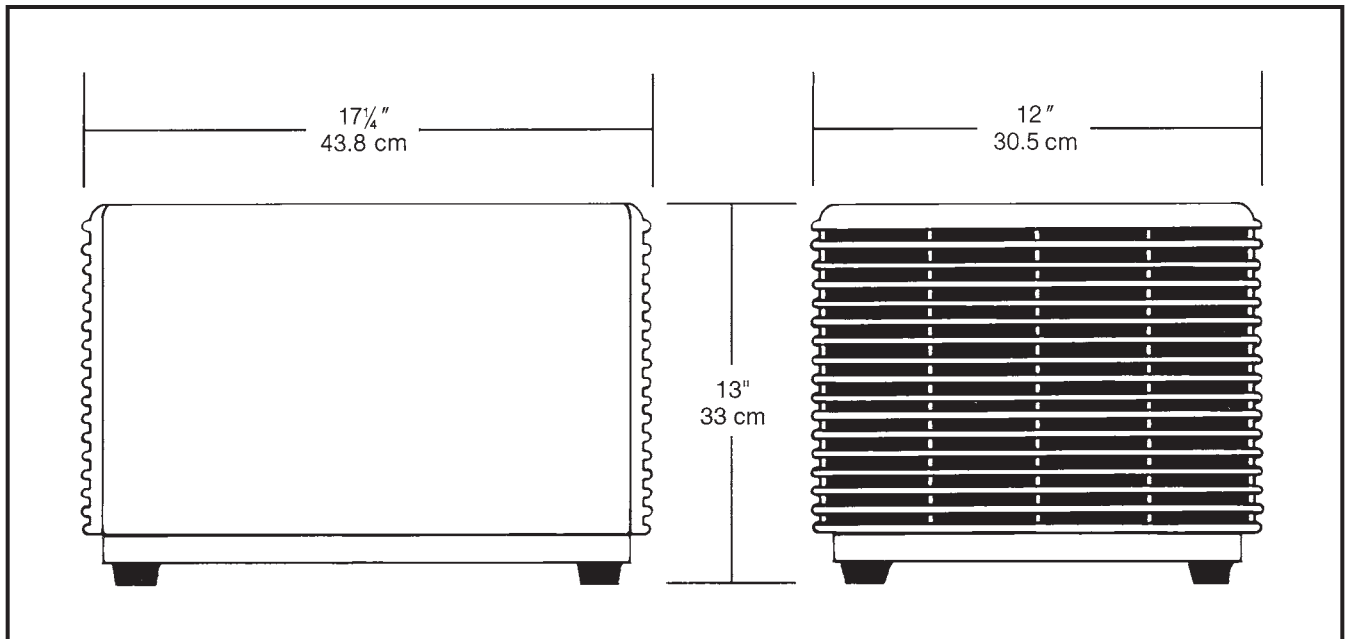
WEIGHT

HANGING27 lbs (10 KG)

SHIPPING.....32 lbs (12 KG)

DIMENSIONS

Height	Width	Length
13" (33 cm)	12" (30.5 cm)	17¼" (43.8 cm)



MODEL SE 10

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IMPORTANT NOTICE

BEFORE OPERATION, PLEASE REMOVE ALL PACKING MATERIAL FROM INSIDE UNIT. THIS CAN INCLUDE MARKED TIE DOWN SCREWS, CARDBOARD, STYROFOAM AND PLASTIC WRAP ON CARBON FILTER. MODELS VARY IN MATERIAL USED.

I. INTRODUCTION

Your new air cleaner is the most advanced product of its type on the market today and will provide a safer, healthier environment. As you begin its operation, we would like to remind you of a few important facts.

First, we appreciate your business, and because we appreciate your business, we have manufactured an air cleaner engineered to rigid specifications, incorporating the latest technological advances. It is built using the best materials available and is subjected to rigorous quality control checks. A warranty backs every air cleaner that leaves our factory.

Second, like any piece of equipment, your air cleaner needs periodic maintenance. Properly cared for, it will operate at peak efficiency for many years to come.

Finally, while we hope you never have any problems, United Air Specialists, Inc. (UAS) is always ready to lend assistance through our factory-trained salespeople. Should you need information or service, contact your local salesperson or the Customer Service Department at United Air Specialists, Inc., 4440 Creek Road, Cincinnati, Ohio 45242, 1-800-252-4647.

II. INSPECTION OF EQUIPMENT

Upon receipt of your SMOKEETER/CRYSTAL-AIRE, check for any shipping damage. A damaged carton indicates that the equipment may have received rough handling during shipping that may have caused internal damage. Notify your delivery carrier and enter a claim if any damage is found.

Before operating unit, remove all packing material including carbon afterfilter, packaging and unicell shipping screws.

III. HOW YOUR SMOKEETER/CRYSTAL-AIRE OPERATES

The air mover draws air through the ionizer. As particles pass through the ionizer section, they are given an intense positive charge. These charged particles are then collected on cell plates. The clean air is redistributed into the room through an outlet diffuser. An activated carbon afterfilter helps control odors in the air.

COMPONENTS MAKE IT WORK (See Figure 1)

1. UNICELL is comprised of the ionizing section and the collecting section. The ionizing section is made of fine tungsten wires supported between metal plates. When high voltage is applied to these parts, a "corona" field is generated, imparting a high voltage charge on particles that pass through it. The collection section is made up of a series of flat metal plates. These plates act like a magnet and attract the charged particles, removing them from the air. The plates are alternately charged positive and ground. The positive plates repel the particles while the ground plates attract them, yielding a very high efficiency.
2. ACTIVATED CARBON AFTERFILTER helps remove odors in the air.
3. POWER PACK is a dual high voltage supply. It supplies 12,000 volts DC to the ionizer and 6,000 volts DC to the collection cell.
4. SOLID-STATE SPEED CONTROL (not shown) allows airflow adjustment.
5. AIR MOVER is a three blade fan designed for quiet operation. The motor features an automatic reset thermal protector.

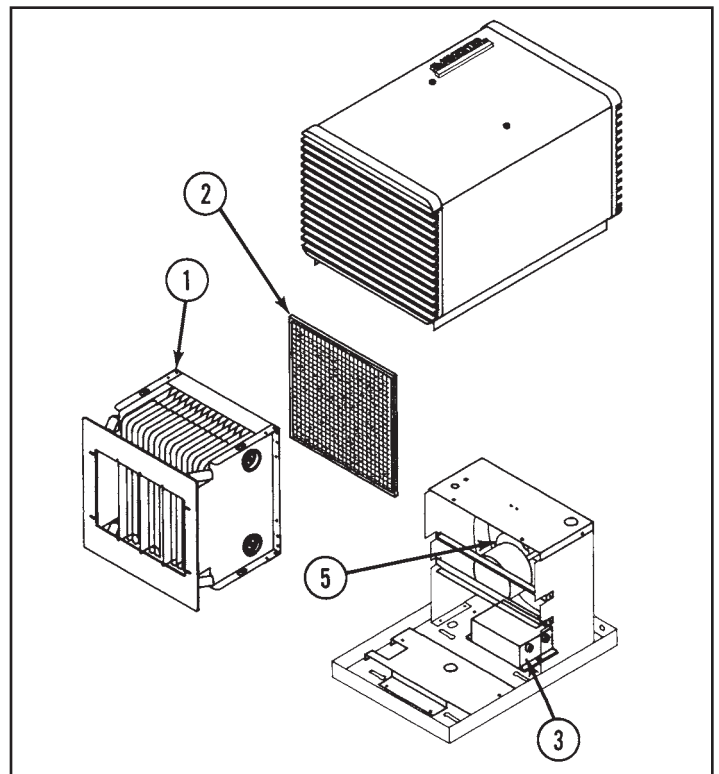


FIGURE 1

IV. INSTALLATION

NOTE: This product has been designed specifically for commercial and residential applications such as offices, conference rooms, cafeteria and living areas. United Air Specialists assumes no responsibility for those applications unlike the aforementioned.

The SMOKEETER/CRYSTAL-AIRE is designed to draw the contaminated air through the unit and exhaust clean air back into the room. The clean air is used to push contaminated air around the room to the inlet of the unit. Directions of air patterns and proper placement of the unit should be established by your local SMOKEETER/CRYSTAL-AIRE distributor or by United Air Specialists, Inc.

The SMOKEETER/CRYSTAL-AIRE can be installed by:

1. Placing on desk, file cabinet or other stable surface.
2. Mounting on a wall.

CAUTION: Power connection — The power cord on this product should be used in connection with a properly-sized and appropriately located 115 VAC grounded outlet receptacle. No alteration of the power cord should be attempted nor should extension cords be used.

To reduce the risk of electric shock, this equipment has a grounding-type plug that has a third (grounding) pin. This plug will only fit into a grounding-type power outlet. If the plug does not fit into the outlet, contact qualified personnel to install the proper outlet. Do not alter the plug in any way.

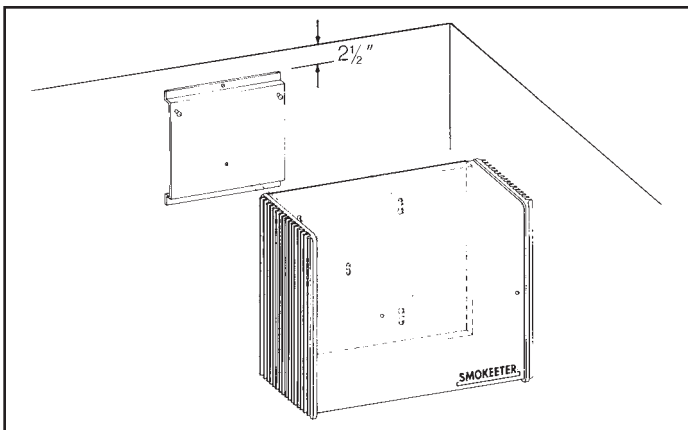


FIGURE 2

WALL MOUNTING OPTION

A wall mounting bracket is provided for mounting the unit on walls.

Securely attach the wall mounting bracket against the wall, allowing 2½" from the ceiling for clearance of the unit (see Figure 2).

WARNING: Use fasteners and anchoring devices that will ensure support of the 27 pound unit.

After the mounting bracket is attached, remove the unicell assembly from the cabinet to facilitate handling and lighten the weight (see Removing Components — page 5).

Slide the keyhole slots in the unit base over the studs on the wall bracket and allow the base to drop into place, resting on the studs. Using the screw provided with the unit, secure the base to the mounting bracket.

The SMOKEETER/CRYSTAL-AIRE should now be tested for secure support.

Reinstall the components and attach the cabinet.

Plug the unit into a grounded 115 volt AC outlet.

REVERSING AIRFLOW

The unit is shipped to you ready for installation in a left-to-right airflow configuration. If a right-to-left airflow is desirable, simply turn unit 180° (unit will be upside down). Remove plastic logo and place upright in same position (logo is now located in upper left).

V. OPERATION

For best results and to assure maximum air quality, your SMOKEETER/CRYSTAL-AIRE should be started before the air becomes contaminated. An indicator lamp on the unit is illuminated during normal operation of both the power pack and the unicell and will dim when the unicell requires servicing. A solid-state speed control switch allows you to adjust the fan speed. If you notice a decrease in cleaning efficiency, increase the fan speed to increase the unit's effectiveness.

FOR YOUR INFORMATION — Each SMOKEETER/CRYSTAL-AIRE has been thoroughly tested prior to shipment from the factory. Even so, there may be some initial arcing of the components at start up. The noise should cease after a few minutes of operation.

VI. CLEANING

CAUTION: Servicing this product for purposes other than routine cleaning of the collection components (unicell) should be performed by trained authorized service personnel. Any effort to exceed this service by non-qualified personnel may lead to bodily injury and/or equipment failure.

This section is defined for cleaning and periodic maintenance. The internal components must be removed prior to cleaning.

CAUTION: The unit should be inspected frequently and dirt removed to prevent excessive accumulation which may result in flashover or fire damage. An electrical interlock is provided for protection — do not defeat its purpose.

HOW TO REMOVE COMPONENTS

1. Turn off the SMOKEETER/CRYSTAL-AIRE.
 - Loosen the two knobs and lift cabinet wrapper. Wait approximately 15 seconds to allow for any residual high voltage to bleed off.
 - For added safety, manually discharge the unicell in the following manner. Place the blade of a common screwdriver (with insulated handle) across the ionizer wire and ionizer fin. Next, place the screwdriver blade between any two cell plates. This will remove any residual charge that may not have bled off. Disconnect high voltage wires (see Figure 3).
2. Remove the carbon afterfilter by sliding from the track.
3. Slide the unicell from the cabinet.

DISCHARGE FROM BOTH CELL
AND IONIZER POINTS TO GROUND

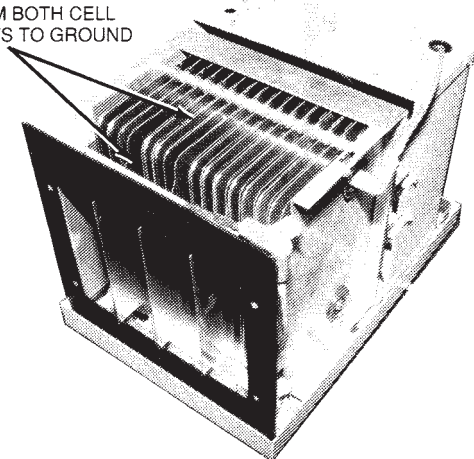


FIGURE 3

CLEANING

Major cleaning is confined to the unicell and the inside cabinet. The unicell and cabinet should be cleaned periodically to assure continued efficiency. Cleaning may be required from once a month to once every four months depending on the air quality.

NOTE: The carbon filter cannot be cleaned and needs to be replaced once every six to 12 months.

1. The unicell can be cleaned by soaking in a hot solution of SMOKEETER/CRYSTAL-AIRE brand detergent for 30-60 minutes. If possible, agitate the solution to aid in dirt removal. If agitation is not possible, soaking time should be increased.

CAUTION: Do not use temperature exceeding 160°F and do not steam clean as this may cause permanent damage to the unicell. If detergent other than SMOKEETER/CRYSTAL-AIRE is used, care must be taken to assure that it contains an aluminum inhibitor so that it does not attack the aluminum components. Be sure to follow manufacturer's cleaning instructions.

2. Remove the components from the detergent bath and immediately flush away any residue and rinse thoroughly with hot water. Shake off excess water and let components dry for 30-60 minutes. Set the cell so that its plates are in a vertical position for drainage.
3. Vacuum clean the interior of the cabinet and clean off all electrical connections before reinstalling the components.
4. Clean the outside cabinet and inlet/outlet grilles by wiping down with a lint free soft cloth and a suitable household cleaner, (i.e. Mr. Clean, 409, etc.)
5. Reinstall the components.
6. Attach high voltage wires.
7. Reinstall cabinet wrapper.
8. Plug in and turn on unit.

VII. PERIODIC MAINTENANCE AND TROUBLESHOOTING

The following sections are for the use of trained service personnel only.

WARNING — THE FOLLOWING PROCEDURES WILL EXPOSE HAZARDOUS LIVE AND MOVING PARTS. DISCONNECT AIR CLEANER BEFORE PROCEEDING.

All SMOKEETER/CRYSTAL-AIRE air cleaners are manufactured to give years of trouble-free performance. As with any piece of equipment, however, breakdowns can occur. Due to the simplicity of design, breakdowns are restricted to these components:

- the air mover*
- the power pack
- unicell
- speed control switch
- safety switch
- indicator lamp

This section covers the troubleshooting procedure and a guide which will enable you to determine the cause of most problems. Refer to Section VIII for replacement parts.

*This model is equipped with a permanently lubricated motor and no further oiling is required.

COMPONENT FUNCTION

1. Power Pack — the electrical circuit is designed around the power pack which contains the necessary components to convert 115 Volts, single-phase, 60 hertz to the high voltage DC required for the unicell.
2. Unicell Ionizing Section — the ionizing section supports four tungsten wires charged positive to a nominal 11,000 volts DC. The baffle plates parallel to the wire are at ground potential. Its function is to electrically charge the contaminated particles as they pass through it.
3. Unicell Collecting Section — the collecting section consists of alternately charged plates. Plates are alternately charged with a nominal 5,500 volts DC positive. The field between the plates forces the charged particles to the ground plates and removes them from the airstream.
4. Air Mover — the air mover draws in contaminated air and exhausts clean air through the outlet.

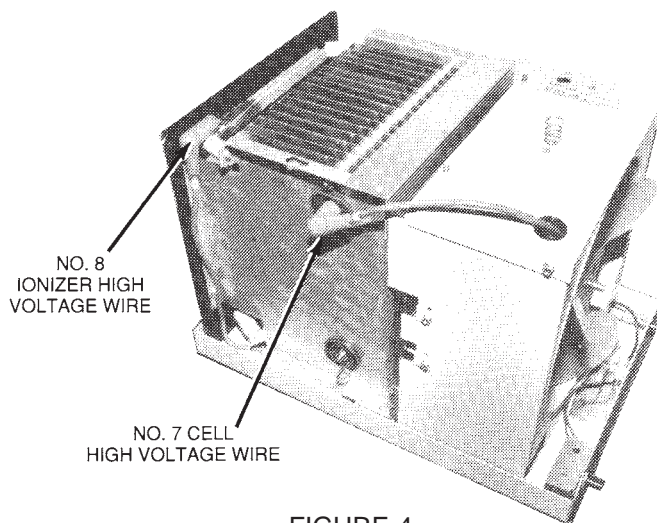


FIGURE 4

HOW THE HIGH VOLTAGE IS SUPPLIED TO THE COMPONENTS

The power pack supplies high voltage DC to the ionizing and collecting sections of the unicell by the use of high voltage lead wires. Two separate terminals are used on the output side of the pack. Terminal #8 supplies nominal 11,000 volts DC positive to the ionizer. Terminal #7 supplies 5,500 volts DC to the cell (see Figure 4).

TOOLS REQUIRED FOR TROUBLESHOOTING

- Screwdriver — (common type) 8" or longer with insulated handle.
- Volt-Ohm Meter — for measuring low voltage input (115 VAC), continuity (OHMS) and low voltage DC.
- High Voltage Probe (DC) positive polarity — for checking the high voltage power supply (minimum range from 0 to 15 KV DC).

HOW TO MEASURE HIGH VOLTAGE

For accurately measuring the high voltage, a 0 to 15 KV minimum scale high voltage probe capable of measuring positive polarity is required.

MEASURING UNICELL IONIZER VOLTAGE (See Figure 5)

1. Turn the unit off and remove the cabinet. This will disengage the safety interlock.
2. Connect the ground clip of the positive polarity probe to the base unit.

CAUTION: Always ground the high voltage probe to a solid ground connection on the base unit.

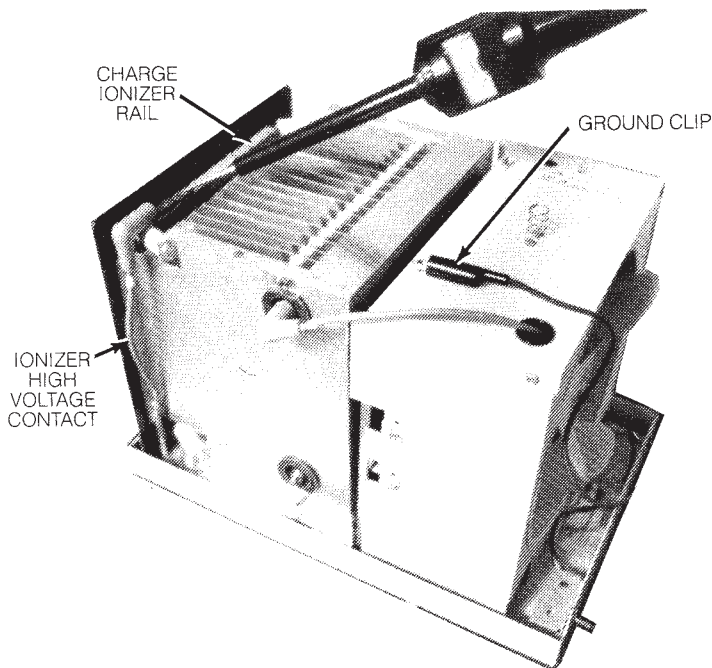


FIGURE 5

3. Turn unit speed control switch on and cautiously engage the safety interlock switch by depressing the button.

CAUTION: Be sure to disengage safety interlock switch after measuring voltages.

4. Place the probe's tip on the ionizer and measure the positive DC voltage. The voltage should read 10.0 to 11.0 KV DC.

- If measurements are abnormal, refer to the troubleshooting guide for cause and correction.

MEASURING UNICELL COLLECTOR VOLTAGE (See Figure 6)

1. Connect the ground clip of the positive polarity probe to the base unit.
2. Engage the safety interlock switch and measure the collector high voltage by placing the probe's tip on one of the charged plates. The voltage reading should be 5.0 to 6.0 KV DC.

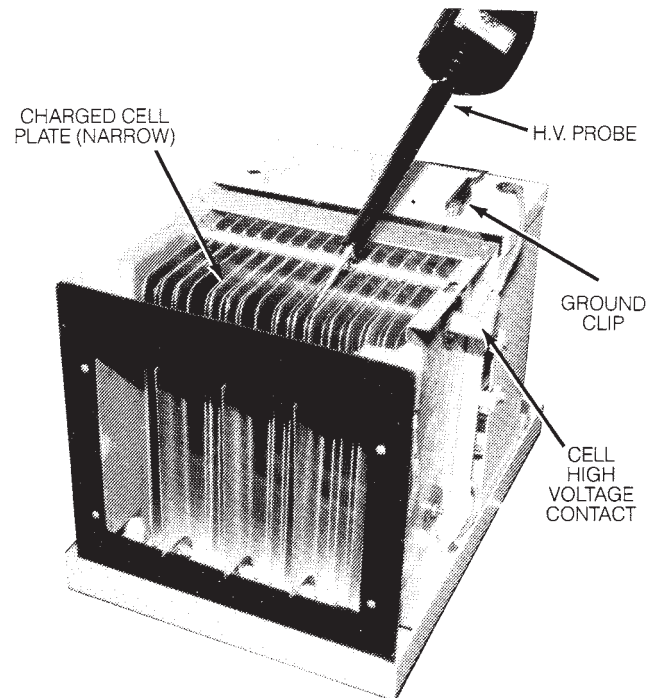


FIGURE 6

- If measurements are abnormal, refer to the troubleshooting guide for cause and correction.

CHECKING THE POWER PACK OUTPUT (See Figure 7)

1. Remove unicell from the cabinet.
2. Engage the safety interlock switch and measure the output from the ionizer terminal of the power pack by placing the probe's tip on the ionizer high voltage contact.

- Output reading without the unicell should read 11.0 to 13.0 KV DC positive.

3. To measure the collection cell output voltage, place the probe's tip on the cell high voltage contact.
- Output without the unicell should read 5.0 to 6.5 KV DC positive.

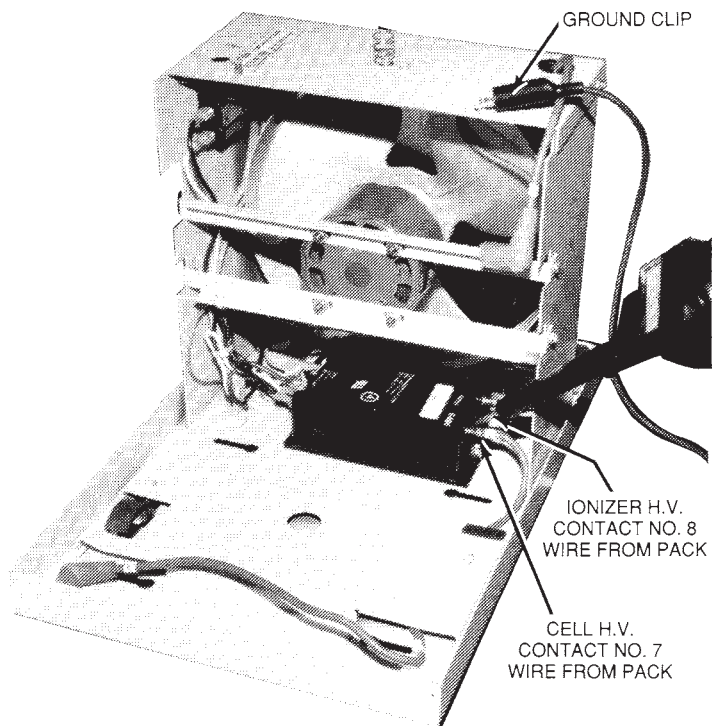


FIGURE 7

CHECKING LAMP VOLTAGE

1. Check power supply output lamp output by connecting a good 2 volt lamp.
2. Check lamp operation with 1.5 volt battery as shown in Figure 8.

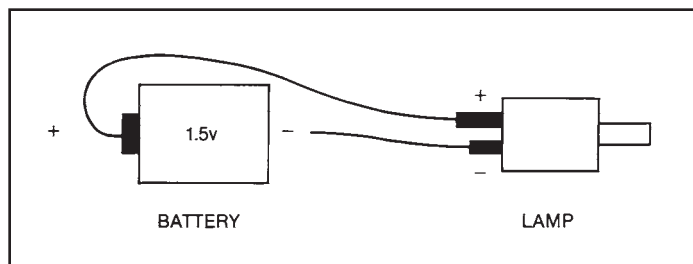


FIGURE 8

VIII. REPLACEMENT PARTS

Replacement parts can be ordered from your local distributor or from UAS. To order parts from UAS, call or write:

UNITED AIR SPECIALISTS, INC.
 4440 CREEK ROAD
 CINCINNATI, OHIO 45242
 1-800-551-5401

ATTN: SMOKEETER/CRYSTAL-AIRE
 CUSTOMER SERVICE

The following information will be required for prompt service:

1. Unit Model No. on bottom of base unit at air mover end.
2. Unit Serial No. on bottom of base unit at air mover end.
3. Part No. of part (see Section IX, Illustrated Parts).

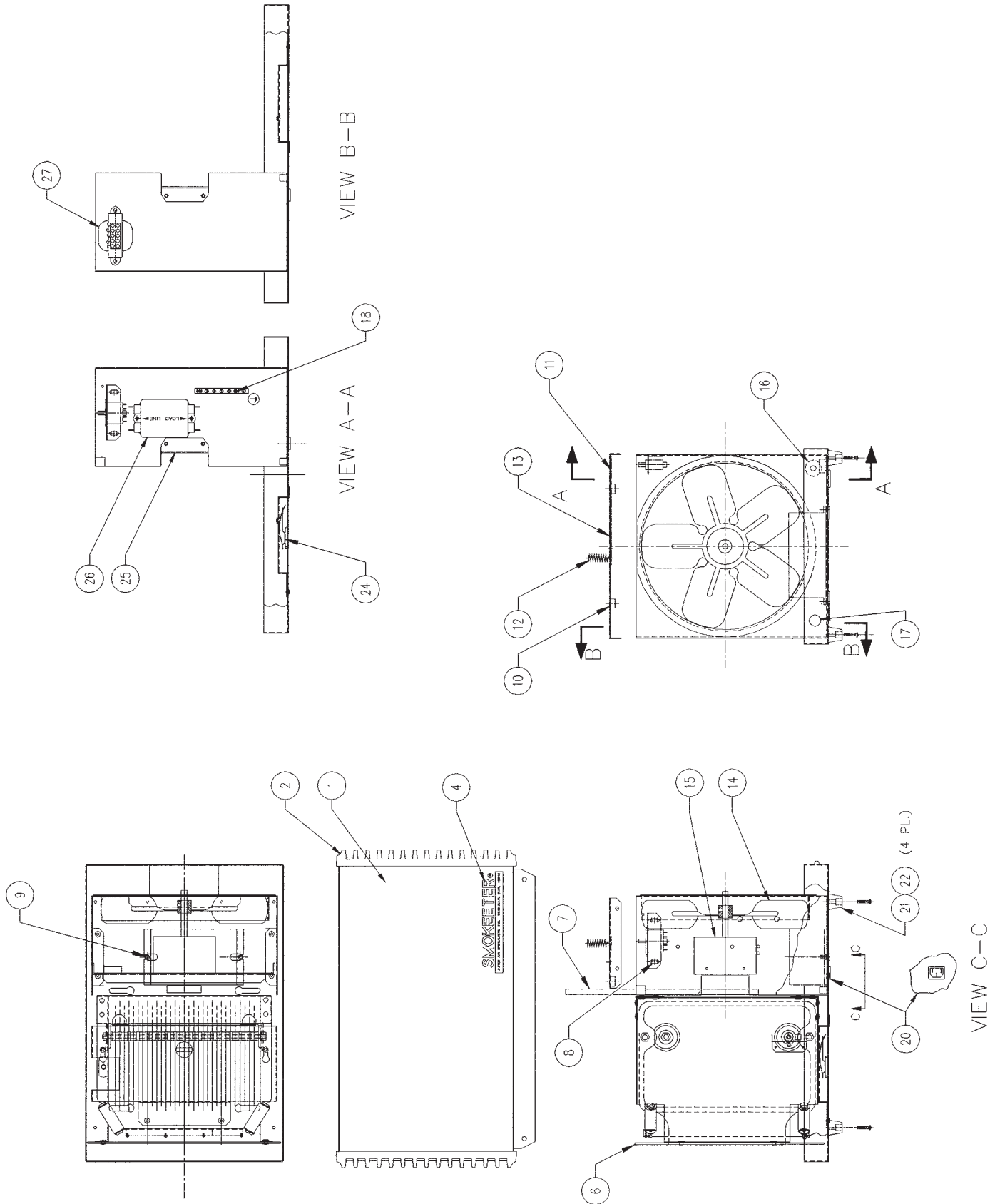
When returning a defective part under warranty, you must call UAS for a customer return authorization number. This number should appear on the package that is being returned. With this control number, we can assure you will receive prompt service. You can also return defective parts to your local distributor.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
A. Control switch on, indicator lamp off, air mover operates.	<ol style="list-style-type: none"> 1. Defective lamp. 2. Faulty connection to lamp. 3. Loss of high voltage. 	<ol style="list-style-type: none"> 1. Replace lamp. 2. Check connection to lamp. 3. Check power pack.
B. Control switch on, indicator lamp on, air mover does not operate.	<ol style="list-style-type: none"> 1. Air mover faulty. 2. Foreign object locking air mover. 3. Faulty control switch. 4. Connector not properly connected (at control switch). 	<ol style="list-style-type: none"> 1. Replace air mover. 2. Clean foreign object from air mover. 3. Replace control switch. 4. Check connection at control switch.
C. Control switch on, air mover and lamp off.	<ol style="list-style-type: none"> 1. Unit is not plugged in. 2. Safety interlock switch not engaged. 3. Safety interlock switch defective. 4. Control switch defective. 	<ol style="list-style-type: none"> 1. Plug unit into 115 VAC receptacle. 2. Engage safety interlock switch. 3. Replace safety interlock switch. 4. Replace control switch.
D. Air mover operates on low or high speed only.	<ol style="list-style-type: none"> 1. Control switch defective. 	<ol style="list-style-type: none"> 1. Replace control switch.
E. Poor air quality.	<ol style="list-style-type: none"> 1. Unicell dirty. 2. Unicell malfunctioning. 3. Unicell installed backwards or upside down. 4. High voltage contacts dirty. 5. Unit being operated on too low a speed. 6. Placement of unit not creating a good air pattern. 	<ol style="list-style-type: none"> 1. Clean unicell. 2. Check unicell for: <ol style="list-style-type: none"> a. Foreign matter between plates b. Ionizer wire loose or broken c. Defects in insulators 3. Install unicell as shown in Figure 1. 4. Clean high voltage contacts. 5. Increase air mover speed. 6. Contact your local distributor or United Air Specialists.
F. High voltage output low or zero.	<ol style="list-style-type: none"> 1. Loss of input 115 VAC. 2. Unicell malfunctioning. 3. Power pack defective. 	<ol style="list-style-type: none"> 1. Determine loss of input voltage. 2. Check unicell for: <ol style="list-style-type: none"> a. Foreign matter between plates b. Ionizer wire loose or broken c. Defects in insulators 3. Replace power pack.

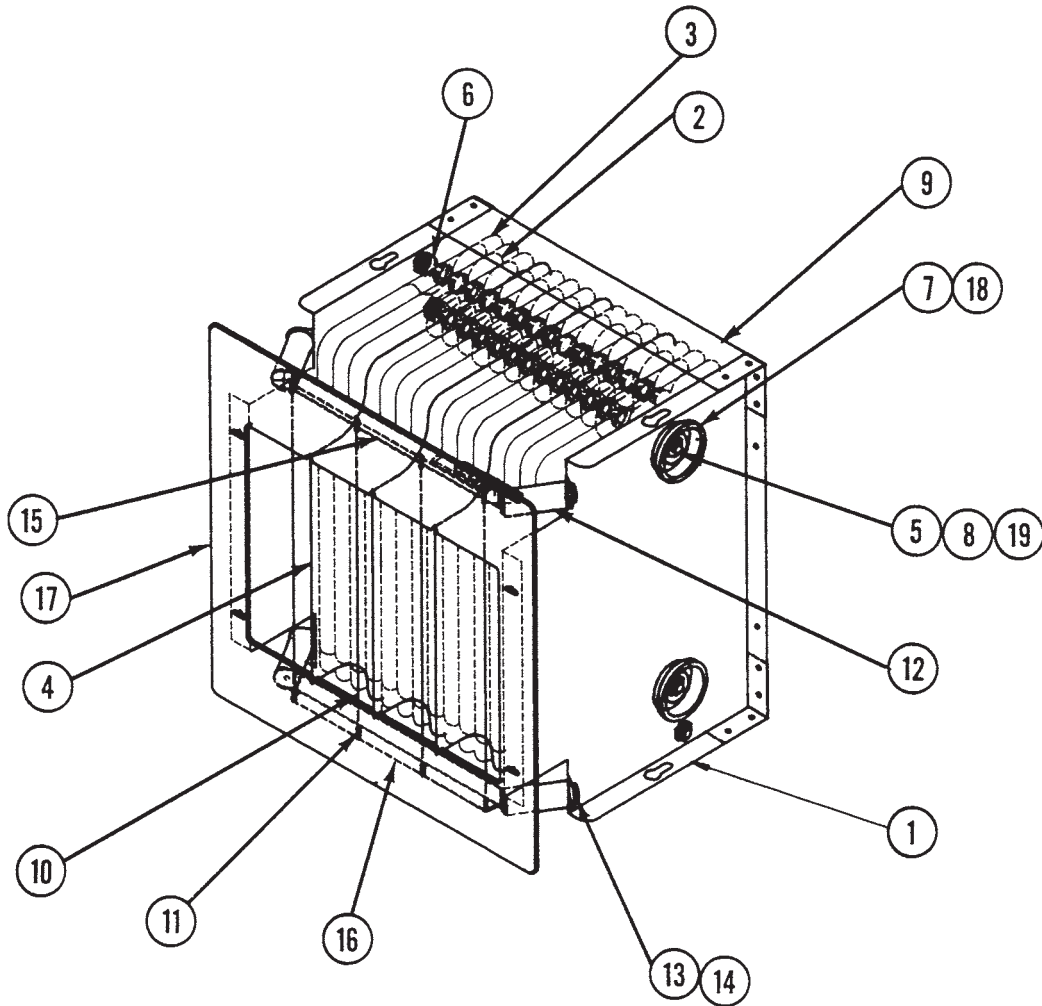
*Refer to Wiring Diagram and Illustrated Parts

IX. ILLUSTRATED PARTS



SE 10 REPLACEMENT PARTS

ITEM NO.		PART NO.	DESCRIPTION	QTY.
1	CHOOSE 1	10-8878	WRAPPER, OYSTER	1
		10-3048	WRAPPER, WOODGRAIN	1
2	CHOOSE 1	33-0136	GRILLE, OYSTER	2
		33-0146	GRILLE, BLACK	2
3	CHOOSE 1	30-0589	KNOB, OYSTER	2
		30-0588	KNOB, BLACK	2
4	CHOOSE 1	41-1026	SMOKEETER LOGO, OYSTER	1
		41-1130	SMOKEETER LOGO, WOODGRAIN	1
		41-1246	CRYSTAL-AIRE LOGO, OYSTER	1
		41-1247	CRYSTAL-AIRE LOGO, WOODGRAIN	1
5		10-2735	PRE-FILTER SCREEN	1
6		02-2723	UNICELL	1
7		33-0154	CARBON FILTER	1
8		20-2841	INTERLOCK SWITCH	1
9	CHOOSE 1	21-1219	POWER PACK, 90-130V	1
		21-1246	POWER PACK, 200-250V	1
10		30-0537	TINNERMAN NUT	2
11		36-0072	LEAF SPRING, INTERLOCK ACTUATOR	1
12		36-0014	CONTACT SPRING, COIL	1
13		10-3491	FAN COVER	1
14		32-0156	ALUMINUM PROPELLER	1
15		02-2625	MOTOR ASSEMBLY	1
16		20-1314	LED INDICATOR	1
17	CHOOSE 1	03-1513	SPEED CONTROL (VARIABLE SPEED UNITS)	1
		20-1421	ROCKER SWITCH (2-SPEED UNITS)	1
18		20-1368	GROUND BUS	1
19		20-2922	CORD, 10' GREY	1
20		20-2921	IEC 320 CONNECTOR	1
21		30-1735	SCREW, SELF-TAPPING, #10-32X3/4	1
22		39-0286	FOOT, MOLDED	1
23		RESERVED		
24		03-1535	CONTACT SPRING	1
25		10-9347	MOTOR BRACKET	1
26	OPTIONAL	25-0229	EMI FILTER	1
27	230 V UNITS	21-1255	TRANSFORMER, 230V-120V, IEC APPROVED	1
28	NOT SHOWN	03-0862	HIGH VOLTAGE WIRE KIT	1



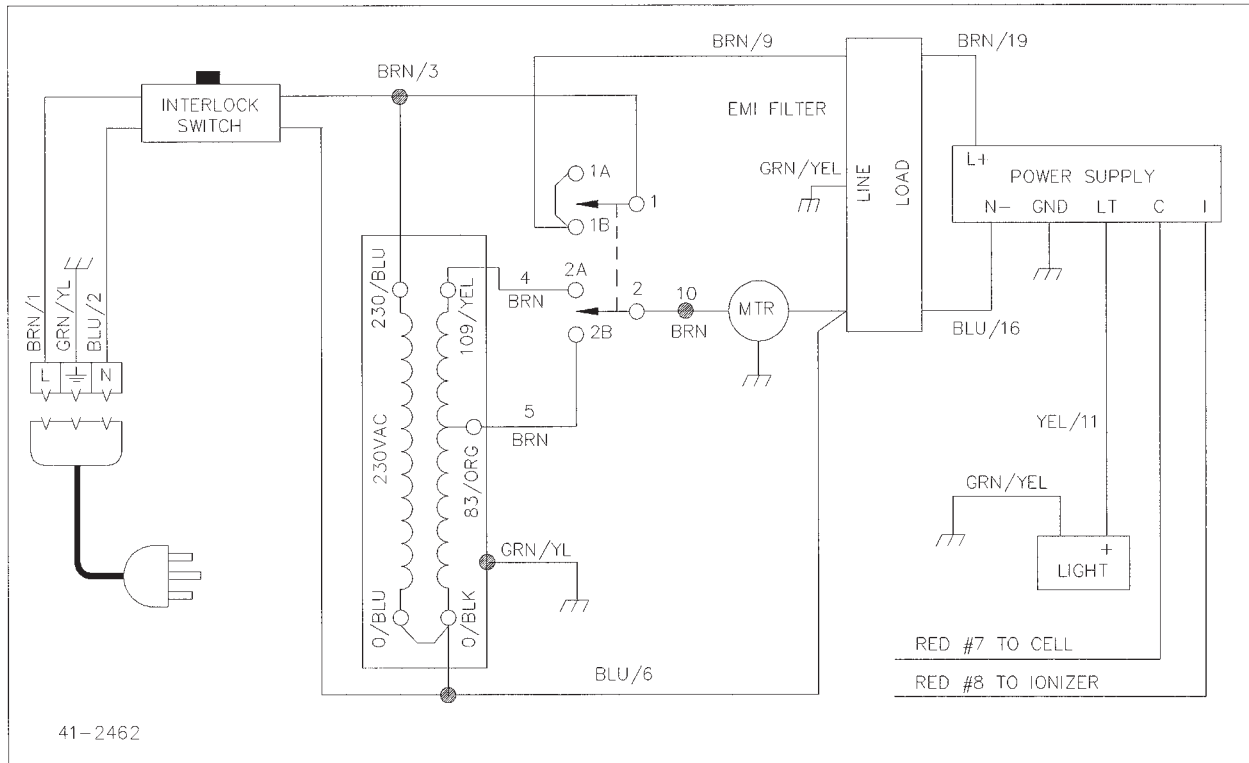
**SE 10 UNICELL ASSEMBLY
02-2723**

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	10-2780	END PLATE	2
2	10-0946	CELL PLATE, NARROW	16
3	10-0944	CELL PLATE, WIDE	12
4	10-2805	IONIZER GROUND PLATE	3
5	35-0072	CELL ROD 8-15/16" LG	4
6	35-0067	CELL SPACER	62
7	37-0008	CELL INSULATOR, DISK	4
8	30-0449	HEX NUT-1/4-20	8
9	10-2811	CORNER ANGLE	2
10	02-2721	IONIZER WIRE ASSEMBLY	4
11	36-0037	IONIZER WIRE SPRING	8
12	37-0013	INSULATOR (CERAMIC)	4
13	30-0039	LOCKWASHER #8 INT TOOTH	8
14	30-0119	SCR, PAN HD 8-32x5/16 LG	8
15	18-0795	IONIZER RAIL (TOP, WITH H.V. CONTACT)	1
16	10-2786	IONIZER RAIL (BOTTOM)	1
17	37-0064	UNICELL MASK	1
18	30-0283	CELL SPACER WASHER	4
19	20-1312	TERMINAL, CELL	1
20	20-1313	TERMINAL, IONIZER	1

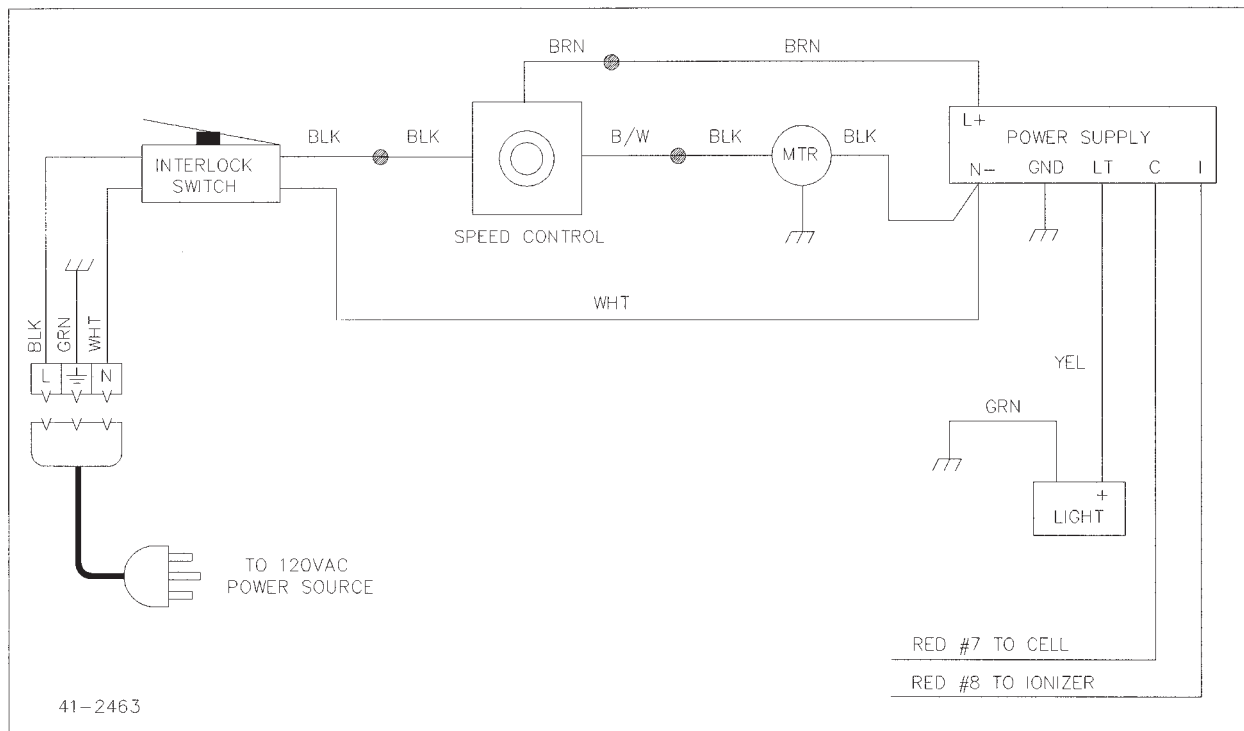
*To convert cell with "spark plug" type H.V. connections to current H.V. connections, order kit #03-1595.

WIRING DIAGRAMS

SE 10 230 VAC, 2-Speed



SE 10 120 VAC, Variable Speed



UNITED AIR SPECIALISTS, INC.
WALL WOOD, VA

UAS warrants all equipment manufactured and sold by UAS against defective parts and workmanship for one year from date of shipment to Purchaser, except that commercial or nonindustrial air cleaners (other than engineered systems) are warranted for three years from such date. This warranty is subject to the limitations in UAS' standard terms and conditions provided to Purchaser. Any unauthorized repairs or modifications or abnormal use or misuse of equipment will void all warranties. In no case will UAS' responsibility or warranty extend to equipment not manufactured by UAS.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

As Purchaser's exclusive remedy for any defects in the equipment, UAS will exchange or repair any defective parts during the warranty period, provided such parts are returned, prepaid, to UAS' factory. The obligation of UAS is limited to furnishing replacement parts F.O.B. UAS' factory or making repairs at UAS' factory of any parts which are determined, upon inspection by UAS, to be defective. UAS is not responsible for labor or transportation charges for the removal, reshipment or reinstallation of the parts.

IN NO EVENT WILL UAS BE RESPONSIBLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.



To Place an order contact ACS, Inc. @ (800) 878-5030