



**United Air Specialists, Inc.**

a CLARCOR company

---

---

# OWNER'S MANUAL

---

---



**Model DCN-EAB  
Shown**

## COMMERCIAL AIR CLEANER

### **SMOKEEETER® MODELS:**

**CCN-XB**

**DCN-XB**

**QCN-XB**

**CCN-EAD**

**DCN-EAB**

**DCN-EAD**

# KNOW YOUR EQUIPMENT

READ THIS MANUAL FIRST.

Your SMOKEETER system should provide many years of trouble-free service. This manual will help you understand the operation of your SMOKEETER unit. It will also help you understand how to maintain it in order to achieve top performance. For quick future reference, fill in the system and filter information in the spaces below. Should you need assistance, call the United Air Specialists, Inc. customer service number shown below. To expedite your service, have the following information available when contacting UAS.

UAS ORDER #: \_\_\_\_\_

UNIT MODEL #: \_\_\_\_\_

UNIT SERIAL #: \_\_\_\_\_

CARTRIDGE FILTER PART #: \_\_\_\_\_

SYSTEM ACCESSORIES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INSTALLATION DATE: \_\_\_\_\_

**Air Cleaning Specialists, Inc. Fenton, MO 63026**

**1-800-878-5030**

# TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
	<b>SAFETY PRECAUTIONS</b> .....	ii
I.	<b>INSPECTION NOTE</b> .....	2
II.	<b>INSTALLATION PLANNING</b> .....	2
	A. Unducted or Area Capture .....	2
	B. Ducted or Source Capture .....	2
	C. Access Clearance .....	2
III.	<b>INSTALLATION</b> .....	2
	A. Unit Mounting .....	3
	B. Metal Truss Supported Ceilings .....	3
IV.	<b>DRAINS</b> .....	3
V.	<b>DISCHARGE GRILL</b> .....	3
	A. Unducted Installation .....	3
	B. Ducted Installation .....	3
VI.	<b>ELECTRICAL REQUIREMENTS</b> .....	3
VII.	<b>MOTOR/BLOWER CHECKOUT</b> .....	5
	A. Drive Set Access Procedure .....	5
VIII.	<b>DESCRIPTION OF COMPONENTS</b> .....	5
	A. Prefilters .....	5
	B. Mist-Stop Filter .....	5
	C. Ionizing Sections .....	5
	D. Collection Cells .....	5
	E. Afterfilters .....	5
	F. Power Packs .....	6
	G. Push-to-Test Buttons .....	6
	H. Blower .....	6
	I. Drive .....	6
	J. Discharge Grill .....	6
	K. Cabinet .....	6
	L. Access Door (Electrostatics) .....	7
	M. Access Door (Drive Set) .....	7
IX.	<b>MAINTENANCE</b> .....	7
	A. Cleaning Instructions .....	7
	B. Component Cleaning Methods .....	7
	C. Instructions for Replacing Ionizer Wire .....	8
X.	<b>PERIODIC MAINTENANCE AND ADJUSTMENT</b> .....	8
	A. Replacement of Door Gaskets .....	8
	B. Airflow Adjustment .....	9
XI.	<b>TROUBLESHOOTING</b> .....	9
XII.	<b>REPLACEMENT PARTS</b> .....	11
XIII.	<b>APPENDIX</b>	
	A. SE Series Airflow Curves .....	13
	B. Wiring Diagrams .....	14

## SAFETY PRECAUTIONS

We have provided many important safety messages in this manual and on the SMOKEETER®. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others. All safety messages will follow the safety alert symbol and the word “DANGER” “WARNING” or “CAUTION”. These words mean:



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

## IMPORTANT SAFETY INSTRUCTIONS

### WARNING

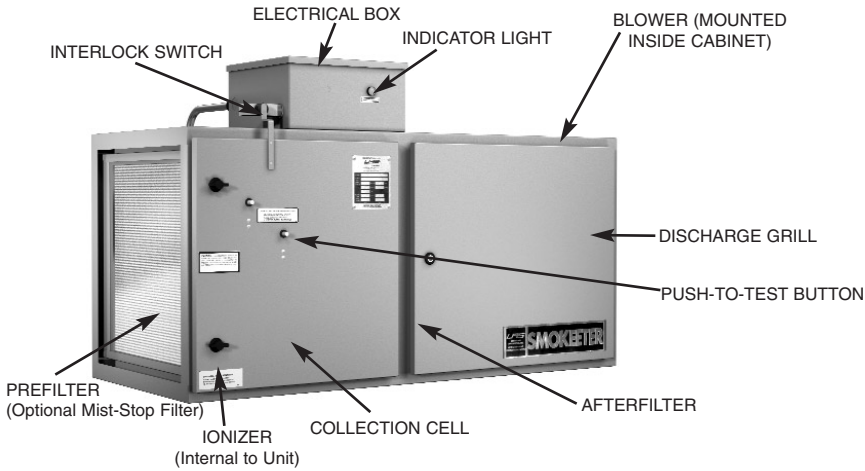
To reduce the risk of fire, electric shock, or injury when using the air cleaner, follow these basic precautions:

- Use two or more people to move and install the air cleaning system.
- The air cleaner must be properly grounded.
- Disconnect power before servicing.
- Replace all access panels before operating.
- Wear protective clothing and safety glasses when handling collection components or servicing the air cleaner.
- Electrical connections should only be made by qualified personnel, and be in accordance with local and national codes and regulations.
- Do not use in explosive atmospheres.
- Use nonflammable cleaners.
- Do not collect emissions which are explosive.
- Keep flammable materials and vapors, such as gasoline, away from air cleaner.
- The unit should be inspected frequently and dirt removed to prevent excessive accumulation which may result in flash-over or fire damage.
- The SMOKEETER® system should not be used for support of personnel or material.
- Operate only in a safe and serviceable condition.

# SMOKEETER® Industrial Air Cleaner Installation and Service

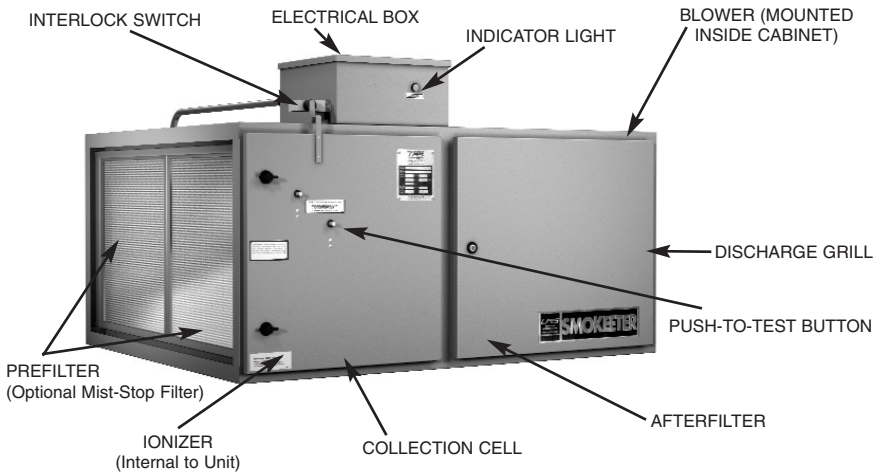
## CCN-EAB & XB

AIRFLOW →

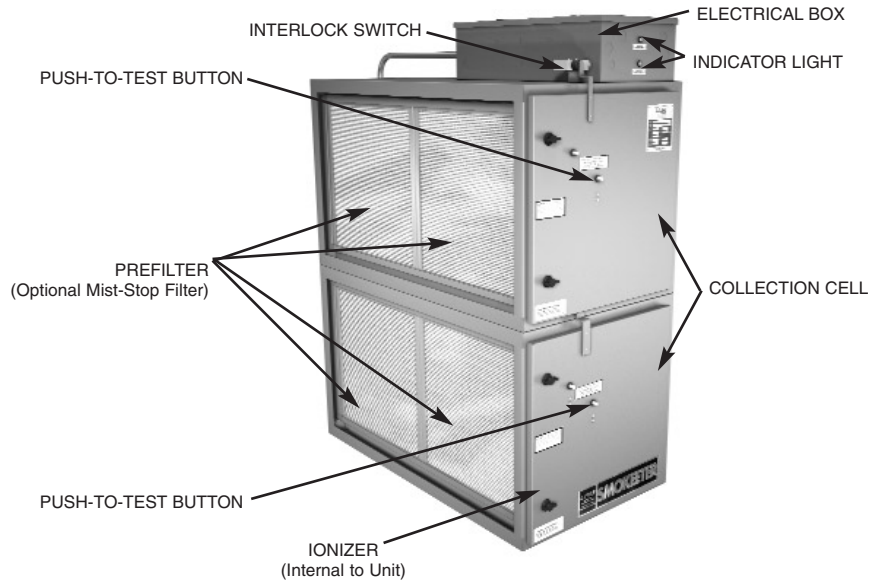


## DCN-EAB, EAD XB

AIRFLOW →



## QCN-XB



## SMOKEETER® NOMENCLATURE

SMOKEETER® electronic air cleaners are available in a variety of configurations and sizes. Codes shown below identify characteristics which might be built into a given unit. This model number completely identifies the design and can be found on the unit nameplate. For example, a model designated CCN-EAB could be defined according to descriptions listed below (see bold):

### CCN - SMOKEETER® N-Series

- 10** - Airflow in 100s of CFM (i.e., 10 ≅ 1,000 CFM, etc.)
- E** - Enclosed power pack
- A** - 115/1/60
- B** - 1/2 HP motor
- D** - 1 HP motor

### Models CCN & DCN SMOKEETER®

This type of SMOKEETER® Industrial Air Cleaner is a self-contained, two-stage, Penney-type, electrostatic precipitator complete with fully-interlocked, energy-limiting, UL-recognized power pack, mechanical prefilter, ionizer, collection cell, afterfilter, blower assembly, indicator light, interlock switch and push-to-test buttons. Models available include:

CCN-EAB                      DCN-EAD  
DCN-EAB

### Models CCN-XB, DCN-XB, QCN-XB

This type of SMOKEETER® Industrial Air Cleaner is a self-contained, two-stage, Penney-type, electrostatic precipitator complete with fully-interlocked, energy-limiting power pack, mechanical prefilter, ionizer, collection cell, afterfilter, indicator light, interlock switch and push-to-test buttons. XB units are designed for use in tandem with models CCN-EAD, DCN-EAB and DCN-EAD or in a ducted application where a blower is included in the existing ventilation system. Models available include:

CCN-XB                      QCN-XB  
DCN-XB

### SE Series Voltages Available

Voltage	Phase	HZ
115*	1	60

## I. INSPECTION NOTE

Upon receipt of your unit, 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.

## II. INSTALLATION PLANNING

### A. Unducted or Area Capture

Consideration must be given to the placement of the precipitator to maximize its effectiveness. The number of units required to clean the air will depend on the layout of the room and the concentration of pollutants.

Because it is necessary to develop proper airflow patterns, the placement and number of precipitators should be as suggested by UAS or your local SMOKEETER® representative.

### B. Ducted or Source Capture

When your SMOKEETER® is used as a ducted source collector, the enclosure or pick-up hood design is important for adequate capture of contaminants. Drive pulleys and belts have been selected to provide proper airflow at the design static pressure specified. Pulleys and belts should not be replaced without first contacting UAS.

## ! CAUTION

Do not operate this equipment in the presence of combustible vapors or gases.

### C. Access Clearance

Allow at least 36" door swing and access clearance on the door side of the unit. All models require 18" clearance from the electrical junction box on top of the unit to any overhead obstruction to allow adequate access.

## III. INSTALLATION

Carefully remove the unit from the shipping container, again inspecting for shipping damage. For ease of installation, open access door and remove the cell, ionizer and filters from the cabinet.

Ceiling mounted units are suspended by means of ½" threaded rods run through weld nuts in the top corners of the units. (See page 4 for weld nut locations on all but XB models.) Additional support should be used for auxiliary equipment or ductwork.

Reinstall the components removed earlier to facilitate the mounting of the unit.

**A. Unit Mounting**

Models CCN and DCN are designed for suspended mounting. They can be provided with eyebolts for chain hanging, but the length of chain should be kept level. The preferred method of hanging is by threaded rods through the top of the cabinet. If chain is used, it should be of the welded link type, with a 2,000 lb. test strength or better. "S" hooks used for connections should be closed. The chain should be hung vertically. If any angle is introduced, the chain and fasteners should be sized to handle the added tension. Models QCN may be suspended by rods but are not approved for chain hanging.

**NOTICE**

The SMOKEETER® should not be used for support of personnel or material. Check with local building code/structural engineer to ensure proper installation to roof truss or column.

**B. Metal Truss Supported Ceilings**

Figure 1 shows an DCN unit suspended from a metal truss supported ceiling. Customer must take care to determine that the truss will be sufficient to support the weight. As shown, angle iron braces are secured between two steel trusses. Rod length should be kept to a minimum.

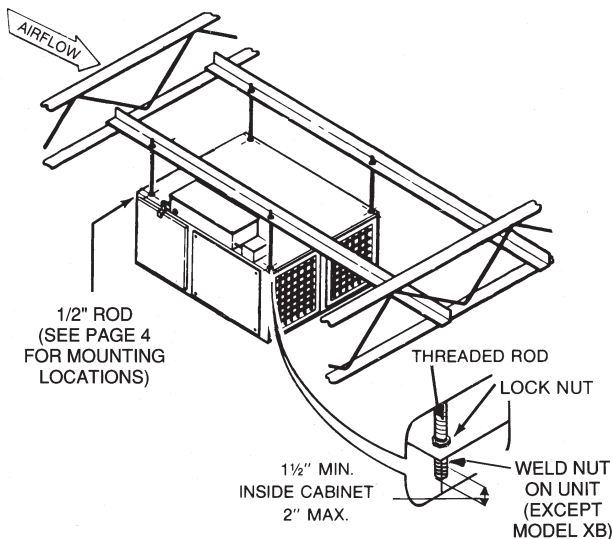


Figure 1  
Ceiling Mounted Unit

**IV. DRAINS**

All SE units are supplied with 1½" FPT drains. If dry material is to be collected, then drains should be plugged. If contaminant will run off the components, a 1½" trapped drain should be run to a collection container.

**V. DISCHARGE GRILL**

The four-way adjustable air discharge grill can be set to any open position desired.

**A. Unducted Installation** (for area capture)

The discharge grill should be set for maximum contaminant capture and even dispersion of clean air. The pattern should be suggested by UAS or your local SMOKEETER® representative.

**B. Ducted Installation** (for direct capture)

The discharge grill can be set to any position compatible with personnel comfort.

**VI. ELECTRICAL REQUIREMENTS**

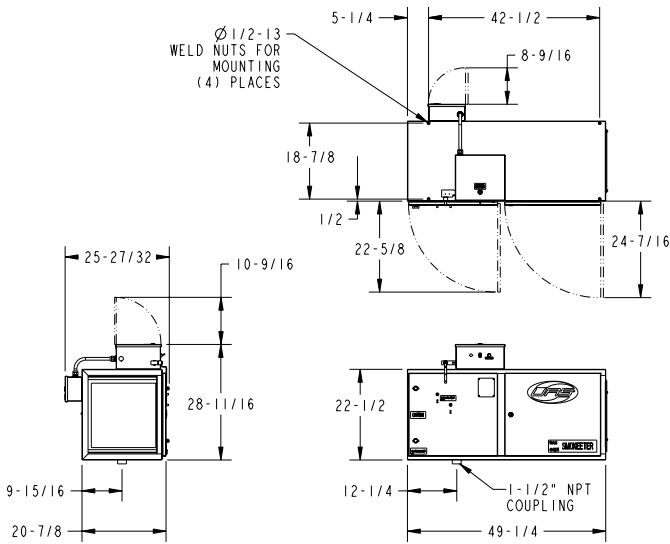
The only electrical connection required is a power source to the terminal block as shown in the wiring diagram (see Appendix B) inside the top electrical junction box. Connect as indicated on the "Supply Connection Location" label. See unit nameplate for voltage specifications.

Units are factory wired for the voltage requirement indicated to UAS by the customer. The electrical box has knockouts. Therefore, whatever electrical connectors are standard in your plant may be used to bring the power line into the unit.

The power switch for operating the unit and any fused disconnect switch must be supplied by the customer and located remotely (not supplied as part of the SMOKEETER®). UL listed models are supplied by UAS with a contactor and overload relay.

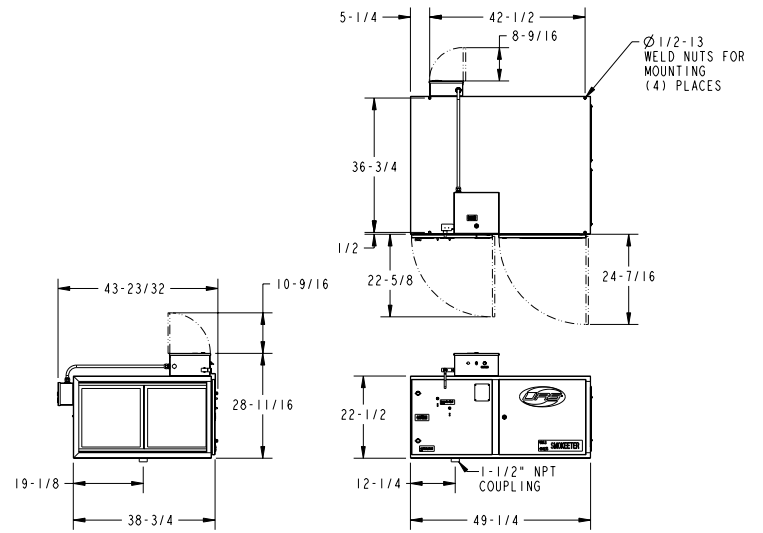
**SMOKEETER® Hanging Weights**

Model	Weight (lbs)
CCN-XB	100
CCN-EAD	225
DCN-XB	175
DCN-EAB	330
DCN-EAD	330
QCN-XB	345



**CCN-EAB**

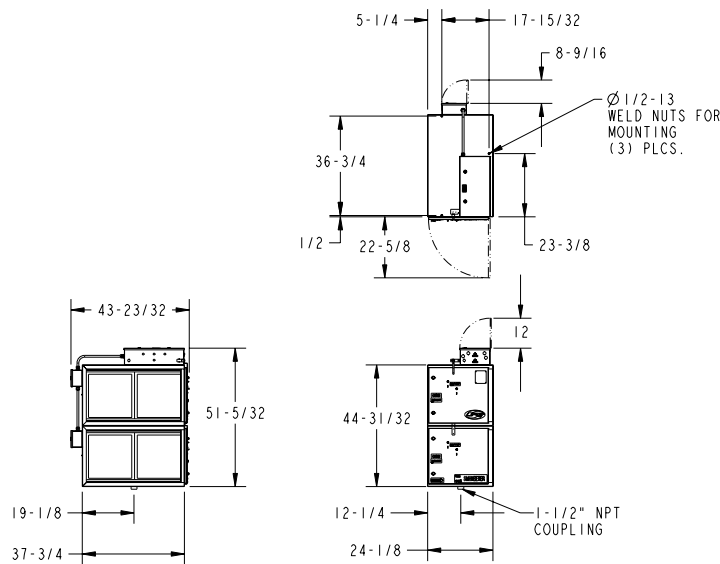
61-10034-0001



**DCN-EAB, DCN-EAD**

61-10034-0002

**Dimensions and Mounting Hole Locations  
(INCHES)**



**QCN-XB**

61-10034-0003



## VII. MOTOR/BLOWER CHECKOUT

After three-phase connection is made, check the direction of rotation of the blower wheel. See Figure 3 for drive set door access. If the wheel is not rotating in the proper direction, reverse the motor rotation by interchanging any two of the three AC input leads at the terminal block.

### NOTICE

Even when the blower is running backward, some air motion is noticeable. If the blower is rotating correctly, the access door will be snapped shut by the strong negative pressure within the cabinet.

When the SMOKEETER® is used in a ducted application, blower speed is increased to compensate for the static pressure loss of the ductwork. After ductwork is installed, and with the unit operating, measure the current flow to the unit using an amprobe. The ampere reading should not exceed the FLA rating stamped on the motor nameplate. If current flow is excessive, reduce blower speed by adjustment of the

### CAUTION

Measure the current at the remote starter or disconnect. Erroneous readings will result if measurements are made in the vicinity of the high voltage power supply located in the electrical box.

variable pitch sheave on the motor.

Single-phase units (i.e., 115/1/50-60) are prewired for proper rotation and line hook-up. Simply connect to singlephase input circuit and unit is ready for operation.

Input to the high voltage power pack must not exceed 120 volts, 60 Hertz. This is supplied by the power line or the step-down transformer as shown in the wiring diagram inside the main electrical junction box on all units.

The indicator light on the unit is illuminated when high voltage is present at the power pack. If the light fails to illuminate when power is turned on, refer servicing to authorized personnel.

### A. Drive Set Access Procedure

1. Shut down blower.
2. Open blower access door using 10mm or 3/8 hex tool.

## VIII. DESCRIPTION OF COMPONENTS

(See page 1 for photos of individual model components)

### A. Prefilters

Heavy-duty, reusable, aluminum mesh, industrial

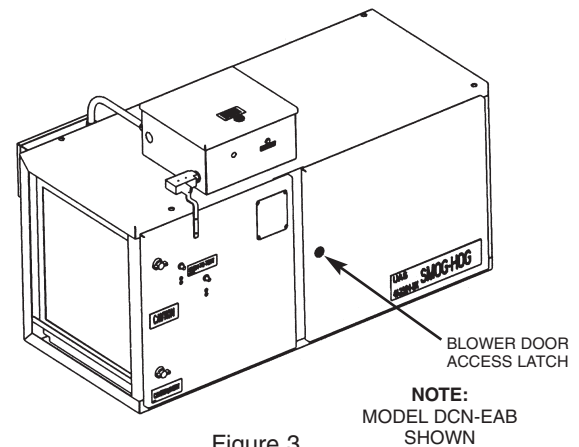


Figure 3  
Unit Access

service filters aid in air distribution and mechanically remove large particles not suitable for precipitation. They are interchangeable with afterfilters.

### B. Mist-Stop Filters (optional)

2" aluminum mesh or coalescing type filters for use on applications with coolant mist. Filters mechanically remove oil droplet coolant mist from air stream. This allows the ESP filter to operate for longer intervals between servicing. The Mist-Stop filters are washable.

### C. Ionizing Sections

Ionizing sections are independent of collection cells for ease of maintenance. The frame, of rugged aluminum construction, supports tungsten steel ionizing wires. Each wire is spring mounted and easily replaced in the field. The springs, wire support bars and heavy ceramic insulators are located out of the airstream, behind a three-sided aluminum extrusion with an airfoil design, to further limit insulator contamination. An extremely dense ionizing field and integral bypass prevention baffles assure ionization of all particles entering the precipitator.

### D. Collection Cells

Parallel plate collection components are of aluminum construction. Air gap insulators which afford a longer path to ground are located completely out of the dirty airstream. This arrangement maintains nominal operating voltages longer, thus reducing the frequency of cleaning. The insulators, along with the cell's long plate design, assure maximum efficiency and retention of collected contaminant.

### E. Afterfilters

Heavy-duty, reusable, industrial aluminum mesh filters aid even air distribution across the cells and trap any collected contaminant that might blow off the cells during start and stop operations. They are interchangeable with prefilters.

**F. Power Supply**

The proprietary design high-voltage power supply sends 11 KV DC to collection components and is limited to less than 5 milliamps of current. This limited current draw will protect both the power supply and components in a short-out condition. Power consumption is 75 watts maximum. The power pack is located in an external electrical box, outside of the airstream.

**G. Push-to-Test Buttons**

An exclusive UAS feature, these buttons verify electrical continuity during equipment operation without the use of a meter. They are also a convenient means to ground any residual charge in components before removing them from a deactivated unit.

**H. Blower**

A belt-driven, low speed, centrifugal-type blower with sealed ball bearings is shock-mounted to the cabinet to reduce noise and vibration.

**I. Drive**

Motors are continuous-duty, totally enclosed, and fastened to adjustable motor mounts. The motor is equipped with a variable speed motor pulley allowing on-site blower speed adjustment.

**J. Discharge Grill**

Four-way-direction, individually adjustable deflectors permit adjustment of cleaned air distribution to meet specific application requirements.

**K. Cabinet**

This 16-gauge steel housing is of wraparound construction with all seams welded. The cabinet is prepared in a phosphatized wash cycle. The finish coat is an electrostatically-applied powder paint, baked to ensure a durable hard finish. The electrostatic compartment features bypass baffles on the door and rear wall to guide the contaminated airstream through the components.

## THE FOLLOWING SECTIONS ARE FOR THE USE OF TRAINED PERSONNEL ONLY

### ! CAUTION

Hazardous live and moving parts are exposed during the following procedures. Switch off/isolate the electrical supply to the SMOKEETER® Air Cleaning System before servicing.

### ! CAUTION

Risk of electrical shock. A residual DC voltage will remain on high voltage components for a short time after power is removed. Prior to handling, ground components using an insulated screwdriver, refer to Figures 4 and 5.

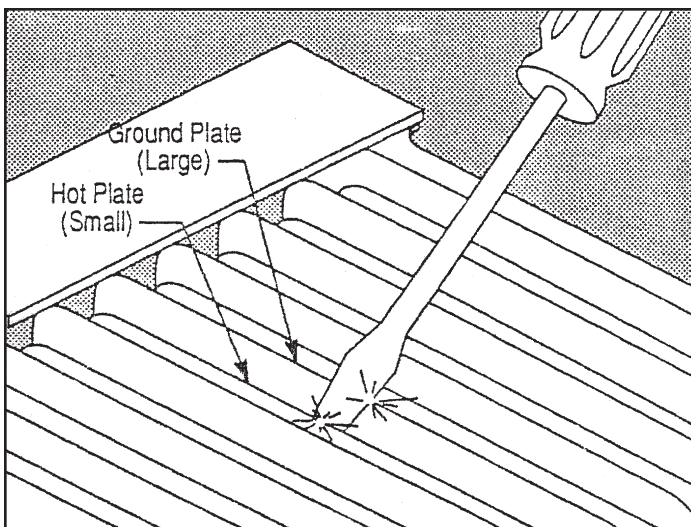


Figure 4

**Grounding the Collection Cell**

### ! NOTICE

Cleaning and servicing should only be done by qualified and trained personnel.

Some collected contaminants may be hazardous. Consult factory or local safety personnel before servicing unit and for proper disposal of collected contaminants.

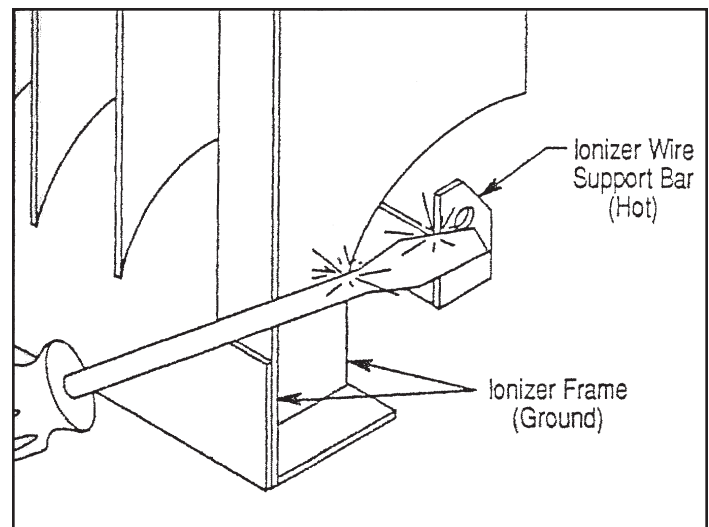


Figure 5

**Grounding the Ionizer**

**L. Access Door (Electrostatics)**

Doors are hinged for easy access and interlocked to shut down high voltage when opened.

**M. Access Door (Drive Set)**

A separate hinged door allows access to motor and blower for easy adjustment (see Figure 3).

**IX. MAINTENANCE**

Normal maintenance is confined to periodic cleaning of the cell, ionizer and filters, plus checking of the drive belt. Rarely is any other maintenance necessary.

**A. Cleaning Instructions**

Turn unit off and depress both push-to-test buttons to remove any residual charge from components.

Slide dirty collection components (prefilter, ionizer, cell and afterfilter) from cabinet.

While there are many methods of cleaning, certain key cleaning criteria contribute to the effectiveness of every method. These include the type of detergent, detergent strength, water temperature, agitation/impingement, duration, rinse procedure and dry-out time.

**Type of Detergent**

In general, the detergent used on most applications will be alkaline in nature. It is extremely important that the detergent have a built-in buffering agent to prevent deterioration to the aluminum. Detergents are available through United Air Specialists for specific applications and contaminants.

**Detergent Strength**

Detergent concentration, or "strength," in a mixture with water varies with the application from 1:1 to 5:1 to even 20:1 parts water to parts detergent, refer to detergent manufacturer's directions. More or less detergent may eventually be required for effective cleaning at reasonable detergent cost. Typically, 20:1 is recommended as a starting point. Experimentation is almost always necessary.

**⚠ CAUTION**

Never mix acid and alkaline detergent for manual cleaning. Detergent mixing could cause rapid heat release, gel formation or other undesirable conditions.

**Water Temperature**

Detergents can be up to twice as effective in hot water and hot water alone is very effective in softening built-up residue. Water temperature should be 140°F to 180°F, not to exceed 190°F.

**Agitation/Impingement**

These methods are virtually the same, with impingement being the most extreme form of agitation. Any liquid movement over built-up residue will dissolve some of the contaminant, allowing detergent to work on the next layer. A reduction in cleaning time duration usually results.

**Cleaning Cycle Duration**

In most cleaning methods, adequate time must be allowed for the detergent to dissolve the contaminant thoroughly. Reaction time will vary depending on detergent strength, temperature and agitation. Guidelines for mixing, heating and expected results are included on specification sheets for most detergents.

**Rinse Procedure**

Cleaned components must be rinsed off quickly and thoroughly to remove any remaining contaminants. Even if the components appear to be clean, some detergent residue may remain. This should be removed because the residue may contribute to voltage bleed-down when the components are placed in service. Also, even though the detergent is "buffered" (i.e., treated to prevent deterioration of the aluminum), prolonged contact with the components could cause minor corrosion. As with cleaning, hot water should be used for rinsing.

**Dry-Out Time**

Collection components should be dry before the system is placed back into operation. Start-up of a wet system causes dead shorts and/or arcing conditions. Wet ionizers, collector cells and mesh filters should be placed in a warm room until they are dry. Techniques such as hand wiping insulators and blowing dry with compressed air will greatly shorten drying time.

**B. Component Cleaning Methods**

The manual cleaning method selected for a given system will depend on the type of contaminant, rate of deposit, facility limitations such as cleaning time windows (process down time) and available utilities. Any one of the following three acceptable cleaning methods may be included in such a plan.

**Hot Detergent Soak Tank**

This method involves placing components in an agitated solution of hot water and detergent, and is the most effective method. With proper detergent selection, this procedure will quickly remove most contaminants collected in a precipitator.

Components should not be placed in highly concentrated detergent solutions or allowed to soak for extended periods (e.g., overnight), especially at elevated temperatures. Extended soaking (e.g., days) in solvent or detergent solution will degrade components over time and should be avoided.

## Automatic Parts Washers

Certain commercially-available units combine and automate the features necessary for effective cleaning, including water heating, detergent injection, agitation, rinsing and drying.

## Portable Pressure Washer

A self-contained pressure washer with a spray wand can be an effective cleaning method, providing it is used with caution. Care must be taken not to expose collection cell plates to close-up and prolonged blasts of high temperature or high pressure water. Cell plates deform under continuous exposure to such conditions.

Wipe off contaminant from the high voltage insulators located on the back wall of the cabinet.

Reinstall components in the cabinet, close the door and turn the unit on. Connecting springs between cell and ionizer sections must be turned to the center of the cabinet for double component units (i.e., units with adjacent removable components — DCN). Electrical contact must be made between cells and ionizers by these springs. Make sure wall and door ground springs are in place and making contact with ionizer and cell endplates, respectively. See Figure 14 for properly aligned assembly.

## C. Instructions for Replacing Ionizer Wire

- Remove the damaged wire from each spring. Replace spring if damaged.
- Loop one end of the new wire over the bottom spring then extend the top spring and loop the end of the wire over the spring (see Figure 6 & 7). Pliers may aid this operation.
- Release the spring gently. The wire is now taut and automatically centered.

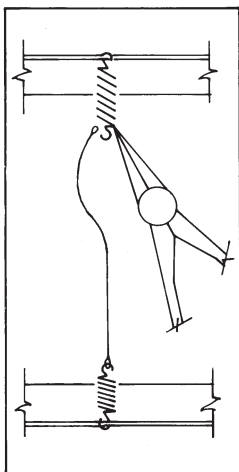


Figure 6  
**Attaching New  
Ionizer Wire**

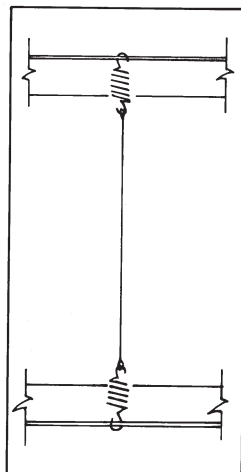


Figure 7  
**Correct Ionizer  
Wire Position**

**NOTE: In the event that replacement wires are not available, the ionizer may be left in service. Remove the broken wire(s) and springs from assembly until replacement is made.**

## X. PERIODIC MAINTENANCE AND ADJUSTMENT

### A. Replacement of Door Gaskets

As shipped from UAS, gasketed component access doors have been carefully sealed against leakage of liquids from the air cleaner cabinet. Should leakage occur, slight adjustment of the latch tongues on the back of the door handles may solve the problem. However, extreme care should be exercised in compressing the door gasket beyond its design limits. Before adjusting for gasket deflection, check for the following:

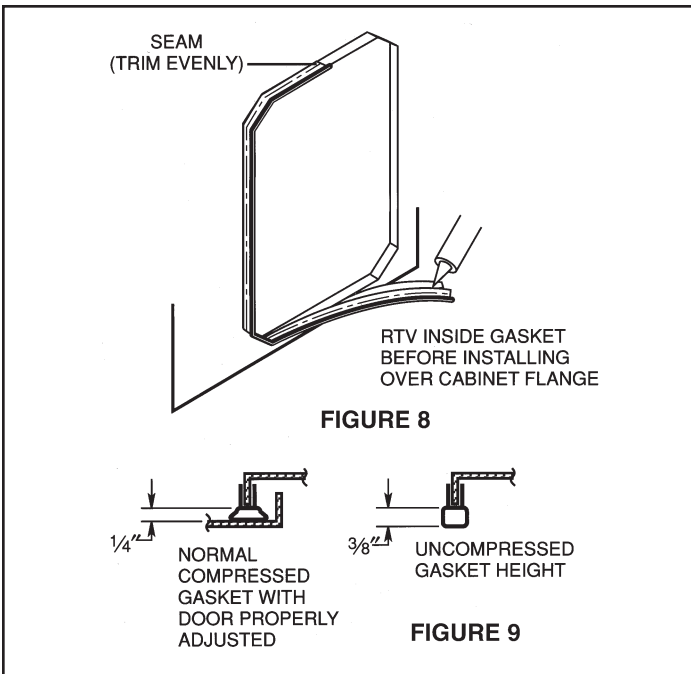
- Door or cabinet damage.
- Deformed or torn gasket.
- Leakage from some other source.

Collection components should be removed and replaced with great care to preserve gasket integrity. Should damaged gasket require replacement, order gasket part number 42-0168 (BUNA-N), with lengths as follows:

UAS MODEL	NUMBER OF DOORS	LENGTH PER DOOR (FT.)
CCN	1	6
DCN	1	6
QCN	2	6

### TO CHANGE GASKET:

- Remove existing gasket, making sure to scrape off any residual gasket caulking.
- Trim one edge of gasket neatly and evenly.
- Measure and cut gasket to approximate length required, allowing overage for final trim.
- Fill inside of gasket with RTV or other suitable caulk (see Figure 8).
- Press gasket into place, starting trimmed edge at top center of access lip. Make final trim cut and caulk between mating edges. Remove excess caulk. Make sure the gasket is firmly bottomed on the lip edge or the gasket may not seal against the door properly (see Figure 9).



**B. Airflow Adjustment**

The motor is equipped with a variable pitch pulley to allow for minor adjustments in cubic feet per minute

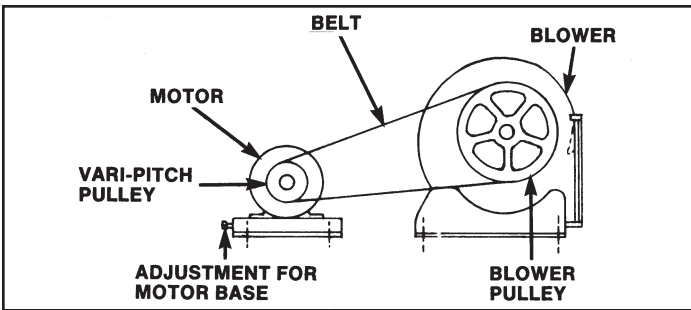


Figure 10

**Motor/Blower Schematic**

(CFM) of airflow. Belt tension is factory set for the service specified but should be checked at installation and again after 48 hours of use.

To change the blower RPM (which results in a change in CFM), adjustment of the variable pitch pulley is made by loosening set screw "A" and rotating the "A" part of the pulley while holding the "B" part in place. Figure 11A shows part "A" backed off approximately two turns with set screw "A" on flat section.

To increase the CFM, set the vari-pitch pulley as shown in Figure 11B. Set screw "A" must always be tightened securely to flat on pulley half "B."

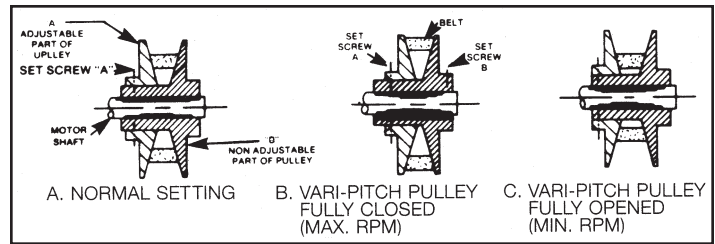


Figure 11

**Motor Pulley Settings**

! NOTICE

Always check belt tension after changing pulley setting and adjust for 1/2" of deflection, using thumb pressure, at midpoint between the two pulleys.

**XI. TROUBLESHOOTING**

Tools Required:

- Screwdriver 8" or longer with plastic handle
- 10mm hex wrench
- Volt-Ohm-Meter — used to check low voltage input (115 VAC) and continuity (OHMS)
- High Voltage Probe — used to check high voltage power supply. Range: from 0 to 15 KV DC
- Amp Probe

**Troubleshooting Procedures**

High voltage problems can generally be isolated by referring to the indicator light. When the light illuminates, high voltage is present at the ionizer and collector terminals of the power pack.

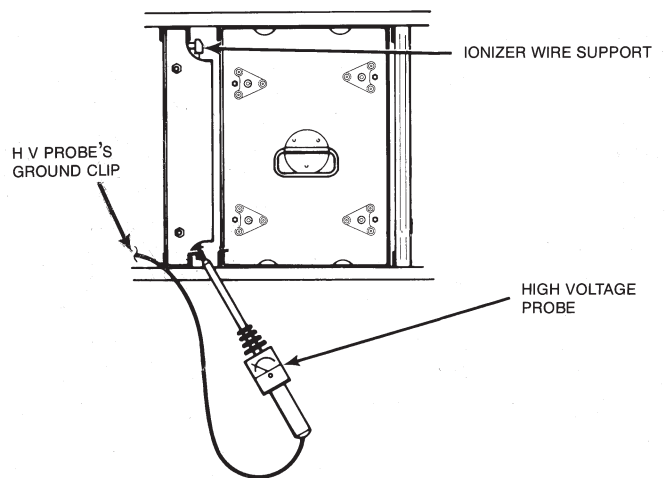


Figure 12

**Checking Ionizer Voltage**

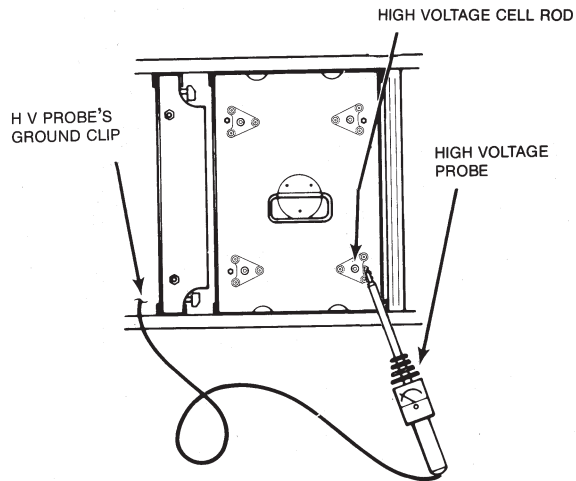


Figure 13

### Checking Cell Voltage

If the indicator light illuminates but there is no high voltage present at the ionizer or collector, the difficulty is caused by an open circuit in the high voltage path. Testing for high voltage is done by depressing push-to-test buttons individually. This should short out the circuit, causing the indicator light to go out, thus verifying electrical continuity.

If the light does not go out, check for the presence and condition of high voltage contact springs, hardware and (red) high voltage lead wires. See Figure 14 for proper alignment.

If the indicator light is out, proceed to isolate the difficulty as follows:

Open the access door and depress the interlock switch. Check for presence of high voltage at cell and ionizer with the high voltage test probe by connecting one probe lead to ground and the other lead to the (a) ionizer wire support (Figure 12) and then (b) to the end of the high voltage cell rod (Figure 13).

If high voltage is present, check that contact leads at light terminals and ground plate are snug. If contacts and leads are satisfactory, replace the light. Be sure that the access door switch is closed when making the final check.

If the indicator light is out and no voltage is present at the cell and ionizer, proceed as follows:

Open access door and remove the collection cell(s). Depress the door interlock switch and observe the indicator light. If the light illuminates, the collection cell is shorted. Carefully check for the presence of excessive dirt build-up or foreign material lodged between cell plates, or for bowed cell plates that would cause the cell to short out.

If the light remains out with the cell removed, close the door, discharge the high voltage with push-to-test buttons and remove the ionizer(s). Depress the door switch and observe the indicator light. If the light illuminates, the ionizer is shorted. Check for broken ionizer wires and build-up of contaminant on insulators. Wipe the insulators clean and replace ionizer wire(s) if necessary.

If the indicator light does not illuminate when components are removed, proceed as follows:

Secure the component access door and open the electrical box lid. Check for 115 VAC supply to the power supply. If 115 VAC supply voltage is present, remove one of the (red) high voltage leads from the power supply terminals. Observe the indicator light. If the light illuminates, one of the high voltage leads or contact springs is shorted to ground. Check for proper electrical alignment of contact springs and for a defective (red) high voltage lead. Replace if necessary. If the light remains out, repeat the procedure on the second (red) high voltage lead. If the indicator light does not illuminate when both (red) high voltage leads are removed, replace the power supply.

### XII. Replacement Parts

To order replacement parts, refer to "SMOKEETER® Parts List" on page 12. Order through your local UAS® representative or contact United Air Specialists, 4440 Creek Road, Cincinnati, Ohio 45242. Telephone 1-800-252-4647 or Fax 513-891-4882. Please have the unit model number, serial number (from component access door) and part numbers available when ordering.

### Properly Aligned DCN Assembly

ITEM NO:	PART NO:	DESCRIPTIONS:	QUANTITY REQUIRED*
1	02-2339	COLLECTION CELL ASSEMBLY	2
2	02-0037	IONIZER ASSEMBLY	2
3	37-0027	COLLECTION CELL FEED THRU INSULATOR	1
4	37-0026	IONIZER FEED THRU INSULATOR	1
5	36-0014	CELL/IONIZER INSULATOR SPRING	2
6	36-0077	GROUND SPRING	4
7	30-0387	COLLECTION CELL CONTACT SCREW	3
8	30-0223	IONIZER CONTACT NUT	3
9	30-0120	IONIZER CONTACT SCREW	3
10	36-0016	IONIZER CONTACT SPRING	1
11	42-0082	PUSH TO TEST BUTTON	2
12	36-0009	COLLECTION CELL CONTACT SPRING	1

DCN CONFIGURATION SHOWN

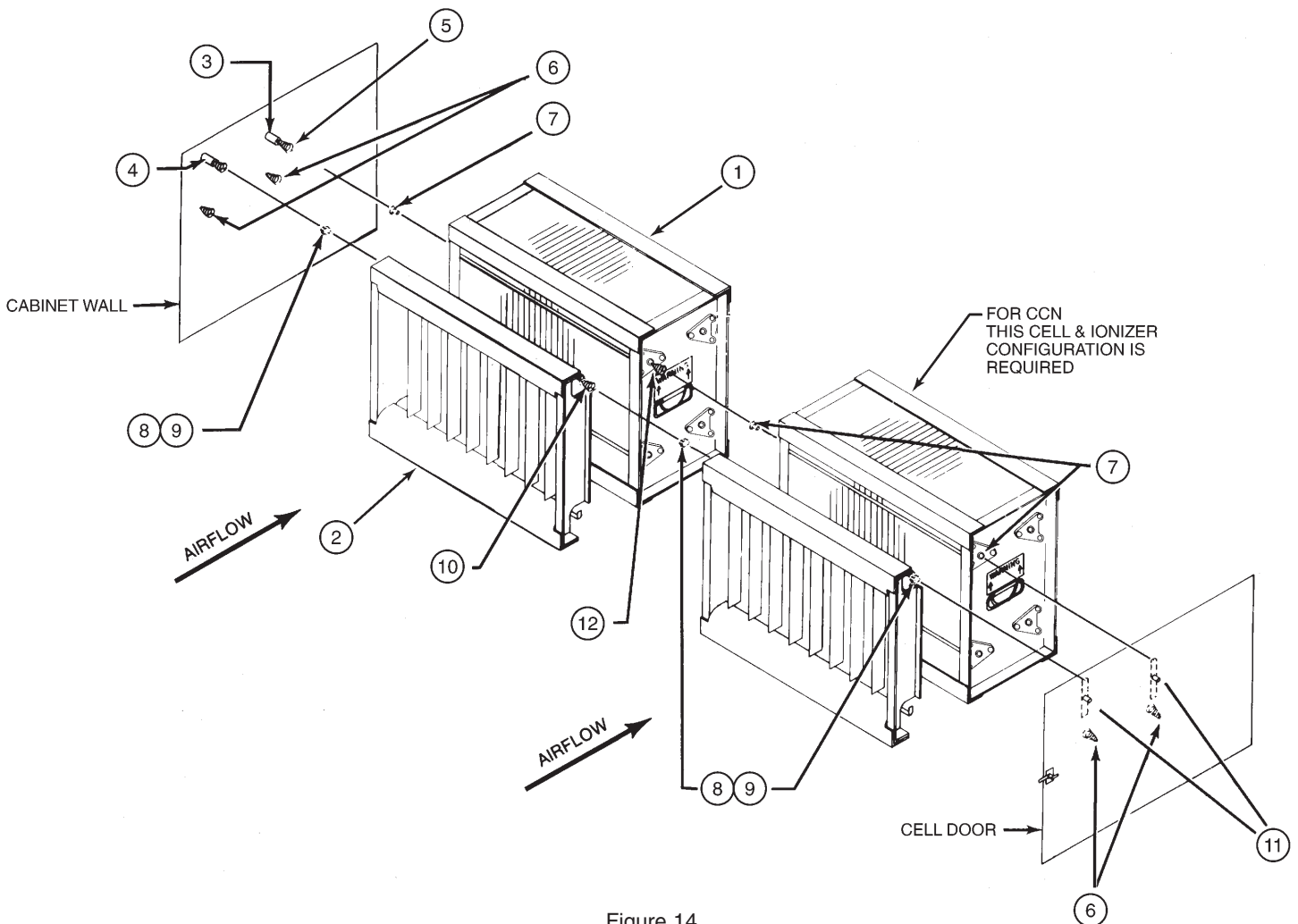


Figure 14  
Properly Aligned SE Assembly

**SMOKEETER® PARTS LIST**

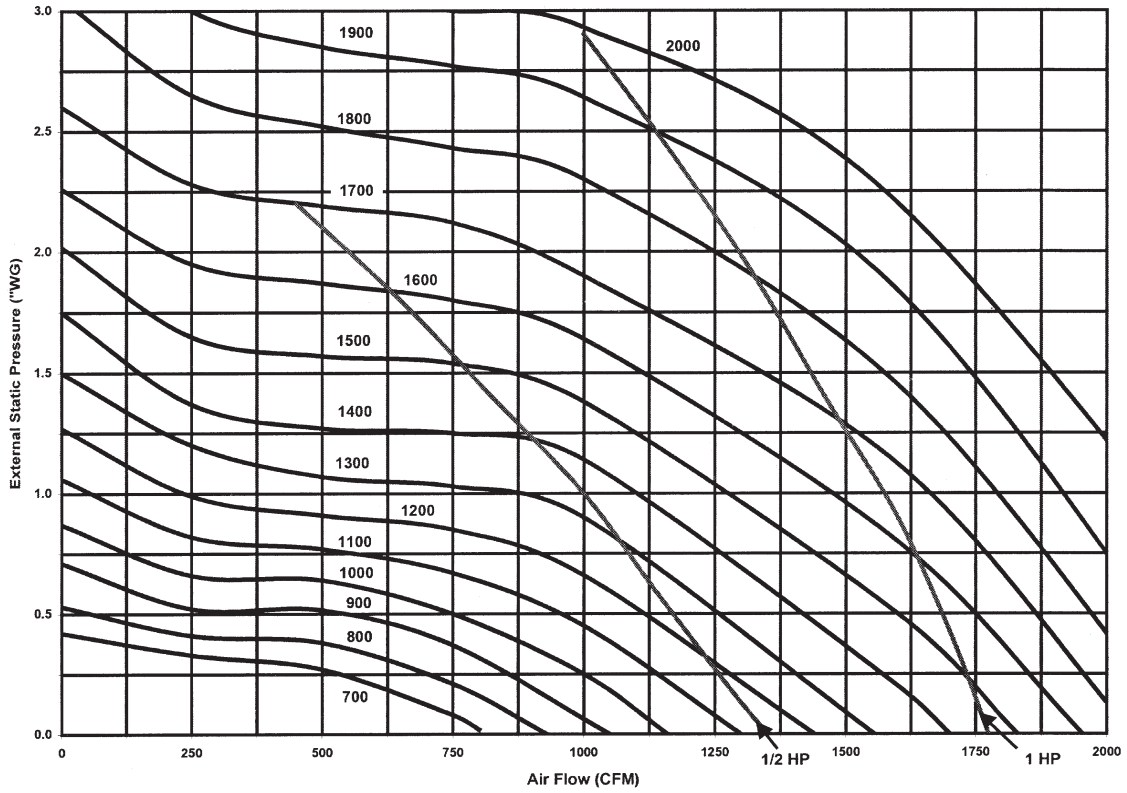
<b>COMPONENT DESCRIPTION</b>	<b>PART NUMBER</b>
POWER SUPPLY - POSITIVE (UL RECOGNIZED)	21-1216
GREEN 12 VDC LED TYPE INDICATOR LIGHT W/TERMINALS	02-10561-G
LIMIT SWITCH, CABINET DOOR INTERLOCK	20-0005
GASKET, EDGE (BUNA-N)	42-0168
BLOWER-BELT DRIVE 3/4" SGL 9-7 – CCN	32-0059
BLOWER-BELT DRIVE 3/4" DBL 9-7 – DCN	32-0036
MOTOR-1/2HP, 115-230/1/60	22-0001
MOTOR-1HP, 115-230/1/60	22-0041
BELTS	BASED ON ORDER
PULLEYS	BASED ON ORDER
COLLECTION CELL GPN	02-2339-S
IONIZER ASSY-9 WIRE	02-0037-S
<b>OPTIONAL MIST-STOP FILTERS</b>	
FILTER, COALESCING TYPE, 2" FOR CCN	33-10071-0001
FILTER, ALUMINUM MESH, 2" FOR CCN	33-10072-0001
FILTER, COALESCING TYPE, 2" FOR DCN & QCN	33-10071-0002
FILTER, ALUMINUM MESH, 2" FOR DCN & QCN	33-10072-0002



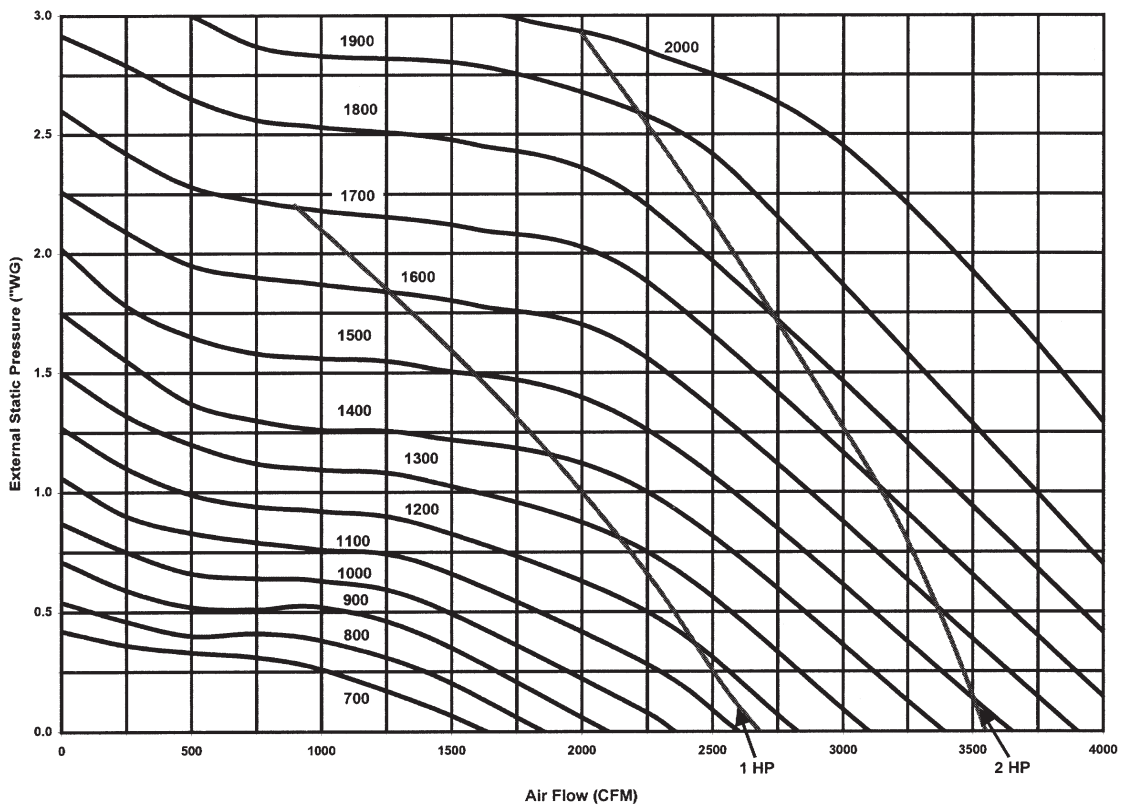
APPENDIX A

SE SERIES  
AIRFLOW CURVES

CCN



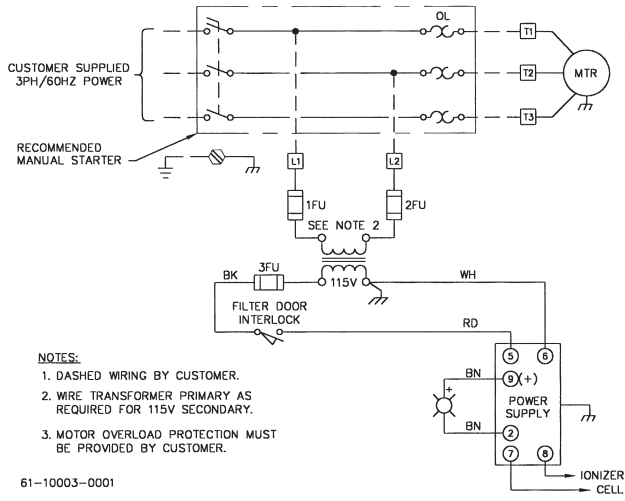
DCN



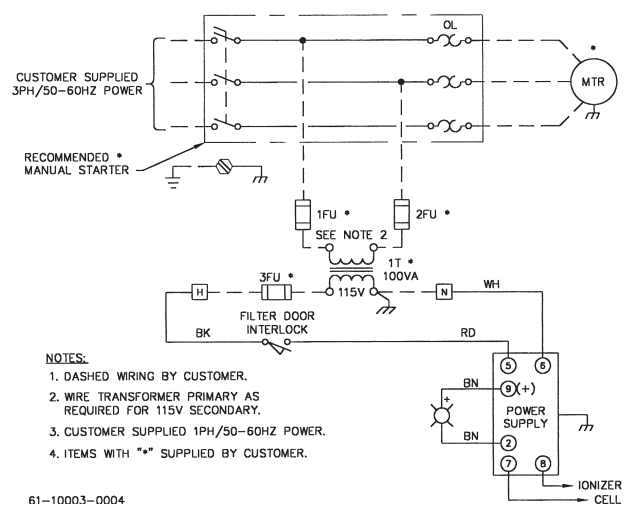
**APPENDIX B**

**WIRING DIAGRAMS**

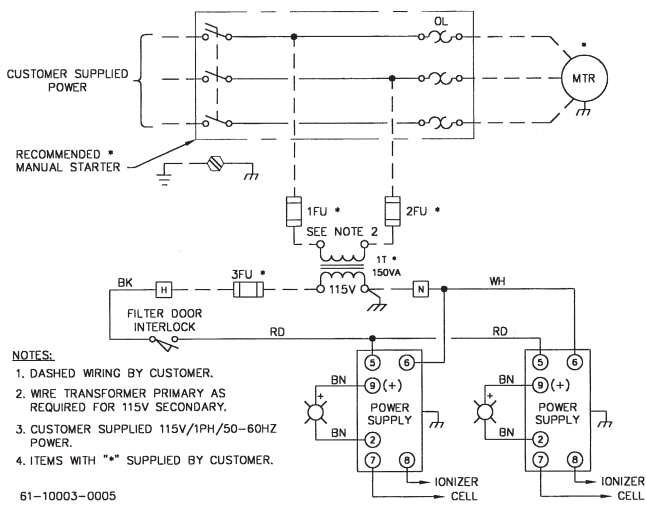
**CCN-EAB, DCN-EAB, DCN-EAD**



**SE-CCN-XB, SE-DCN-XB**



**QCN-XB**



This page intentionally left blank

