Owner's Manual

Air Handling System for the Isolation Cubicle

- *Built-in air handling/filtering system*
- *Regulates number of air changes per hour*
- *Maintains positive or negative air pressure*
- *Intake & exhaust HEPA filters & pre-filters*

SSCI
Wheeling, IL (800) 323 7366

Form No. 702756 08/07

Inquiries should be addressed to **Suburban Surgical Co., Inc.**
Wheeling, Illinois 60090, USA

Table of Contents

Directory of Graphics

Comments

Chapter 1 - General Information

Introduction

SSCI's Air Handling System is designed to be used in conjunction with the company's Stainless Steel Isolation Cubicles. When combined, these units provide research facilities with a system for environmental control and protection. Environmental control is provided in three ways: (1) by regulating the number of air changes per hour required within the cubicle; (2) by maintaining either a positive or negative differential pressure between the cubicle and the rest of the room; and (3) by filtering the supply of intake and exhaust air through HEPA filters.

The Air Handling System is designed to obtain a supply of air from the main part of the room. HEPA filters are installed to filter the supply air coming in to the cubicle, and the animal environment exhaust air exiting from the cubicle.

Pre-filters are installed in the air intake and exhaust registers for initial filtration, before the air passes through the HEPA filters.

About this Manual

Every attempt has been made to insure that the information in this manual is correct and complete. SSCI, however, always welcomes our customer's suggestions for improvements to our products and associated publications.

Information & Safety Notices

Throughout this manual you will find text under the headings **Note:** and ***CAUTION:***.

Notes

Under the **Note:** headings, you will be given additional information pertinent to the subject discussed in that paragraph or step.

> **Example:**
>
> Remove both blower boxes from the frame to make the frame easier to handle. **Note:** Do not remove the electrical box from the frame.

CAUTIONS

Under the ***CAUTION:*** headings, you will be alerted to potentially hazardous conditions which, if ignored or mishandled, could result in injury to yourself or damage to the equipment.

> **Example:**
>
> ***CAUTION:*** **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

SSCI Contact Information

Contact SSCI Customer Service by mail, telephone, or fax. The department is available from 8:30am to 5:00pm, Central Time, Monday through Friday. Closed holidays.

Address: Suburban Surgical Co., Inc.
275 Twelfth Street
Wheeling, Illinois 60090

Telephone: Illinois - (847) 537-9320, ext. 3518
Toll Free - (800) 323-7366

Fax: (847) 537-9061

Web: www.subsurg.com

Safety

Observe the following precautions when working with the Isolation Cubicle Air Handling System.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **Perform the shutdown procedure and, if possible, unplug the power cord before working on any component of the electrical system. Refer to *Shutdown Procedure* on *Page 37.***

Working with the Air Handling System for the Isolation Cubicle is not difficult, however, some components are heavy and/or awkward to handle. In such cases, the following caution will be displayed:

CAUTION: **We recommend that this procedure be done by at least two people.**

Care & Cleaning of Stainless Steel

Introduction

Stainless steel is steel alloyed with chromium to make it highly resistant to stain, rust, and corrosion. **Note:** This does NOT mean that stainless steel will *never* rust or corrode. Science has not yet developed a steel which is completely stainless or corrosion PROOF.

The type of stainless steel and finish selected by SSCI for this product is the best available for the intended use.

Cleaning & Cleansers

The basic rule of thumb is to use the mildest cleaning agent that will do the job effectively. After cleaning, always rinse thoroughly with clear water, and dry completely. Frequent cleaning will prolong the service life of stainless steel equipment, and will help maintain a bright, pleasing appearance.

Ordinary deposits of waste and fluids can usually be removed with soap and water. More stubborn deposits or tightly adhering debris may require harder scrubbing and possibly the use of commercial cleaning products acceptable for use on metal surfaces. When using any cleaning agent, rub in the direction of the polish lines or "grain" of the metal. For high luster finishes, use clean soft cloths or pads.

If especially rough cleaning is necessary, use "stainless steel" wool, nylon, or plastic scrubbers. Test these scrubbers in an inconspicuous area first to be sure they do not mar or scratch the stainless steel finish.

Minor scale build-up and some hard water spotting may be removed by washing with vinegar, followed by a neutralizing rinse with clear water, and a thorough drying with a soft cloth. For heavy deposits of scale, 5% oxalic acid (use warm), 5-15% sulfamic acid, or 5-10% phosphoric acid may be used. Always follow with a neutralizing rinse of clean water and a thorough drying.

Deodorizing Agents, Disinfectants, & Sanitizers

The large selection of brands and combinations of chemicals available for deodorizing, disinfecting, and sanitizing is staggering. Select one or more agents for use in your facility only after weighing all the benefits claimed by each product. Too often this choice is made without adequate consideration of the effects these agents may produce on equipment or furnishings.

CAUTION: **Before selecting a chemical to employ in your facility, review label statements regarding use with metals (stainless steel). Always consult the chemical supplier if there are any doubts.**

Avoid prolonged use of chlorides (such as chlorine bleach), bromides, iodides, and thiocyanates on stainless steel surfaces as these chemicals will cause pitting, corrosion, and metal discoloration. Allowing salty solutions to evaporate and dry on stainless steel may also contribute to corrosive conditions.

In summary, select chemical deodorizers, disinfectants, and/or sanitizers only after weighing all possible benefits and known adverse effects.

Effect on Warranty

The warranty for this product is void if the care and cleaning instructions provided in this manual are not followed.

Cleaning Requirements

Clean the Isolation Cubicle exactly in accordance with the cleaning instructions provided in this manual. *Failure to follow these instructions can void your warranty.*

Warranty

Suburban Surgical Company, Inc. warrants the original purchaser that our products are of the highest standards in material and workmanship. Our stainless steel components are guaranteed to last a lifetime assuming they are used as intended, properly maintained and cared for. Mechanical, electrical, electronic, hydraulic, and any product's devices carry a one year warranty.

Items purchased by Suburban Surgical Company, Inc. from other manufacturers and incorporated into our equipment are covered by the respective manufacturer's warranties.

Warranties will not apply if it is determined by Suburban Surgical Company, Inc. that the equipment became defective due to an accident, misuse, abuse, improper maintenance, or alteration. Warranty freight charges are covered for the first year only.

Comments:

Chapter 2 - Installation

Unpacking & Inspection

CAUTION: **We recommend that this procedure be done by at least two people.**

If the shipping containers appear damaged in any way, contact the shipping company immediately. Save all damaged packing materials to assist in proving liability for damage.

Carefully inspect the Air Handling System component parts while you unpack them. If damage is noted, or if parts appear to be missing, call SSCI Customer Service at (800) 323-7366. Refer to the packing list for a list of parts included in the shipment.

Installation Information

Overview

These instructions provide installation procedures for mounting the Air Handling System into an SSCI Isolation Cubicle. Installation of the system into the cubicle should be done as an integral part of the installation of the cubicle. Installing the system into an already erected cubicle will require disassembly of most of the unit.

Layout Drawings

For each installation, SSCI provides complete Layout Drawings that specify mounting dimensions and other important installation details. You should become thoroughly familiar with these drawings before starting the installation.

Tools & Supplies Required

You will need the following tools and supplies to install the Air Handling System in your SSCI Isolation Cubicle:

- Phillips screwdriver
- Flat-blade screwdriver
- Wrench set, non-metric
- 5/16 in. nut driver
- 7/16 in. nut driver
- Stepladder
- Carpenter's level
- Electric drill
- Pencil or felt-tip marker
- Drill bit suitable to the intended anchors
- Anchors suitable to the wall material (12)
- Mounting hardware (bolts, washers, etc.)
- Standard 2 x 4s (2)
- Adhesive for PVC pipe

Installation Sequence

The normal construction sequence followed when installing the Air Handling System into the SSCI Isolation Cubicle is as follows. Pay close attention to this construction sequence to avoid the need to go back and disassemble part of the cubicle to install components not installed in the correct order. In the list, procedures not followed by page numbers are found in manual 702743.

1. Erecting the columns
2. Mounting the columns to the walls
3. Installing the counterweights
4. Installing the column interior covers
5. Disassembling the shipped Air Handling System - *Page 9*
6. Installing the Air Handling System base frame - *Page 9*
7. Installing the blower boxes - *Page 11*
8. Installing the cable plate & air sensor lines - *Page 13*
9. Installing the inner panel - *Page 15*
10. Installing the rear door support rail - *Page 16*
11. Assembling & installing the intake air duct - *Page 17*
12. Mounting the polyethylene panels - *Page 19*
13. Mounting the flexible ducts - *Page 20*
14. Installing the center ceiling panel - *Page 22*
15. Installing the right ceiling panel - *Page 24*
16. Installing the left ceiling panel - *Page 25*
17. Installing the air intake piping - *Page 26*
18. Installing the rear door
19. Installing the center door(s)
20. Installing the front door
21. Mounting the door seals
22. Installing the door latches
23. Installing the front panel - *Page 28*
24. Miscellany
25. Installing the vertical sealing strips
26. Installing the horizontal sealing strips
27. Sealing around the base of the column
28. Start-up - *Page 30*

References to the Isolation Cubicle Owner's Manual

Occasionally, in the installation procedures given here, you will be referred to the SSCI *Isolation Cubicle Owner's Manual, 702743*. You received a copy of that manual with your cubicle. If you do not have this manual, contact your SSCI Customer Service Representative at 800-323-7366 and request a copy.

Installing the Air Handling System into the Isolation Cubicle

The following pages detail the installation of the SSCI Isolation Cubicle and the Air Handling System. These instructions are suitable for both 3-door and 4-door cubicles.

IMPORTANT - INSTALLATION SEQUENCE INFORMATION
Begin the installation of the Isolation Cubicle by referring to the *Isolation Cubicle Owner's Manual, 702743.* In *Chapter 2, Installation*, start on *Page 9* and erect the columns. Continue on through *Page 15* including *Installing the Interior Column Covers.* At that point, refer to *Disassembling the Shipped Air Handling System* below and follow these instructions until told to return to the first manual.

Disassembling the Shipped Air Handling System

The Air Handling System is loosely assembled at the factory to create an easily shipped package. This assembly, however, is large and bulky and impractical to install as a single unit. Disassemble all the components except the electrical box (Figure 3) from the frame.

Installing the Air Handling System Base Frame

Overview

The Air Handling System base frame supports the system components above the isolation chamber. The base frame mounts at three points on each side wall, six points on the back wall, and one point at the rear of each column

Installation

You will temporarily mount the base frame to the columns and level it to locate the frame mounting holes in the side and rear walls.

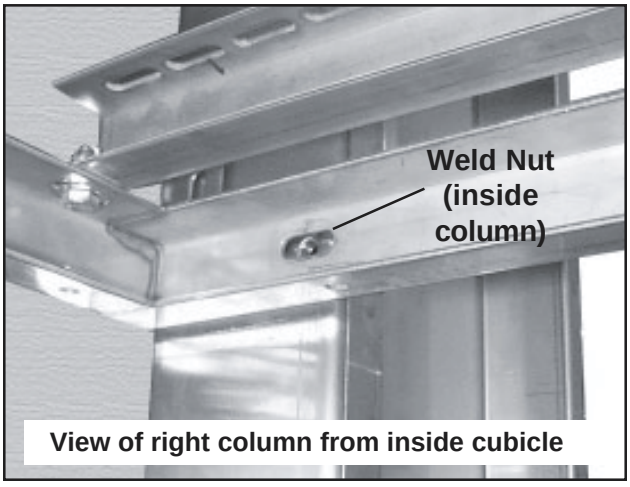


Figure 1. Weld Nut Inside Column

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

1. Find the weld nut on the inside surface of each column (Figure 1).

2. Hold the base frame in position inside the cubicle and mount it to the two weld nuts you found in *Step 1*.

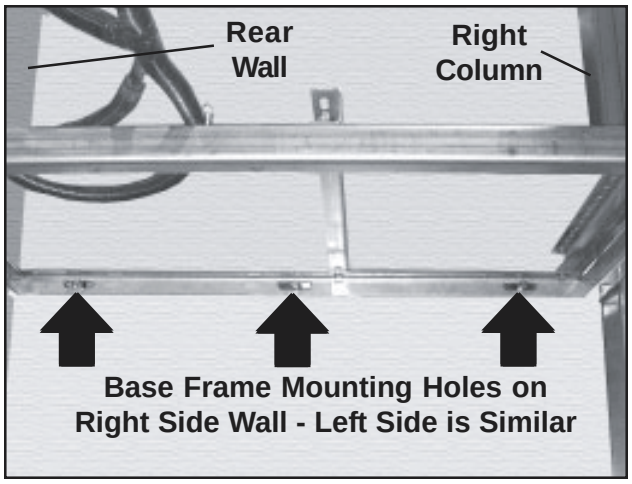


Figure 2. Base Frame Mounting Holes in Side Wall

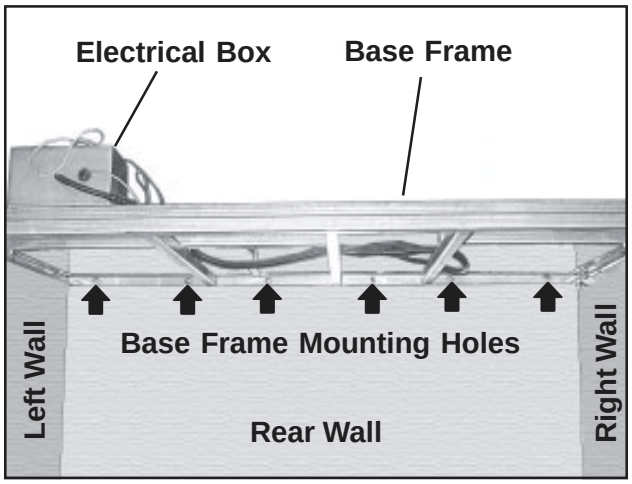


Figure 3. Base Frame Mounting Holes in Rear Wall

3. With a carpenter's level, level the base frame inside the cubicle, front-to-back.

4. Being careful not to disturb the level, support the rear of the frame against the cubicle rear wall with two 2 x 4s.

5. Mark the locations of the twelve mounting holes on the side and rear walls of the cubicle (Figures 2 & 3).

6. Remove the 2 x 4s and the base frame from the cubicle.

7. Drill all twelve mounting holes with a bit suitable for the anchors and the type of wall construction. Make sure you drill the holes straight in and not at an angle.

8. Insert a suitable anchor into each of the twelve mounting holes.

9. Lift the base frame into place in the cubicle.

10. Insert a screw into the weld nut in each column (Figure 1). **Note:** Leave these two screws slightly loose for later installation of the rear door support rail.

11. Secure the frame to the rear and side walls with mounting screws into the twelve anchors.

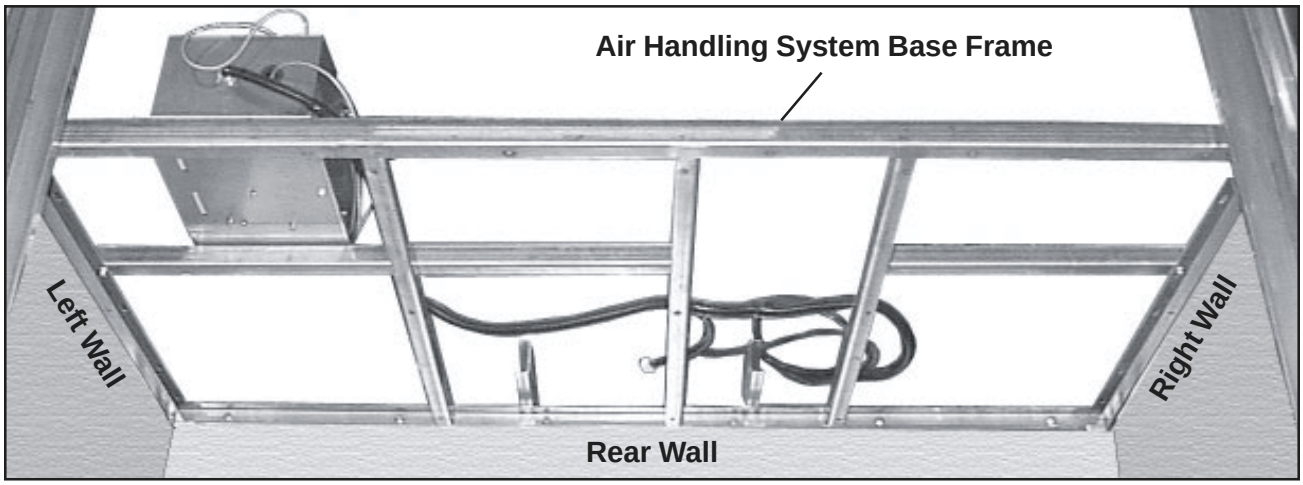


Figure 4. Air Handling System Base Frame Mounted in Cubicle

Installing the Blower Boxes

Overview

There are two blower boxes in the Air Handling System: one for intake, and one for exhaust(Figure 5).

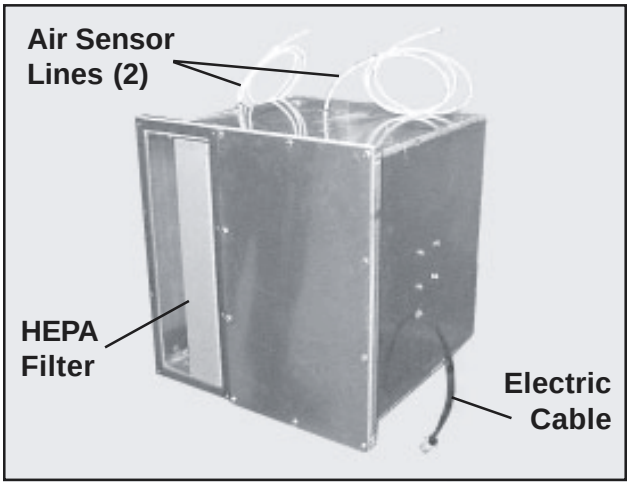


Figure 5. Typical Blower Box

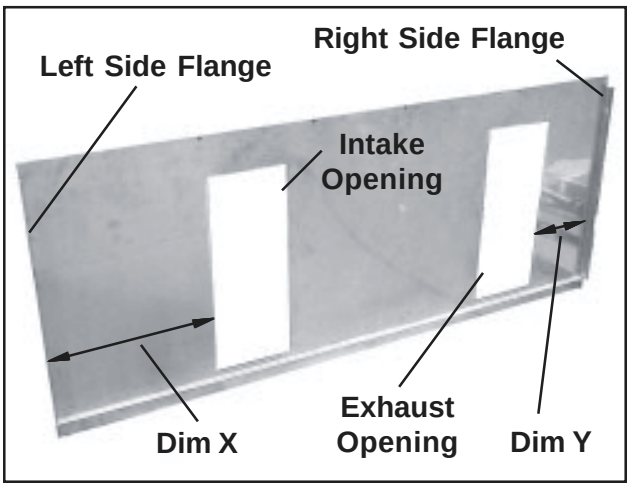


Figure 6. Typical Inner Panel

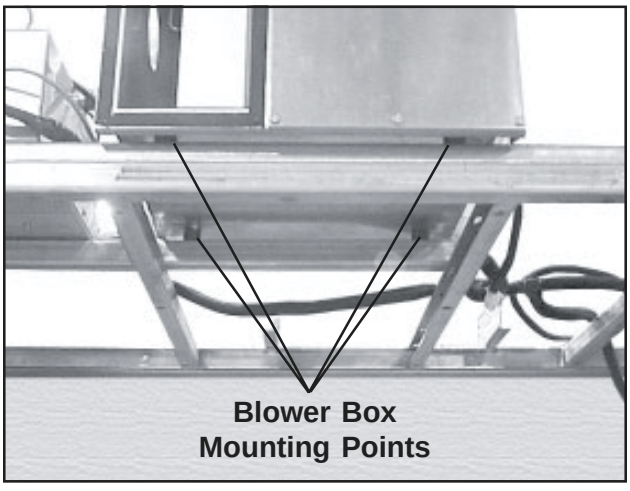


Figure 7. Blower Box On Base Frame

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

Installation

1. Locate the inner panel (not yet installed) (Figure 6).

2. On the inner panel, measure the two dimensions shown in Figure 6:
   - **Dim X** - the distance from the left side flange to the left edge of the intake opening.
   - **Dim Y** - the distance from the right side flange to the right edge of the exhaust opening.

3. Take one blower box and place it on the base frame so that its left edge is approximately **Dim X** from where the left flange will mount.

Note: Leave the blower box mounting bolts loose for now - you will adjust the box positions after installing the inner panel.

4. Loosely, secure this box to the base frame with four screws and washers (Figure 7).

5. Take the remaining blower box and place it on the base frame so that its right edge is approximately **Dim Y** from where the right flange will mount.

6. Loosely, secure this box to the base frame with four screws and washers.

7. Connect two of the three cables from the electrical box to the blower box cables (Figure 8) as follows:
   - Short cable - Connect to intake blower box cable.
   - Medium cable - Connect to exhaust blower box cable.
   - Long cable - Leave unattached for now - you will connect it behind front panel later in the installation.

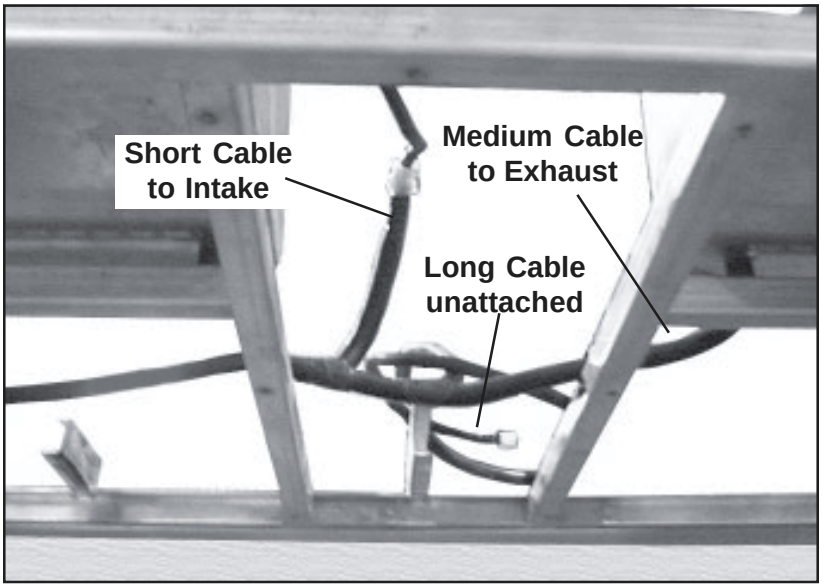


Figure 8. Blower Box Cable Connections

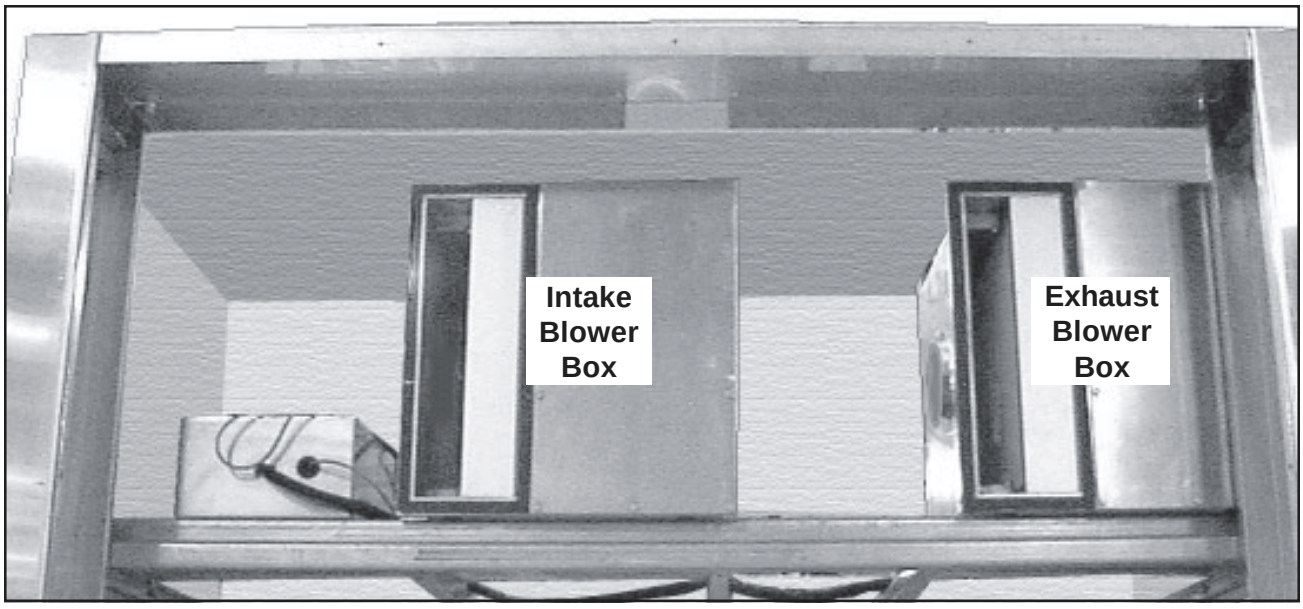


Figure 9. Front View of Cubicle with Blower Boxes Installed

Installing the Cable Plate & Air Sensor Lines

Overview

The cable plate guides electrical cables and air sensor lines over the inner panel and protects them from chaffing or other damage.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

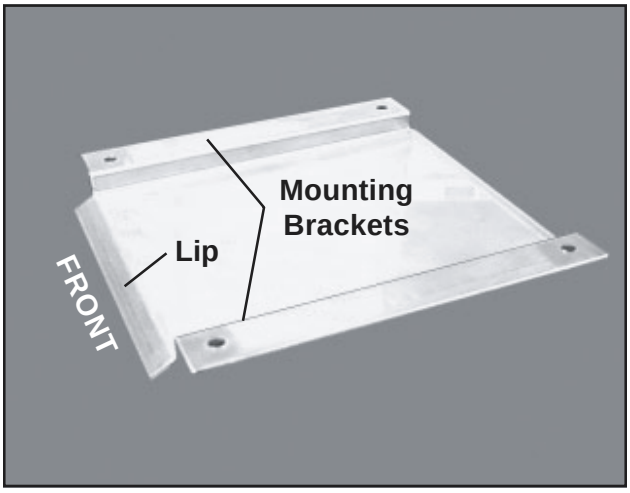


Figure 10. Cable Plate

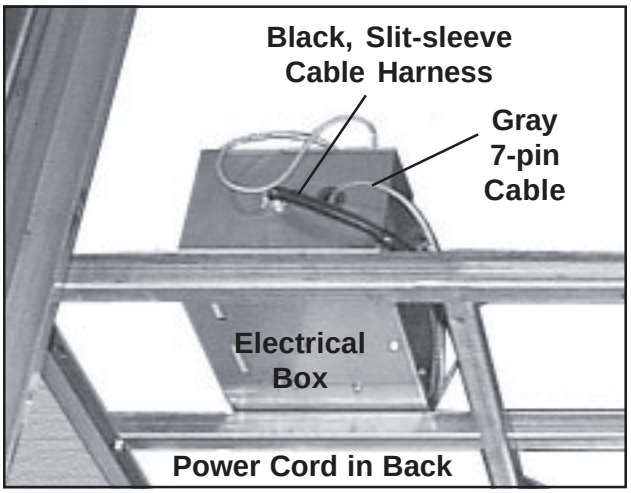


Figure 11. Electrical Box Cables

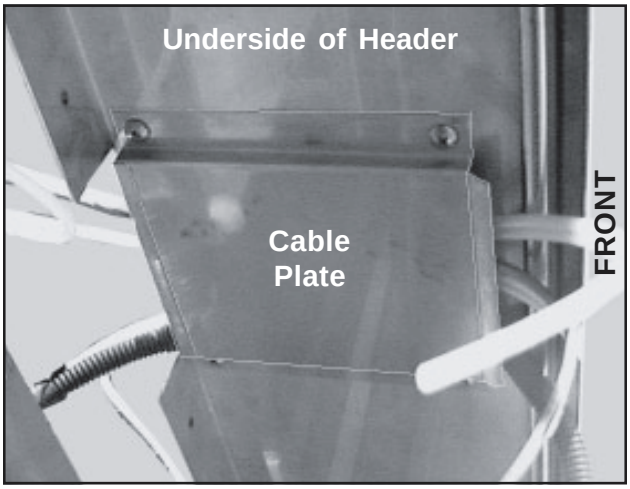


Figure 12. Cable Plate Mounted

Installation

1. Hold the cable plate so that the lip faces the front and the mounting brackets are on top (Figure 10).

2. Pass the black, slit-sleeve (long) cable and the gray cable from the electrical box (Figure 11) over the cable plate between the mounting brackets. **Note:** The ends of the cables should exit toward the front.

3. With a Phillips screwdriver, mount the cable plate to the underside of the header (Figure 12) with four screws. Make sure that the lip faces the front.

Note: The white nylon air sensor lines are numbered 1 through 7 with small white paper bands affixed to each line.

4. Pass the two air sensor lines from the top of each blower box (Figure 5) through the cable plate from rear to front. The lines are numbered as follows:
   - From the intake blower box - Lines 1 and 2
   - From the exhaust blower box - Lines 3 and 4

5. Find white nylon air sensor lines 5, 6, and 7 which are shipped as part of the package. Pass these three lines through the cable plate from rear to front. Don't worry about connecting these lines at this time - just leave them hanging loosely from the cable plate.

Installing the Inner Panel

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

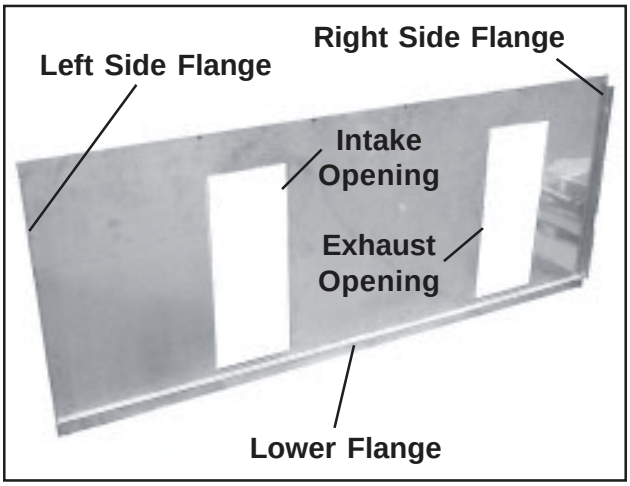


Figure 13. Front View of Inner Panel

Installation

1. Orient the inner panel as shown in Figure 13 with the side and lower flanges pointed to the front, and the exhaust opening on the right.

2. With a Phillips screwdriver, mount the top edge of the inner panel to the rear, inside surface of the header (Figure 14) with four screws (supplied).

3. Mount the left flange of the inner panel to the left column with two screws as shown in Figure 14.

4. Mount the right flange of the inner panel to the right column with two screws.

5. Adjust the blower boxes so the filter openings neatly align with the openings in the inner panel, and tighten the blower box mounting screws (Figure 6).

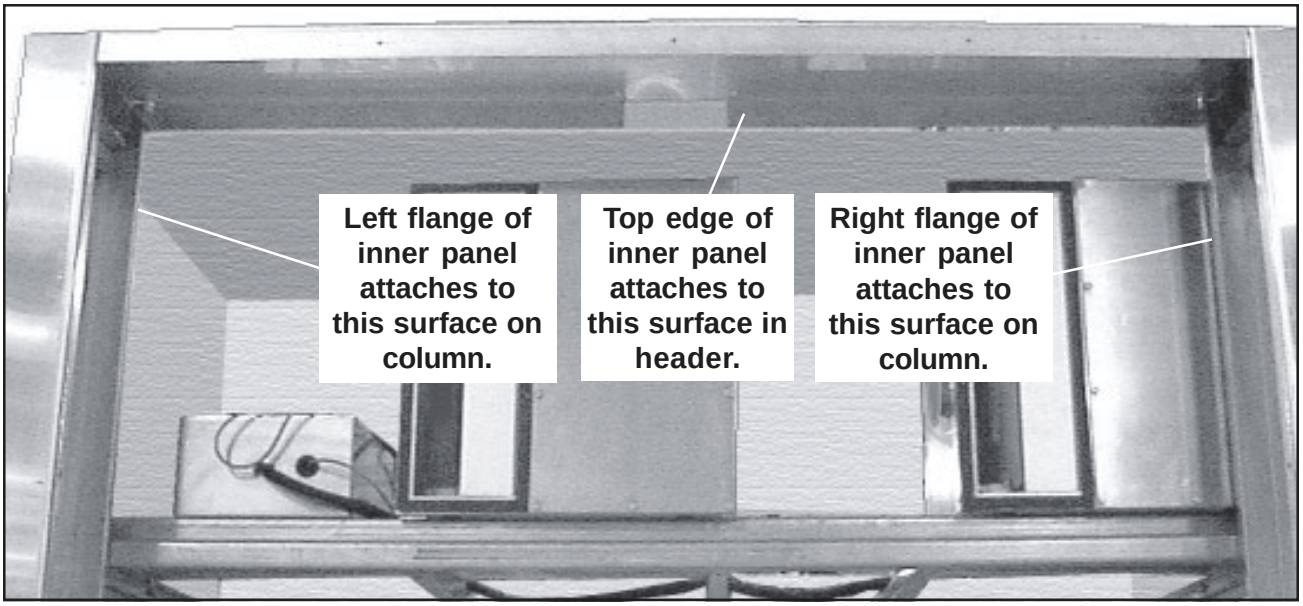


Figure 14. Inner Panel Mounting Points

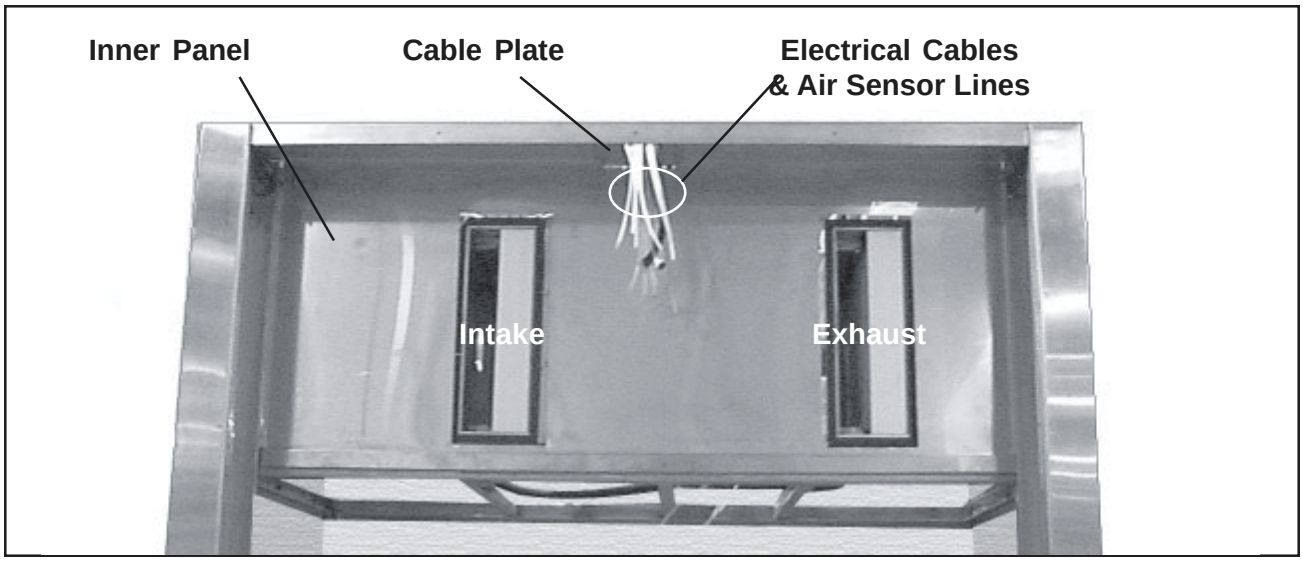


Figure 15. Front View of Cubicle with Inner Panel Installed

Installing the Rear Door Support Rail

Overview

Install the rear door support rail (Figure 16) loosely at this time. Later in the installation, you will adjust and tighten it.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Installation

1. Slide the ends of the rear door support rail upward and into place between the rear of both columns and the base frame (Figure 17).

2. Loosely fasten the rail in place with two flat washers and hex screws. Leave the screws finger-tight for now - you will adjust the rail and tighten the screws later.

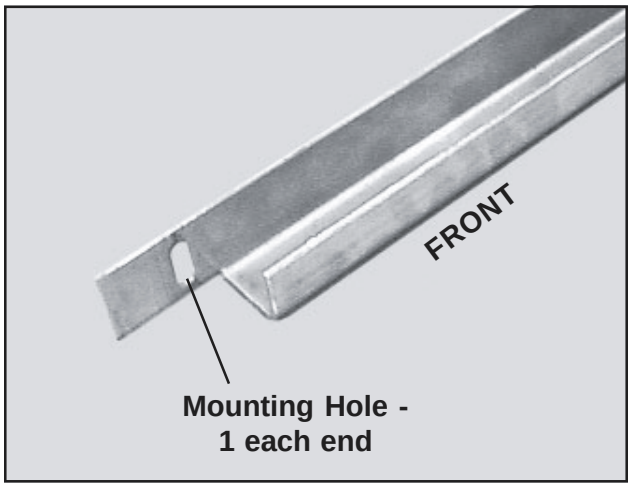


Figure 16. Rear Door Support Rail

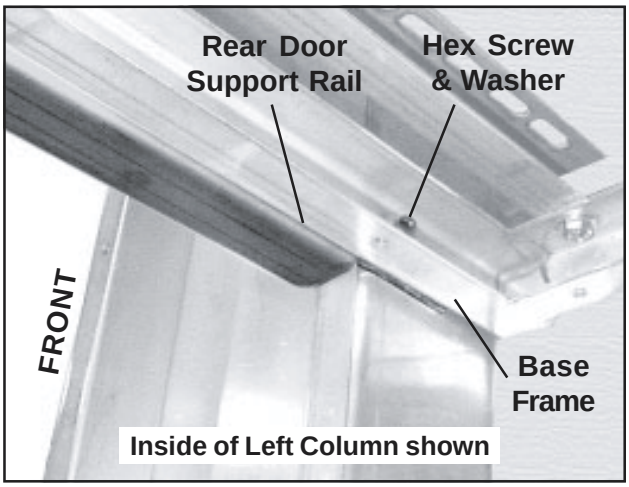


Figure 17. Rear Door Support Rail Mounted in Place

Assembling & Installing the Intake Air Duct

Overview

The intake air duct (Figure 18) conducts air from the intake blower box to the interior of the Isolation Cubicle. The assembly is symmetrical and the pipes and fittings on each side are identical. The overall width of the assembly depends on the dimensions of the cubicle.

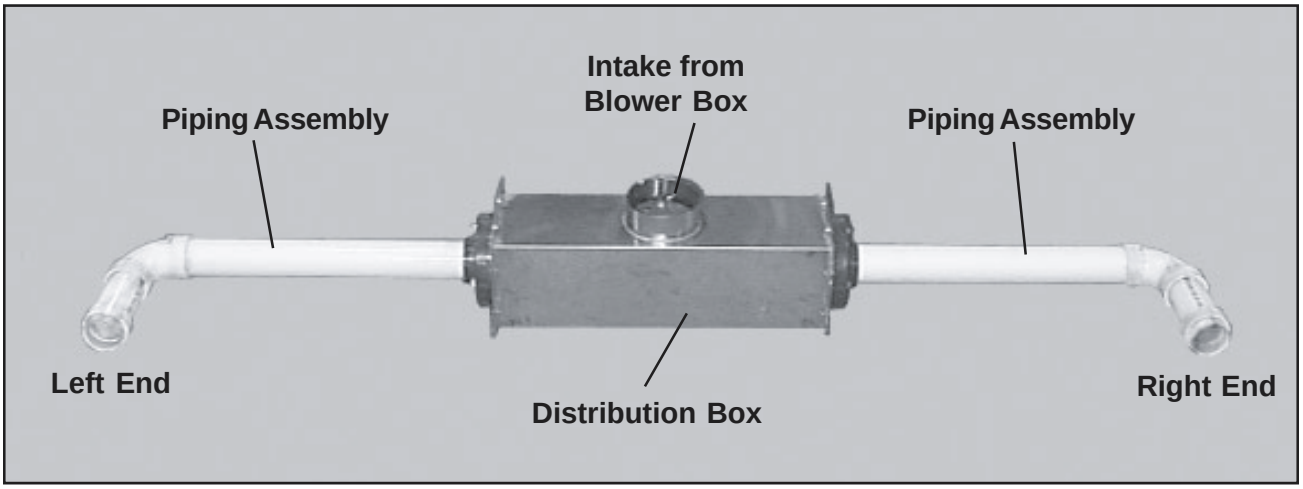


Figure 18. Intake Air Duct (assembled)

Assembly

The intake air duct must be put together in the field; it is not pre-assembled at the factory. Sized PVC piping, elbow fittings, and threaded couplings are supplied with the cubicle. Connect the pipes and fittings with a high-quality adhesive made for PVC pipe. Be aware that this adhesive often "seizes" very quickly after the parts are joined and you may not have much time to make final adjustments. Assemble the duct as follows:

1. Find the short piece of 2 in. PVC pipe with the threaded coupling bonded to one end (Figure 19).

2. Bond an elbow fitting to the empty end of this 2 in. pipe.

3. Bond a long piece of 2 in. OD PVC pipe to the other end of the elbow fitting.

4. Repeat *Steps 1* through *3* above and assemble a second, identical piping assembly.

Note: Refer to Figure 18 and note the orientation of the piping assemblies to the distribution box. The short lengths of pipe (with the male threaded couplings) MUST be at 90° angles to the intake from the blower box. In the final assembly, the intake will be horizontal and the threaded couplings should point straight down.

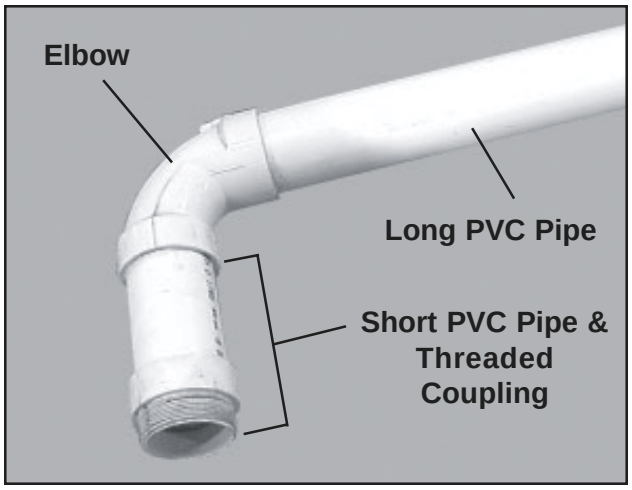


Figure 19. Typical Piping Assembly

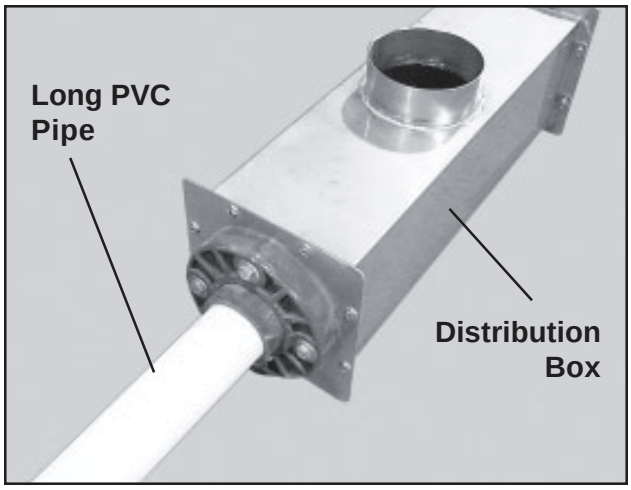


Figure 20. Long PVC Pipe Connected to Distribution Box

5. Referring to the *Note* on the bottom of *Page 17*, bond one of the piping assemblies to one side of the distribution box (Figure 20).

6. Bond the second piping assembly to the other side of the distribution box.

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

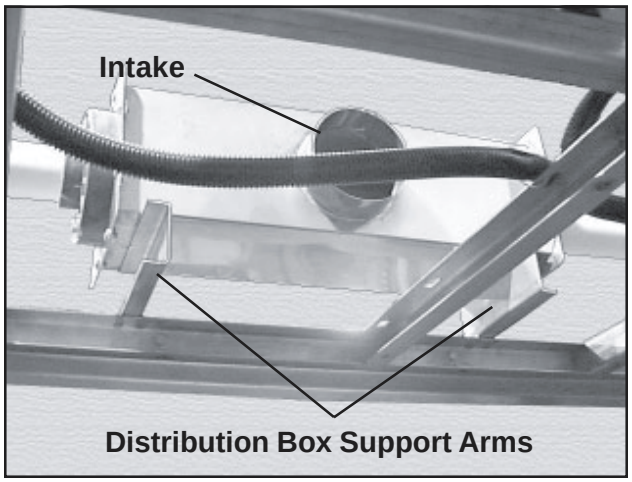


Figure 21. Intake Air Duct Set in Place

Installation

Rest the assembled intake air duct on the distribution box support arms of the base frame (Figure 21). The intake should point toward the intake blower box and the threaded couplings should point straight down. Note that there is no connection between the distribution box and the support arms; the intake air duct will be held securely in place later in the installation when the intake air pipes are mounted in place.

Mounting the Polyethylene Panels

Overview

In each blower box, the access opening for the HEPA filter will be covered by a polyethylene panel secured by eight screws/washers (Figure 22). The two polyethylene panels are identical and either panel can be used on either blower box.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

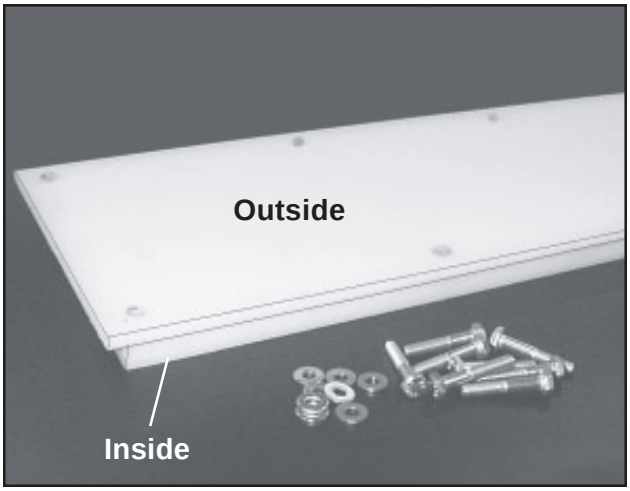


Figure 22. Polyethylene Panel & Mounting Hardware

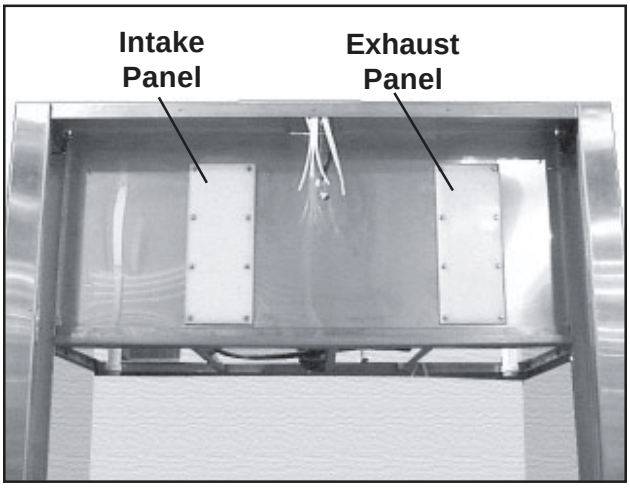


Figure 23. Polyethylene Panels Mounted in Place

Installation

1. Refer to *Changing a HEPA Filter* on *Page 39* and make sure there is a filter in each blower box. If not use the instructions in the above reference to install a filter in each box now.

2. Place a polyethylene panel into the intake blower box with the recessed side toward the HEPA filter.

Note: Be careful as you tighten the eight panel screws. They must be screwed down tight - enough to compress the gasket behind the panel. Be aware, however, that the blower box is aluminum and forcing the screws down too tight can damage the threads in the mounting holes.

3. With a 7/16 in. nut driver, secure the polyethylene panel in place with eight 1.5 in. long hex screws and washers (supplied).

4. Repeat *Steps 2* and *3* for the panel on the exhaust blower box.

Mounting the Flexible Ducts

Overview

A 14 in. long, 4.5 in. diameter flexible duct connects the intake blower box to the distribution box. A 6 in. long, 4.5 in. diameter flexible duct connects the exit port of the exhaust register to the exhaust blower box. A third 4.5 in diameter flexible duct connects to the output side of the exhaust blower box and conducts exhaust air to the room or outside, depending on the design of the air system.

Note: Length measurements of flexible ducts are only approximate because the ducts are expandable.

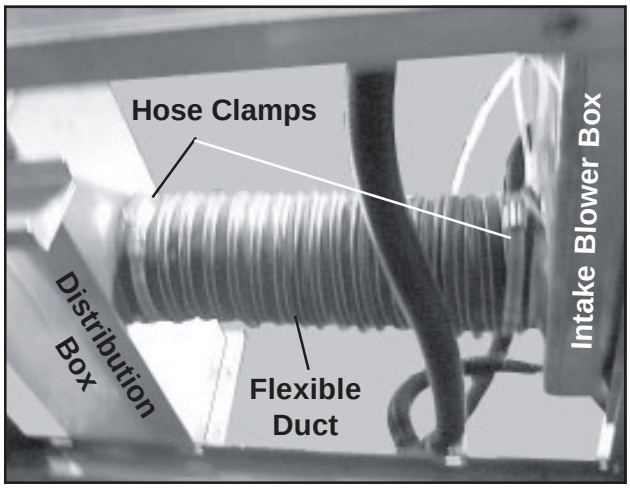


Figure 24. Intake Flexible Duct Mounted in Place

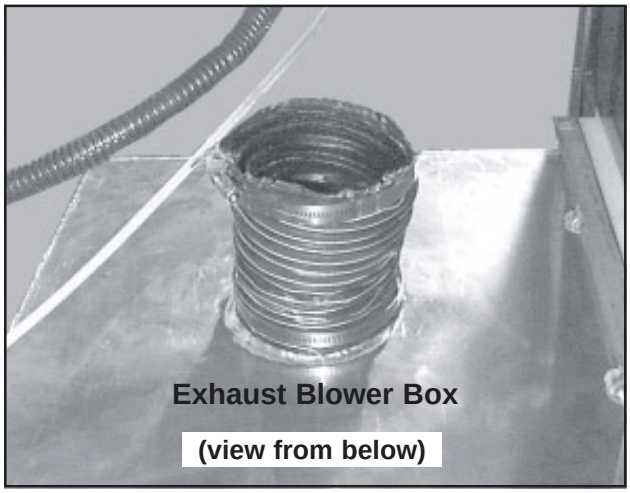


Figure 25. Exhaust Flexible Duct Mounted on Blower Box

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Installation - Intake Flexible Duct

1. Put two adjustable hose clamps on the intake flexible duct. **Note:** Orient the clamps so that the nuts will be easily accessible once the duct is in place.

2. Fit one end of the flexible duct over the port on the rear of the intake blower box and secure it with one of the hose clamps (Figure 24). Tighten the hose clamp with a 5/16 in. hex nut driver.

3. Fit the other end of the flexible duct over the port on the distribution box and secure it with the remaining hose clamp. Tighten the hose clamp with a 5/16 in. hex nut driver.

Installation - Exhaust Flexible Duct

4. Put two adjustable hose clamps on the intake flexible duct. **Note:** Orient the clamps so that the nuts will be easily accessible once the duct is in place.

5. Fit one end of the flexible duct over the port on the side of the exhaust blower box and secure it with one of the hose clamps (Figure 25). Tighten the hose clamp with a 5/16 in. hex nut driver.

6. Leave the other end of this flexible duct free for now; you will connect it later in the installation.

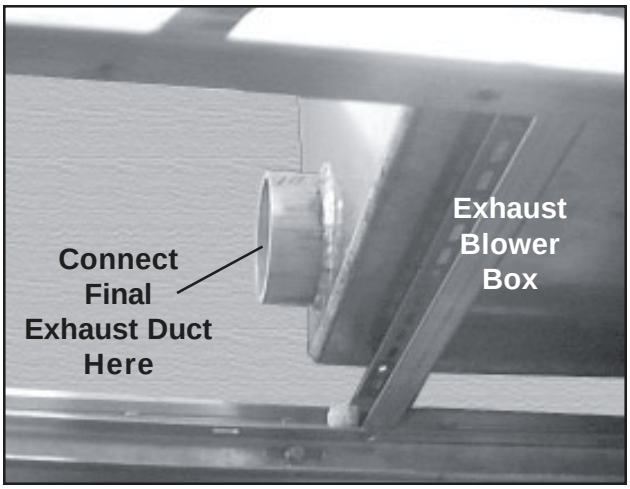


Figure 26. Final Exhaust Duct Connection

Installation - Final Exhaust Duct

7. Put two adjustable hose clamps on the intake flexible duct. **Note:** Orient the clamps so that the nuts will be easily accessible once the duct is in place.

8. Fit one end of the duct to the port on the rear of the exhaust blower box (Figure 26).

9. Connect the other end to the building air handling exhaust system outlet.

Installing the Center Ceiling Panel

Overview

Now you will install the center ceiling panel (Figure 27). The panel includes the exhaust register. A port in the register connects to the exhaust flexible duct to allow the passage of air from the cubicle to the exhaust blower box.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

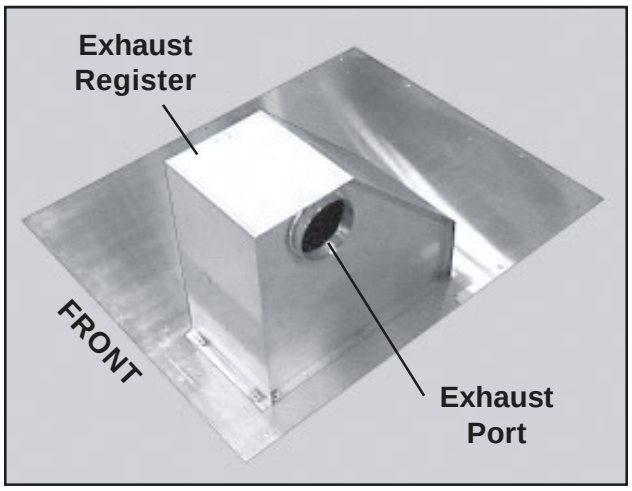


Figure 27. Center Ceiling Panel

Installation

1. Hold the center ceiling panel in place under the base frame as shown in Figure 28. While supporting the panel, slip the free end of the exhaust flexible duct (Figure 25) over the port in the exhaust register (Figure 27).

2. Secure the panel to the base frame with seven 1/2 in. Phillips screws into the holes in the front and rear frame members and the center crossbar (Figure 29). Leave the holes in the outer crossbars empty for now - you will install these screws when you mount the side ceiling panels.

3. Tighten the hose clamp on the register end of the flexible exhaust duct.

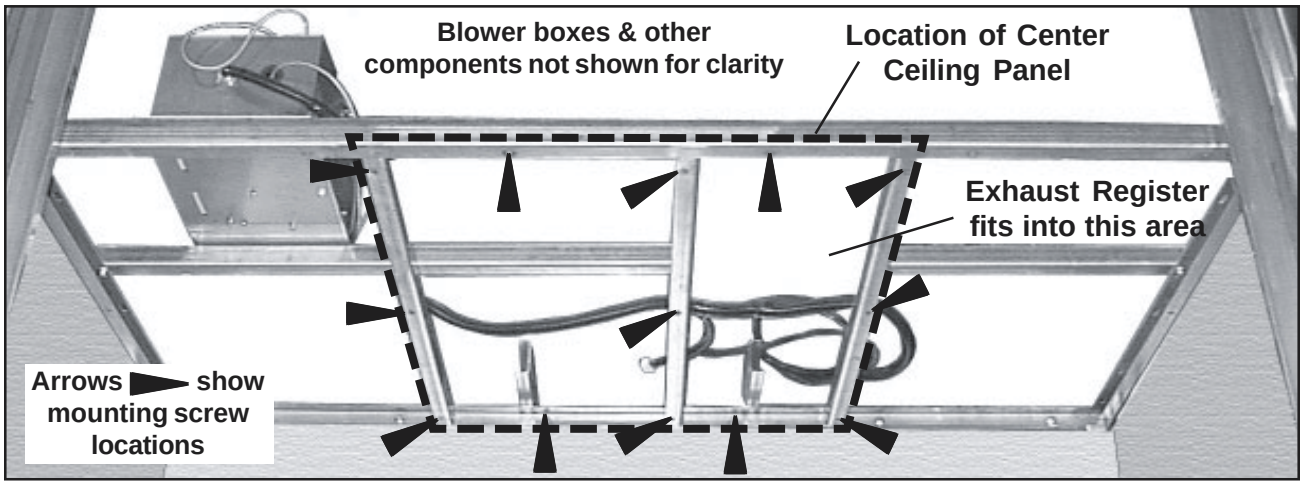


Figure 28. Mounting Location for Center Ceiling Panel

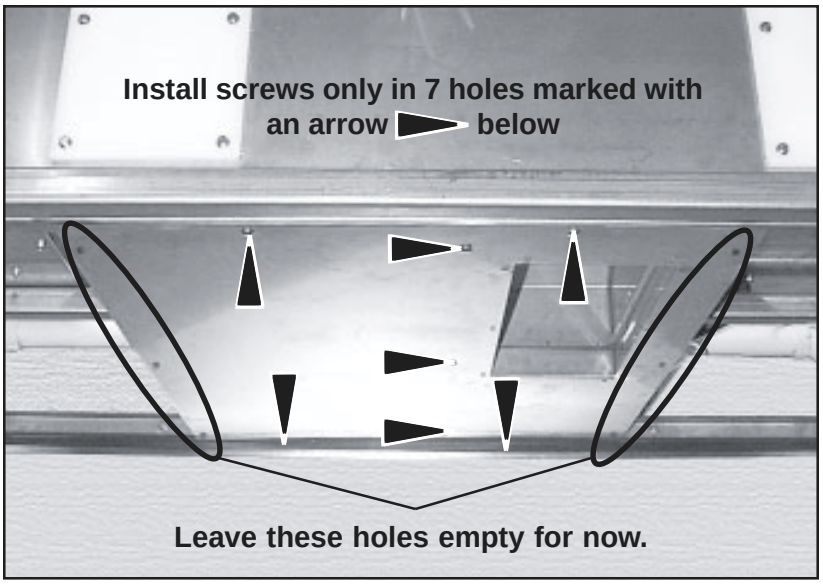


Figure 29. Central Ceiling Panel in Place

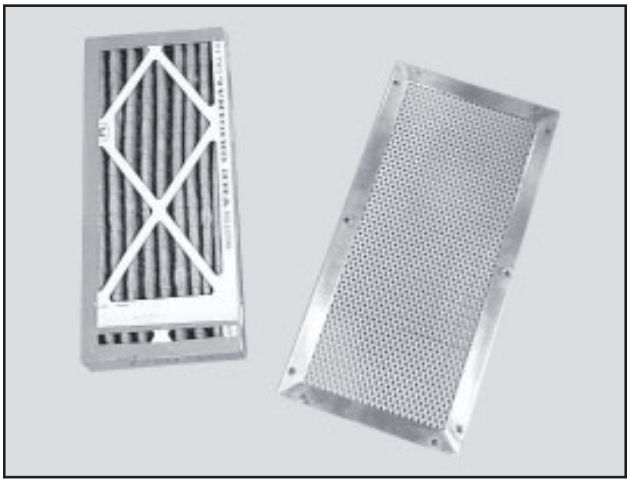


Figure 30. Pre-filter & Cover

Installing the Pre-filter

4. Observe the air flow direction arrow (Figure 31) on the side of the filter. When the filter is installed, the arrow should point upward toward the blower box. Exhaust air flow is from the Isolation Cubicle upward into the blower box.

5. Place the pre-filter, with the arrow pointing up, into the opening in the central ceiling panel under the exhaust register.

6. With ten screws (supplied) fasten the cover (Figure 32) over the pre-filter.

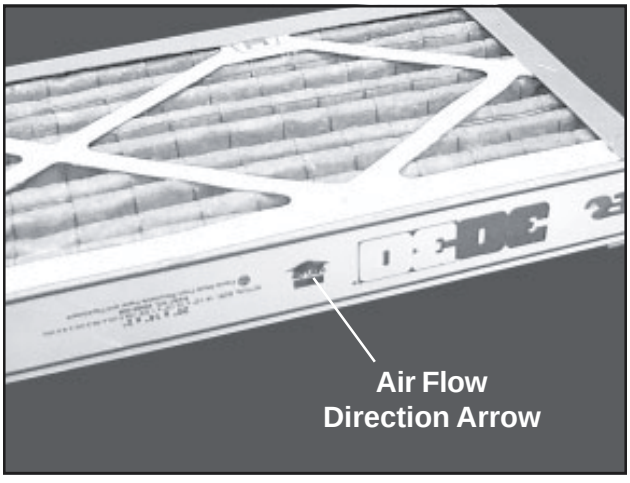


Figure 31. Direction Arrow on Exhaust Pre-filter

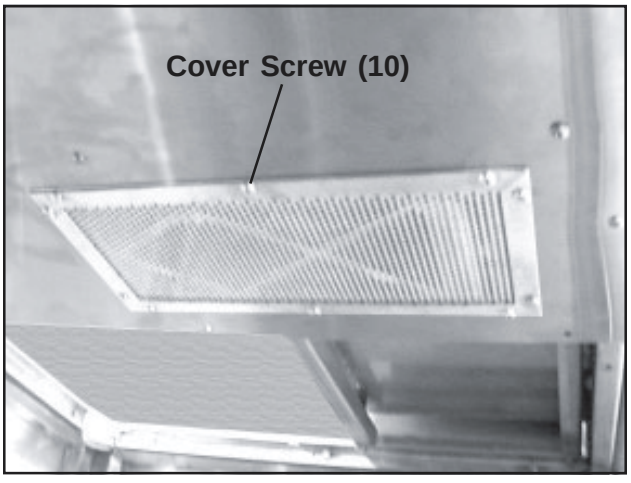


Figure 32. Exhaust Pre-filter & Cover in Place

Installing the Right Ceiling Panel

Overview

Next you will install the right ceiling panel. At the right rear corner of the panel is one 2-1/2 in. hole, and three 1/4 in. holes (Figures 33 & 34).

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

Installation

1. Hold the right ceiling panel in place under the base frame to the right of, and overlapping, the center panel (Figure 33).

2. While supporting the panel, pass the three white nylon air sensor lines (5, 6, & 7 - refer to Step 5 on *Page 14*) down through the three small holes in the panel (Figure 34). Any line can go through any hole - it makes no difference.

3. Pass the threaded coupling on the right end of the intake duct assembly down through the large hole in the right panel (Figures 18 & 34).

4. Secure the panel to the base frame with ten 1/2 in. Phillips screws into the holes in the front, rear, and sides (Figure 33). The three screws on the left side also secure the center ceiling panel.

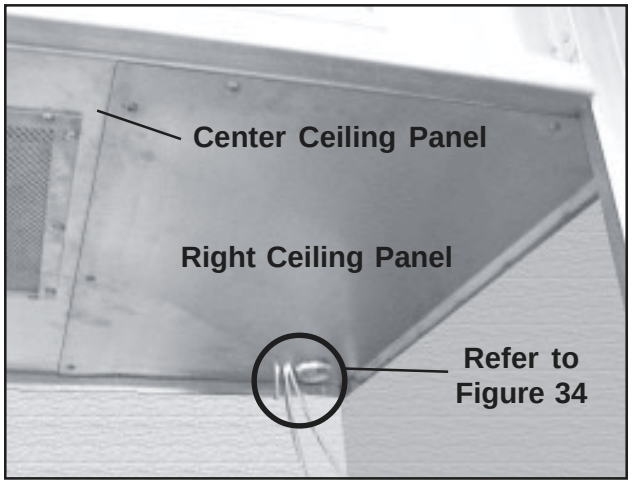


Figure 33. Right Ceiling Panel in Place

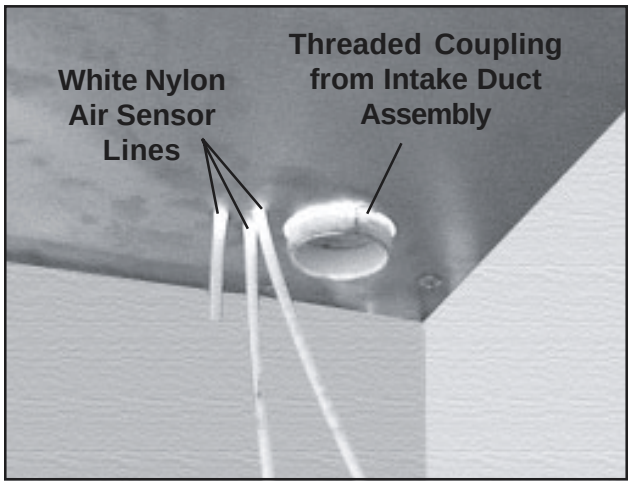


Figure 34. Air Sensor Lines & Coupling Passing Through Right Ceiling Panel

Installing the Left Ceiling Panel

Overview

Next you will install the left ceiling panel. At the left rear corner of the panel is one 2-1/2 in. hole (Figure 36). No air sensor lines pass through this panel.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

Installation

1. Plug the electric power cord (Figure 35) into the outlet in the cubicle wall. **Note:** If the cubicle includes the lighting option, plug the power cord for the lights into the outlet also.

2. Hold the left ceiling panel in place under the base frame to the left of, and overlapping, the center panel (Figure 36).

3. Pass the threaded coupling on the left end of the intake duct assembly down through the large hole in the left panel (Figures 18 & 36).

4. Secure the panel to the base frame with ten 1/2 in. Phillips screws into the holes in the front, rear, and sides (Figure 36). The three screws on the right side also secure the center ceiling panel.

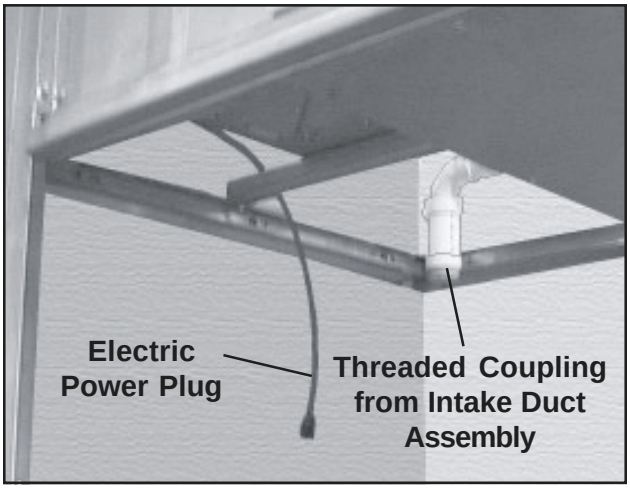


Figure 35. Power Plug & Intake Duct Coupling

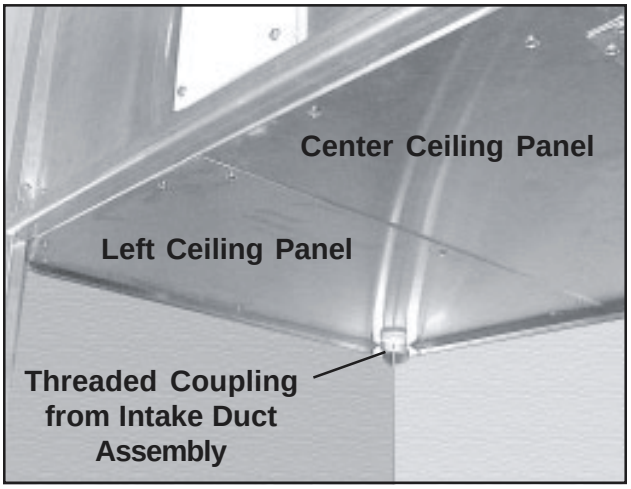


Figure 36. Left Ceiling Panel in Place

Installing the Air Intake Piping

Overview

Two 62 in. long PVC air intake pipes (Figure 37) connect to the threaded couplings at either end of the air intake duct inside the cubicle. These pipes direct incoming air into the cubicle near the floor. This air rises and eventually leaves the cubicle through the exhaust pre-filter (Figure 32). Air sensor lines connected to the right pipe enable the system to determine the number of air changes per hour in the cubicle.

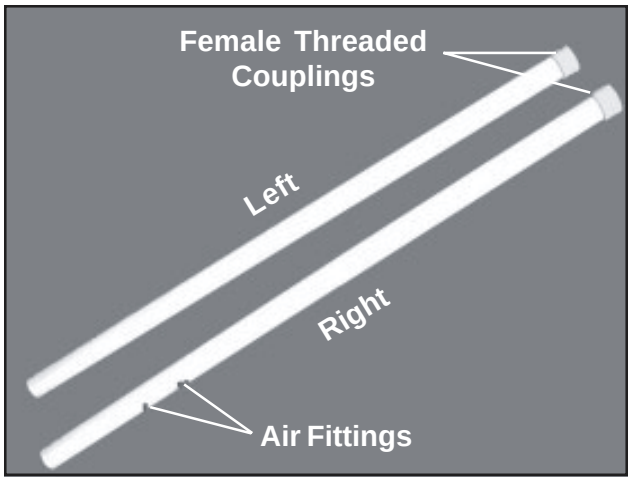


Figure 37. PVC Air Intake Pipes

Installation

Note: PVC female threaded couplings are mounted to the top ends of both pipes. The right air intake pipe has two brass air fittings (Figure 37) near the lower end.

Note: DO NOT apply adhesive to these joints - they should be left unglued so that the pipes can be removed for servicing.

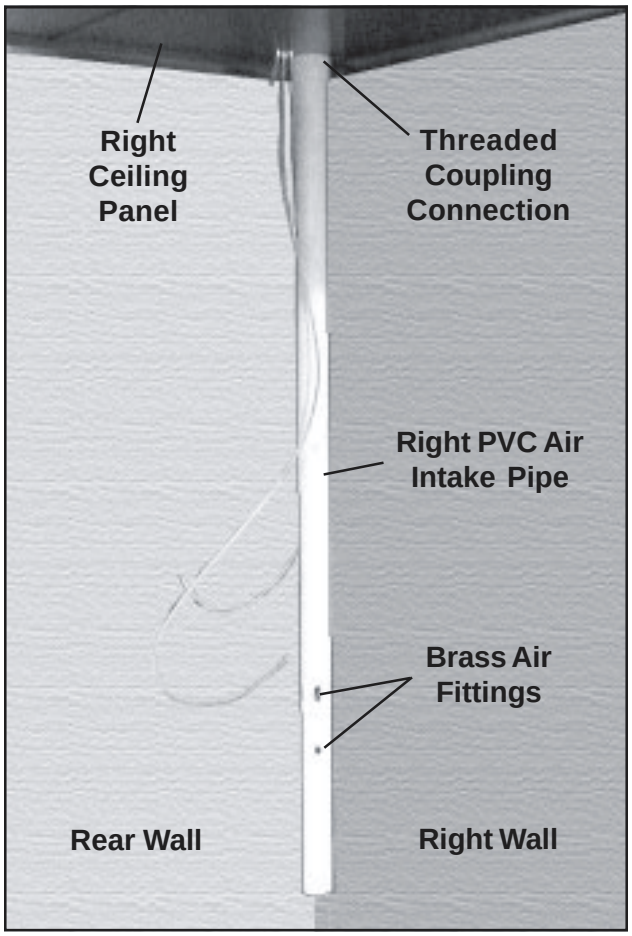


Figure 38. Right PVC Air Intake Pipe Mounted in Place

1. Screw the female threaded coupling on the right air intake pipe onto the male threaded coupling from the air intake duct projecting through the right ceiling panel (Figure 38). Make sure the air fittings are easily accessible so you can connect the air sensor lines.

2. With a wall bracket (Figure 39) and a hose clamp, fasten the air intake pipe to the rear wall using suitable mounting hardware (Figure 40). Fasten the pipe to the wall anywhere between one to two feet from the bottom of the pipe, but not interfering with either of the air fittings. This stabilizes the intake pipe and prevents damage to the threaded coupling connection if the pipe is accidentally struck.

3. As in *Steps 1* and *2*, screw the left intake pipe to the threaded coupling on the left side, and mount a wall bracket between the pipe and the rear wall. There are no air sensor lines to connect to this pipe.

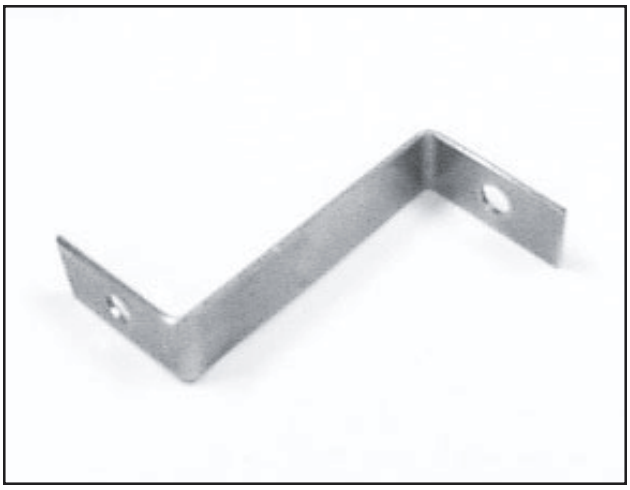


Figure 39. Wall Bracket for Air Intake Pipe

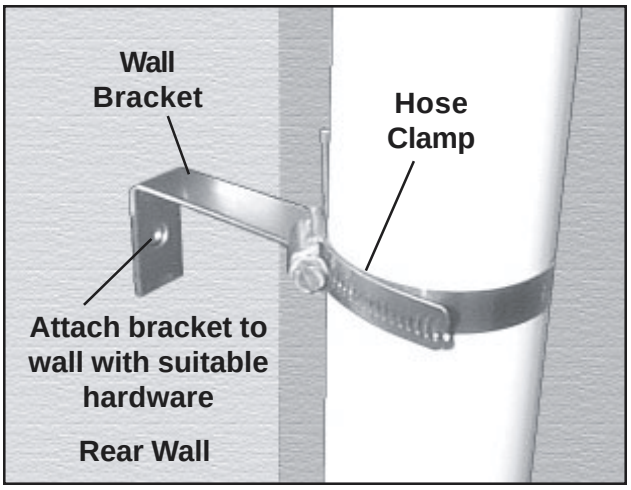


Figure 40. Air Intake Pipe with Wall Bracket

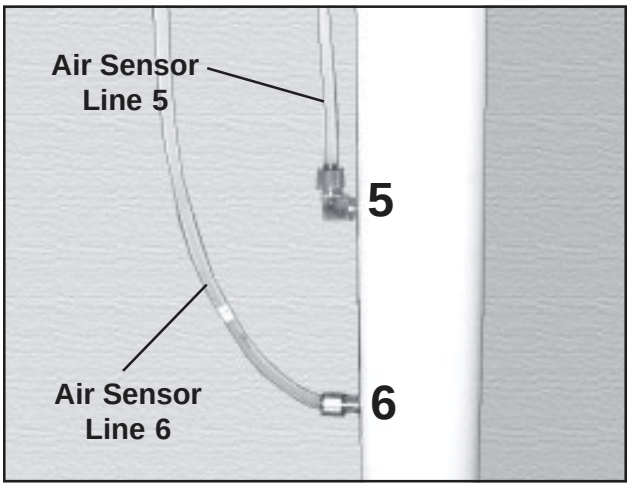


Figure 41. Brass Air Sensor Line Fittings on Right Air Intake Pipe

Note: Three white nylon air sensor lines, numbered 5, 6, and 7, enter the cubicle next to the right air intake pipe (Figure 34).

4. Connect air sensor line 5 to the brass air fitting numbered 5 (Figure 41). Tighten the fitting with a 7/16 in. open-end wrench.

5. Connect air sensor line 6 to the brass air fitting numbered 6. Tighten the fitting with a 7/16 in. open-end wrench.

6. Push any extra lengths of the air sensor lines back up into the ceiling. Leave the remainders long enough to insure that there is no stress on the lines.

7. Sensor line 7 does not connect to a fitting - it just projects into the cubicle about three to four inches (Figure 45).

IMPORTANT - INSTALLATION SEQUENCE INFORMATION
At this point, return to the *Isolation Cubicle Owner's Manual, 702743, Page 18,* and follow the instructions under *Installing the Rear Door.* Continue to follow the instructions in that manual until you have finished installing and adjusting the door latches. At that point, return to *Installing the Front Panel* on *Page 28* in this *Air Handling System Manual, 702756.*

Installing the Front Panel

Overview

Before mounting the front panel in place, several electrical and air piping connections must be made to the rear of the panel gauges. Note that this panel is totally different from the front panel on the standard Isolation Cubicle without the Air Handling System.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

Installation

Note: Refer to the *Piping Diagram* on *Page 32*. Tighten all air sensor lines to their respective fittings with a 7/16 in. open end wrench.

1. Connect air sensor lines 1 and 2 to the filter condition blower intake gauge (Figure 42).

2. Connect air sensor lines 3 and 4 to the filter condition blower exhaust gauge.

3. Connect air sensor lines 5 and 6 to the air changes per hour gauge.

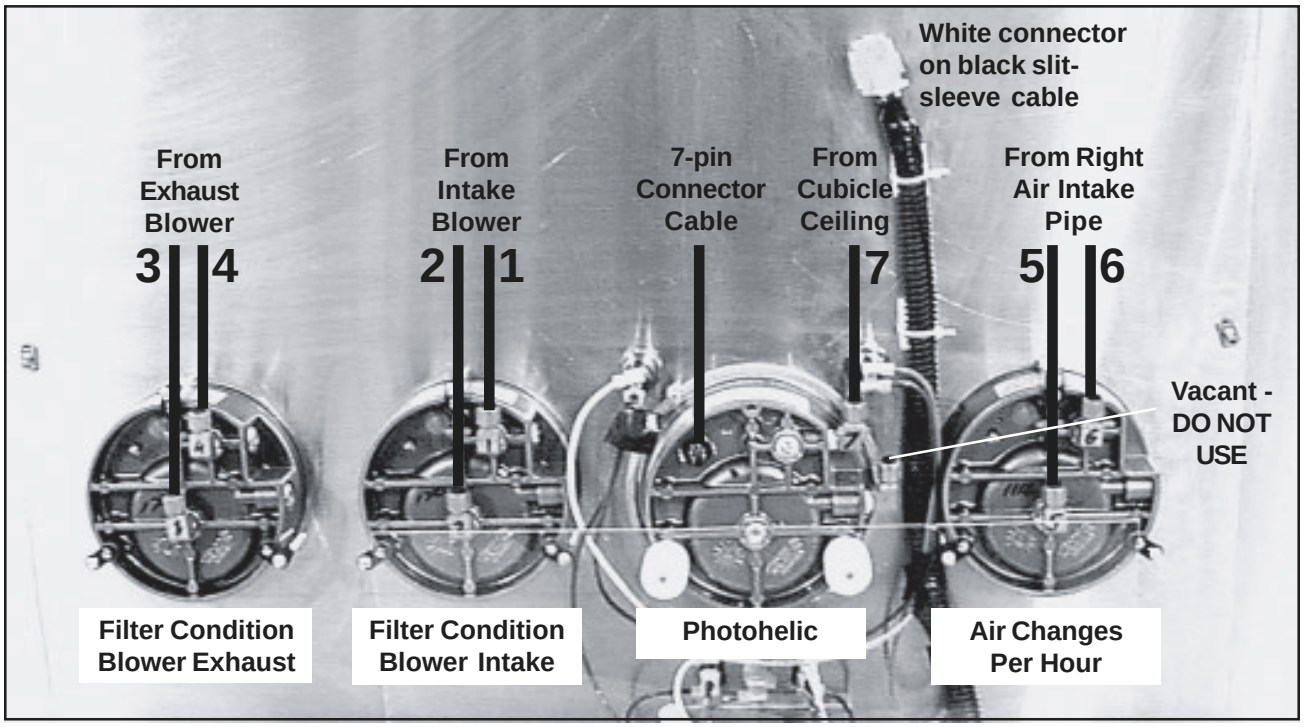


Figure 42. Piping & Wiring Connections on Rear of Front Panel

4. Connect air sensor line 7 to the photohelic gauge.

5. Connect the 7-pin connector on the gray cable to the photohelic gauge. **Note:** Make sure the pins in the terminal are straight and enter the correct holes in the connector.

6. Connect the white plastic connectors on the black slit-sleeve cables to each other.

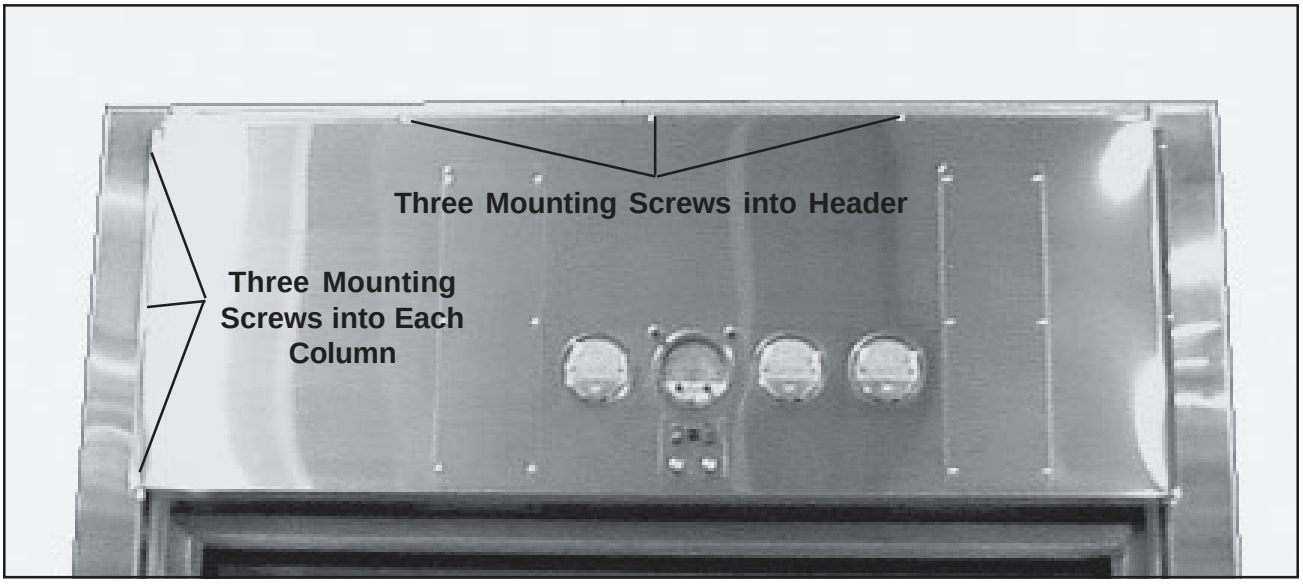


Figure 43. Mounting Location for Front Panel

7. Hold the top panel in place against the front of the header and columns (Figure 43).

8. Secure the panel to the header with three Phillips screws.

9. Secure the panel to each column with three Phillips screws.

IMPORTANT - INSTALLATION SEQUENCE INFORMATION
At this point, return to the *Isolation Cubicle Owner's Manual, 702743, Page 18,* and follow the instructions under *Installing the Rear Door.* Continue to follow the instructions in that manual until you have finished installing and adjusting the door latches. At that point, return to *Start-up* on *Page 30* in this Air Handling System Manual, 702756.

Start-up

Assembly of the Isolation Cubicle is now complete. Refer to *Start-up Procedure - New Setup* on *Page 35* and perform *Steps 1* through *6*.

Wiring Diagram - Air Handling System

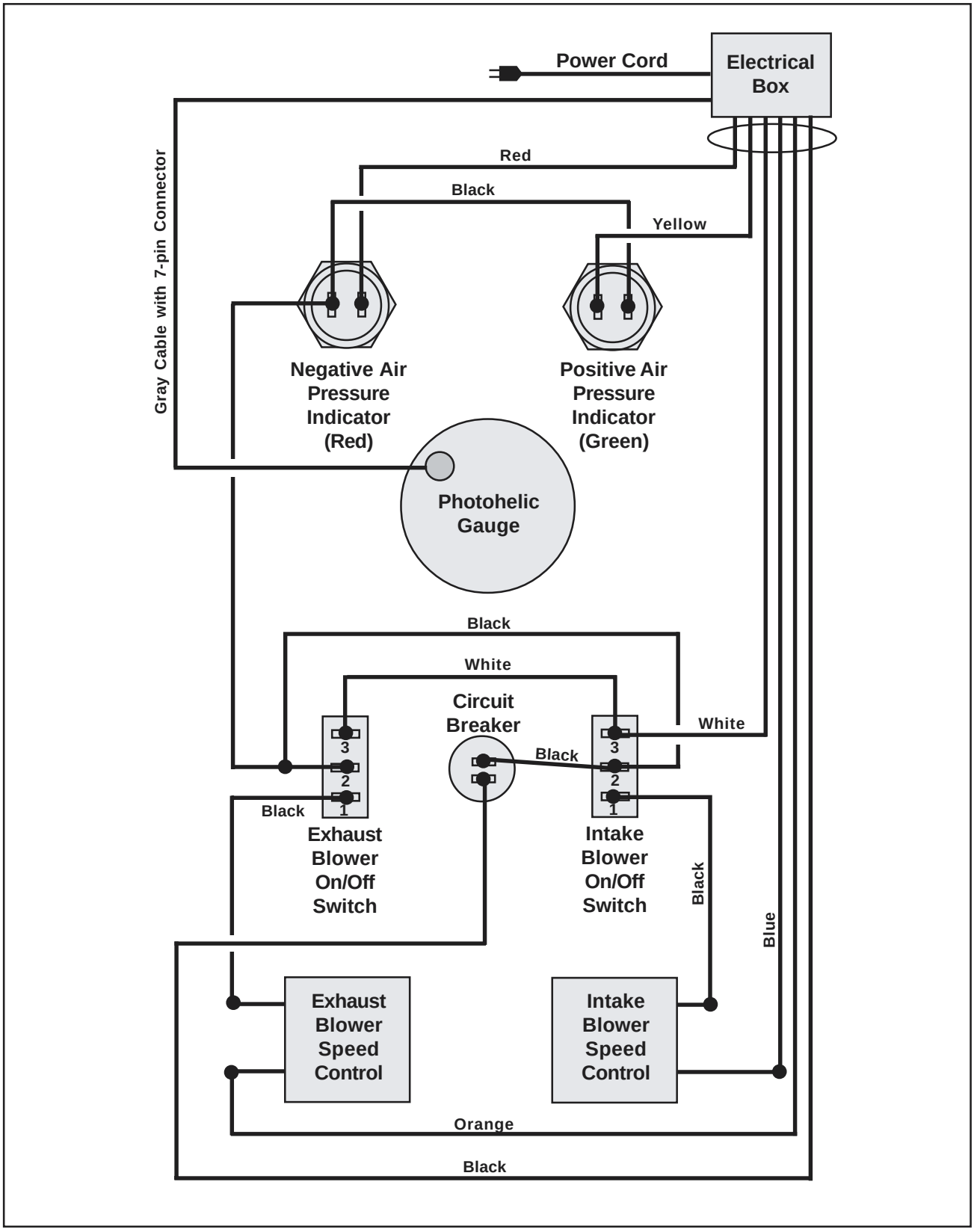


Figure 44. Wiring Diagram - Isolation Cubicle Air Handling System

Piping Diagram - Air Handling System

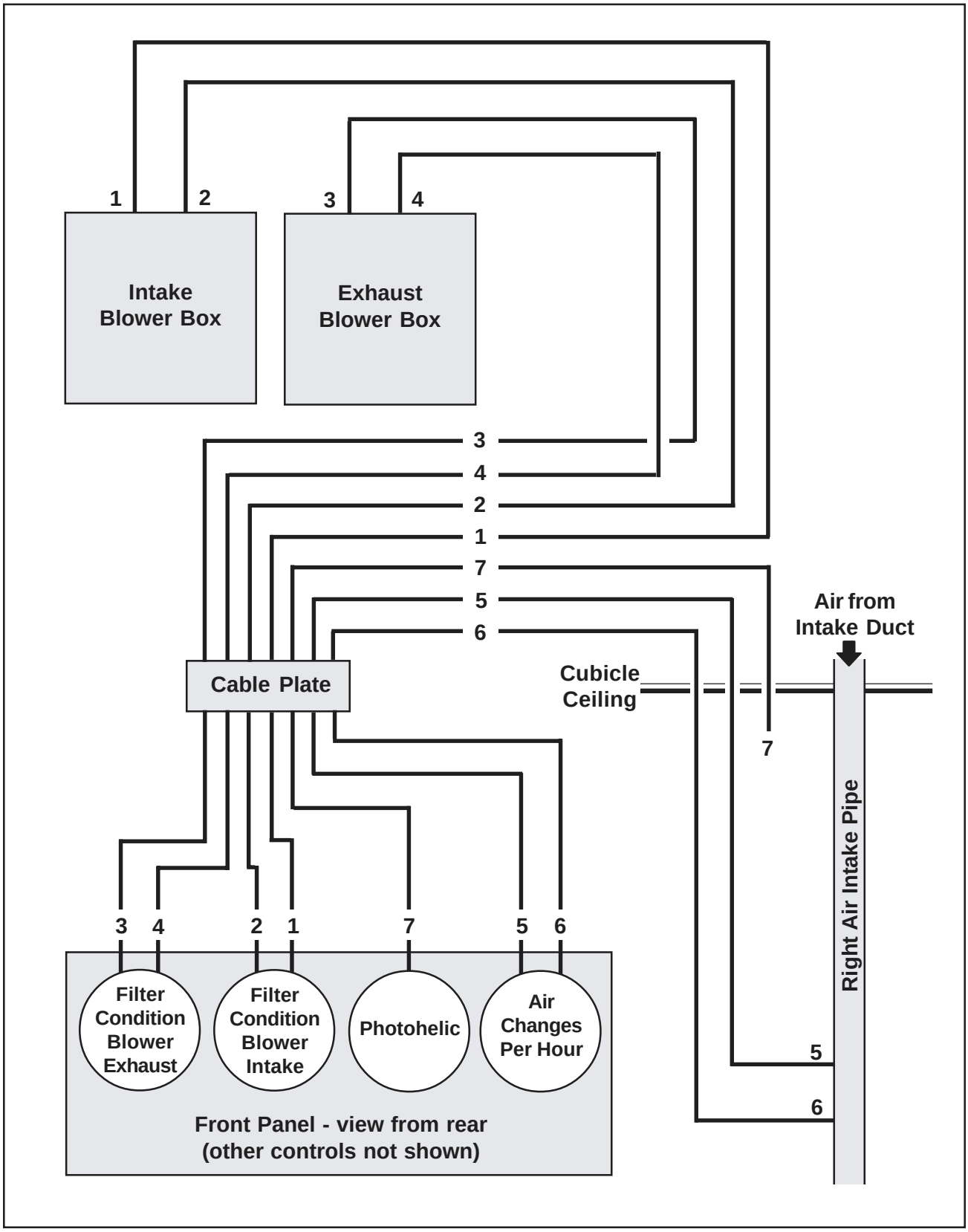


Figure 45. Piping Diagram - Isolation Cubicle Air Handling System

Chapter 3 - Operation & Care

Operating the Isolation Cubicle Air Handling System

Overview

The operation of the optional Air Handling System is not difficult and begins with specifying two parameters:

- the number of air changes required per hour
- the positive or negative air pressure differential required inside the cubicle relative to the outside room.

After these parameters have been have been established, the only adjustments needed are occasional changes in blower speeds as the filters become dirty.

Familiarize yourself with the gauges and controls on the instrument panel (Figure 46).

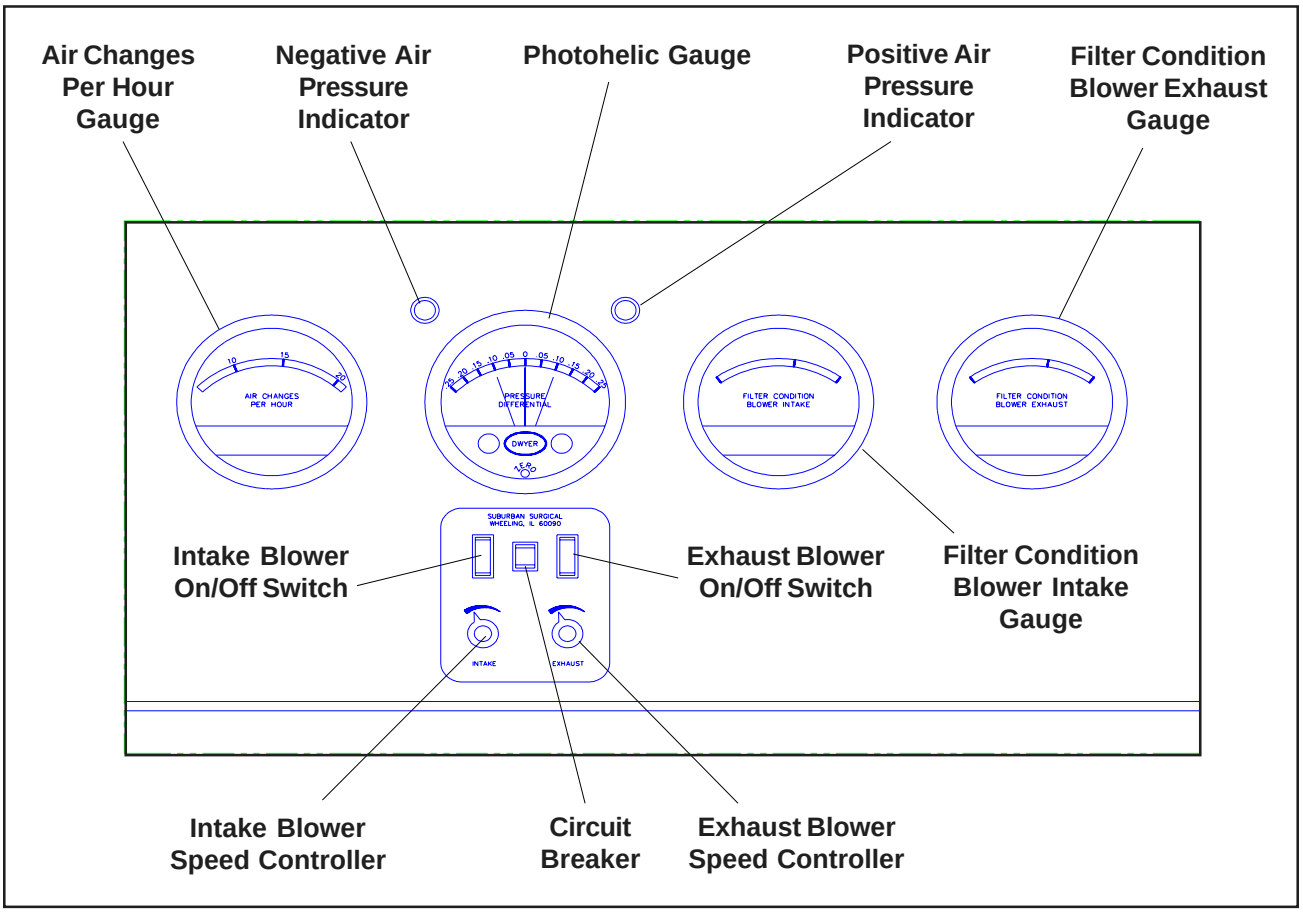


Figure 46. Air Handling System Gauges & Controls

Air Handling System Controls

Refer to Figure 46

Air Changes Per Hour Gauge

This gauge indicates how many times per hour the air in the cubicle is being totally changed.

Negative Air Pressure Indicator

This red light illuminates whenever a negative air pressure exists inside the cubicle.

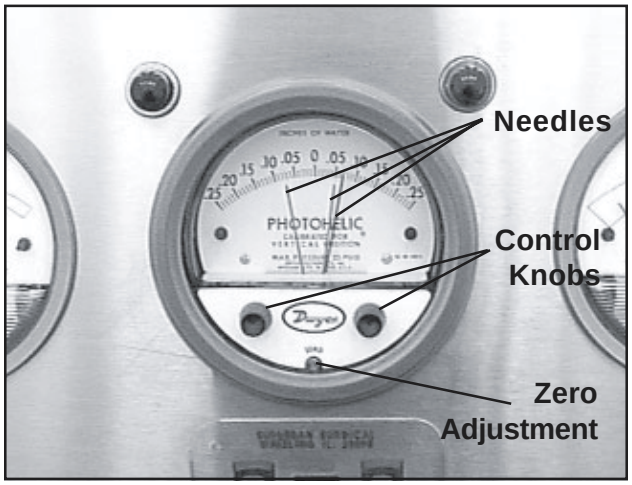


Figure 47. Photohelic Gauge

Photohelic Gauge

Overview

This gauge indicates the presence and magnitude of negative or positive air pressure inside the cubicle relative to the outside room. The gauge is calibrated from -25 to +25 inches of water.

Needles

The black needle in the gauge indicates the actual air pressure in the cubicle relative to the room. In the gauge (Figure 47) two small knobs control two red needles on the gauge that allow you to set high and low limits on the air pressure in the cubicle.

Zeroing the Gauge

The gauge should be zeroed at least once a month or any time that you suspect it might not be reading correctly. To zero the gauge, shut down the Air Handling System and open the doors to equalize the air pressure inside and outside the unit. With a small, flat-blade screwdriver, turn the zero adjustment (Figure 47) until the black needle indicates "0".

Positive Air Pressure Indicator

This green light illuminates whenever a positive air pressure exists inside the cubicle.

Filter Condition Blower Intake Gauge

This gauge indicates the difference in air pressure between the in and out sides of the intake HEPA filter. While the needle is in the clear area of the gauge arc, the filter is OK. When the needle is in the "Change Filter" area of the gauge arc, the intake HEPA filter is dirty and should be replaced.

Filter Condition Blower Exhaust Gauge

This gauge indicates the difference in air pressure between the in and out sides of the exhaust HEPA filter. While the needle is in the clear area of the gauge arc, the filter is OK. When the needle is in the "Change Filter" area of the gauge arc, the exhaust HEPA filter is dirty and should be replaced.

Circuit Breaker

One 5 amp circuit breaker is provided on the control panel. The circuit breaker shuts down electric power to the unit should an overload or short circuit occur. To reset a circuit breaker, refer to *Resetting the Circuit Breaker* on *Page 37*.

Intake Blower On/Off Switch

Pressing this switch turns the intake blower ON or OFF. After the switch has been turned ON, control the speed of the intake blower using the intake blower speed controller knob.

Exhaust Blower On/Off Switch

Pressing this switch turns the exhaust blower ON or OFF. After the switch has been turned ON, control the speed of the exhaust blower using the exhaust blower speed controller knob.

Intake Blower Speed Controller

After the intake blower has been turned ON with the intake blower on/off switch, control the speed of the blower by turning this knob. Turn the knob counterclockwise to increase blower speed, and clockwise to decrease blower speed. As long as this knob has not been touched, when the blower is turned ON, it will automatically begin operating at the same speed as when it was turned OFF.

Exhaust Blower Speed Controller

After the exhaust blower has been turned ON with the exhaust blower on/off switch, control the speed of the blower by turning this knob. Turn the knob counterclockwise to increase blower speed, and clockwise to decrease blower speed. As long as this knob has not been touched, when the blower is turned ON, it will automatically begin operating at the same speed as when it was turned OFF.

Start-up Procedure - New Setup

Overview

Refer to Figure 46 to identify controls. Use this start-up procedure to:

- start up a new cubicle for the first time
- start up a cubicle after it has been unused for an extended period
- start up a cubicle after service or repairs, including the replacement of a pre-filter or HEPA filter.
- start up a cubicle when the number of air changes per hour and/or the pressure differential must be changed

Procedure

1. Make sure all doors are closed and latched.

2. Turn the intake blower on/off switch to ON.

3. Observe the air changes per hour gauge and, using the intake blower speed controller knob, adjust the intake blower speed until the desired number of changes per hour is shown on the gauge.

4. Turn the exhaust blower on/off switch to ON.

5. Observe the photohelic gauge and, using the exhaust blower speed knob, adjust the exhaust blower speed controller until the desired negative or positive air differential in the cubicle is attained.

6. Final setting requires the minor adjustments of both blower speed controller knobs to balance the number of air changes per hour and the air pressure differential.
Note: A change in one value may affect the other. Allow a minute or so between changes to allow the system to stabilize. Continue adjusting until both parameters are as desired. After the number of air changes and the negative/positive air pressure have been established, the only adjustments needed are those required to compensate for dirty filters.

Start-up Procedure - Existing Setup

Overview

Use the start-up procedure below to start the Air Handling System in an Isolation Cubicle when the air changes per hour and the negative/positive pressure desired have not changed from the last time the unit was used. Refer to Figure 46 to identify controls.

Procedure

1. Make sure all doors are closed and latched.

2. Turn the intake blower on/off switch to ON.

3. Turn the exhaust blower on/off switch to ON.

4. Observe the air changes per hour gauge and the photohelic gauge to make sure that these parameters are as required. If not, follow *Steps 1* through *6* under *Start-up Procedure - New Setup* starting on *Page 35* to reset these parameters. After the number of air changes and the negative/positive air pressure have been established, the only adjustments that should be needed are those required to compensate for dirty filters.

Shutdown Procedure

Overview

Use the shutdown procedure below to shut down the Air Handling System on the Isolation Cubicle. Refer to Figure 46 to identify controls. **Note:** Do not make changes to the exhaust or intake blower speeds. Such adjustments can disturb the number of air changes and negative/positive air pressure parameters.

Procedure

1. Turn the exhaust blower on/off switch to OFF.

2. Turn the intake blower on/off switch to OFF.

Determining HEPA Filter Condition

As the Air Handling System operates, airborne debris slowly collects in the HEPA filters and, as a consequence, the resistance to the air moving through the filters gradually increases. As this resistance increases, you will have to progressively increase the intake and exhaust blower speeds to maintain the required air changes per hour and the negative/positive air pressure. This increased resistance is indicated on the filter condition blower intake and exhaust gauges (Figure 46). When a gauge nears the "Change Filter" area, the HEPA filter should be changed - refer to *Changing a HEPA Filter* on *Page 39*. SSCI recommends that you change the low-cost pre-filters regularly to extend the lives of the more expensive HEPA filters.

Resetting the Circuit Breaker

A single 5 amp circuit breaker on the instrument panel (Figure 48) automatically shuts down power to the unit if an electrical fault occurs.

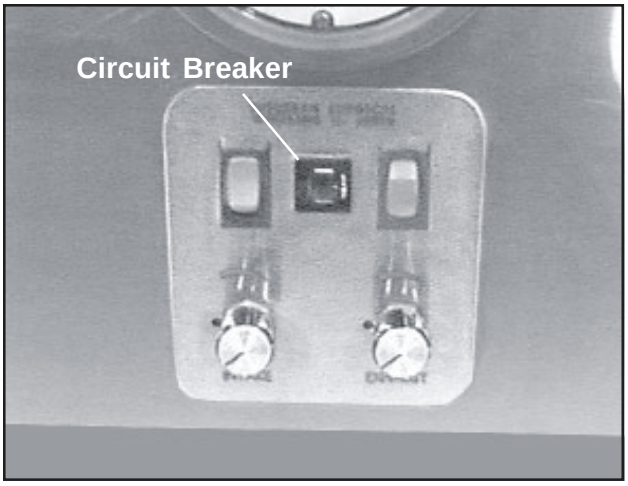


Figure 48. Circuit Breaker

Should the circuit breaker trip, wait at least ten seconds, then press in on the black button in the circuit breaker to reset it.

Occasional tripping of a circuit breaker is not usually a cause for concern, however, if the circuit breaker trips frequently, it may be a sign of problems with the incoming power or the unit's electrical system. The unit should be checked and repairs made as needed. If you are in an area in which the incoming electrical power fluctuates a lot, consider the installation of a power conditioner.

Changing a Pre-filter

P/N 853573

Overview

The Air Handling System contains two pre-filters (Figure 49): one for the intake, and one for the exhaust. Regular replacement of the pre-filters will ensure longer life for the HEPA filters. Useful life of the pre-filters will vary with the number of operating hours and environmental conditions. High-use cubicles and cubicles in dry, dusty climates will, naturally, require more frequent changes. Your experience with your cubicle will dictate how often your pre-filters should be changed. To order pre-filters, refer to *Parts Ordering Procedure* on *Page 45*. The following instructions are suitable for both intake and exhaust pre-filters.

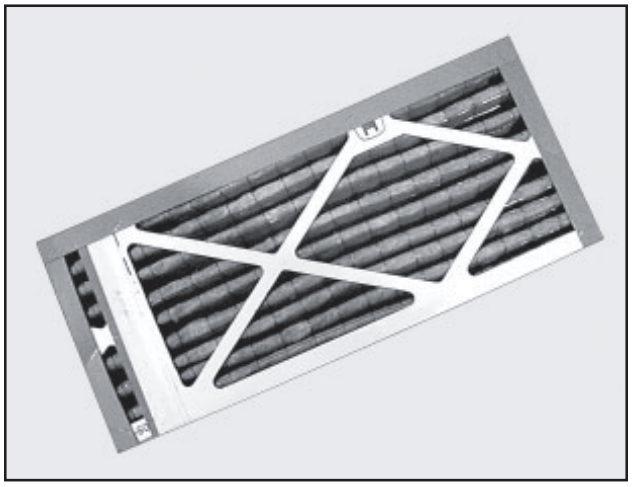


Figure 49. Typical Pre-filter

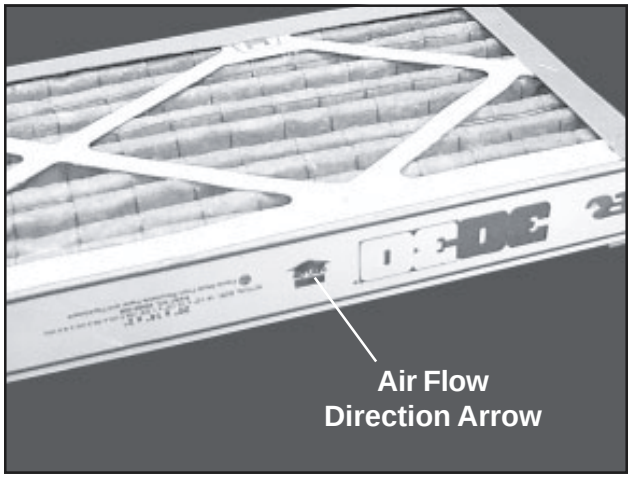


Figure 50. Direction Arrow on Pre-filter

Tool Required

- Phillips screwdriver

Procedure

1. Turn the Isolation Cubicle OFF (refer to *Shutdown Procedure* on *Page 37*).
2. Open the doors.
3. With a Phillips screwdriver, remove the ten screws on the perforated cover over the pre-filter (Figure 51), and remove the cover.
4. Remove and discard the dirty pre-filter.

CAUTION: **Dispose of old filters only in accordance with applicable local, state, and Federal regulations.**

5. Observe the air flow direction arrow (Figure 50) on the side of the filter. When the filter is installed, the arrow should point in the direction of the air flow.
6. Place the new pre-filter, with the arrow pointing in the correct direction, into the filter recess.

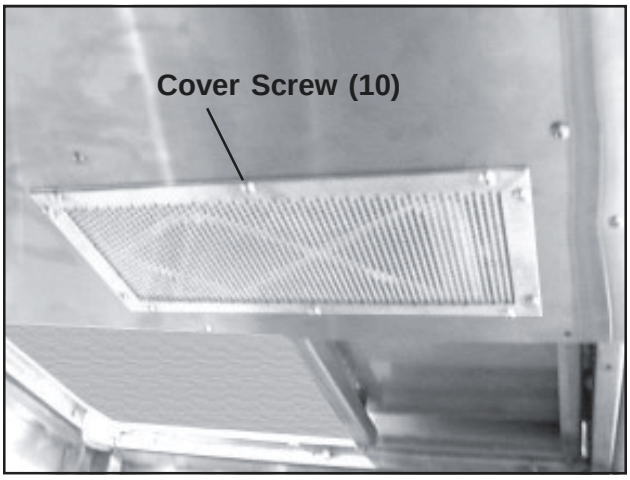


Figure 51. Typical Filter Cover (exhaust shown)

7. With ten screws removed above, fasten the cover (Figure 51) over the pre-filter.

8. Start up the Air Handling System.

9. Check the air changes per hour and the photohelic gauges and readjust these parameters if necessary. Refer to *Start-up Procedure - New Setup* on *Page 35*.

Changing a HEPA Filter

P/N 854171

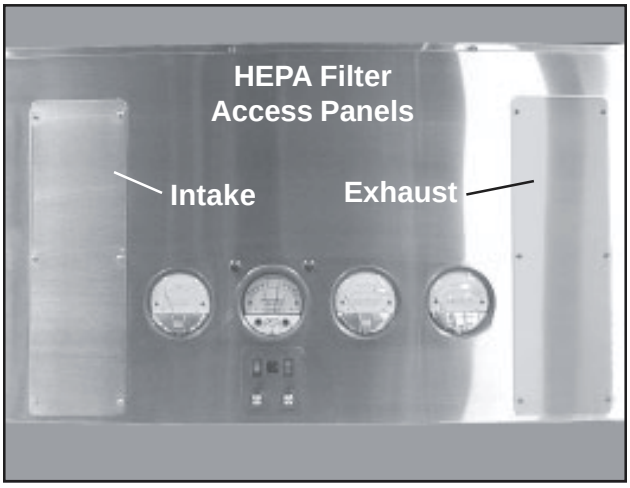


Figure 52. HEPA Filter Access Panels

Overview

The Air Handling System contains two HEPA filters: one for the intake, and one for the exhaust. These filters should be changed when the respective filter condition gauge (Figure 46) approaches the "Change Filter" area. Useful life of the HEPA filters will vary with the number of operating hours and environmental conditions. High-use cubicles and cubicles in dry, dusty climates will, naturally, require more frequent changes. Your experience with your cubicle will dictate how often your filters should be changed. To order HEPA filters, refer to *Parts Ordering Procedure* on *Page 45*. The following instructions are suitable for both intake and exhaust HEPA filters.

Tools Required

- Flat-blade screwdriver
- Phillips screwdriver
- 7/16 in. nut-driver

Removal

1. Turn the Isolation Cubicle OFF (refer to *Shutdown Procedure* on *Page 37*).

2. With a Phillips screwdriver, remove the six screws on the access panel next to the instrument panel (Figure 52) and remove the panel.

3. With a flat-blade screwdriver, remove the eight screws on the polyethylene panel (Figure 53) and remove the panel.

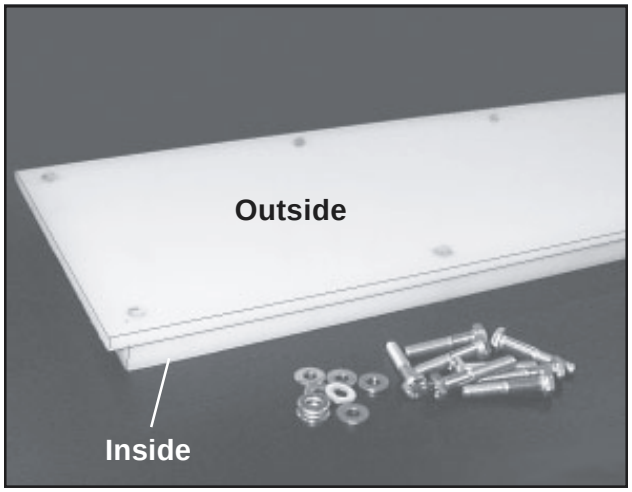


Figure 53. Polyethylene Panel & Mounting Hardware

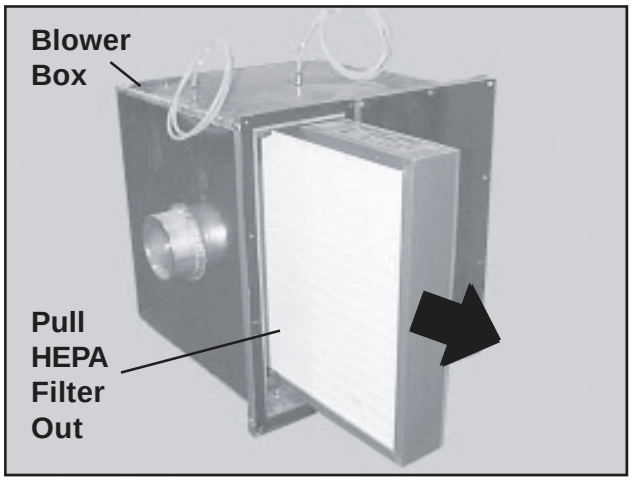


Figure 55. Removing the HEPA Filter

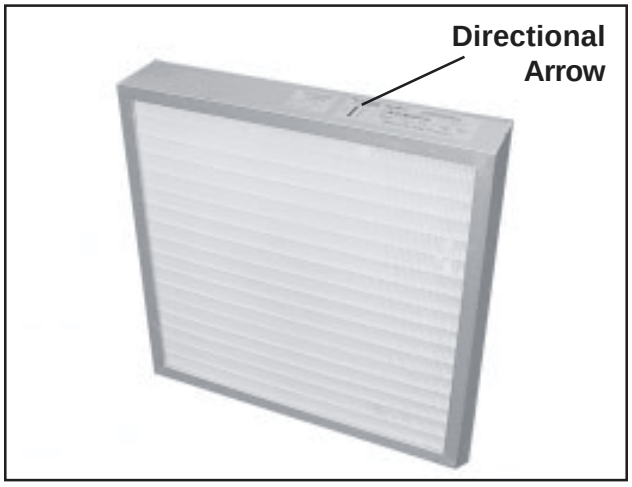


Figure 56. Typical HEPA Filter

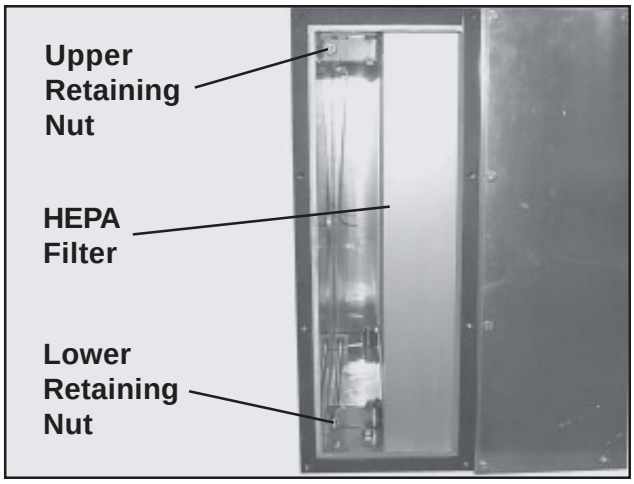


Figure 54. HEPA Filter Retaining Nuts

4. With a 7/16 in. nut-driver, loosen the upper and lower retaining nuts that hold the HEPA filter in place (Figure 54).

5. Pull out and discard the dirty filter (Figure 55).

***CAUTION:* Dispose of old filters only in accordance with applicable local, state, and Federal regulations.**

Installation

1. Thoroughly clean the surface against which the filter fits so that it is completely free of dust, dirt, oil, etc.

2. Install a clean, new HEPA filter so that the side with the rubber gasket faces the blower motor. The directional arrow (Figure 56) on top the filter should point away from the blower.

3. Tighten the two retaining nuts that hold the filter in place (Figure 54). **Note:** Tighten the nuts enough to squeeze the filter snugly against the blower motor housing for an airtight fit.

Note: Be careful as you tighten the eight panel screws. They must be screwed down tight - enough to compress the gasket behind the panel. Be aware, however, that the blower box is aluminum and forcing the screws down too tight can damage the threads in the mounting holes.

4. Replace the polyethylene panel and loosely insert the eight screws (Figure 53).

5. Working out from the center, firmly tighten down the eight screws to achieve an airtight fit.

6. Replace the access panel and secure with the six screws (Figure 52).

7. Perform the steps under *Start-up Procedure - New Setup* on *Page 35* to establish the number of air changes per hour and the air pressure differential.

Periodic Maintenance

Observing a regular program of periodic maintenance will enhance the performance and life of your Air Handling System.

- Zero the negative/positive air pressure gauge - monthly. Refer to *Zeroing the Gauge* on *Page 34*.

Cleaning the Isolation Cubicle

Stainless Steel Cleaning Procedures

Ordinary deposits of waste and fluids can usually be removed with soap and water. Stubborn deposits may require scrubbing with "stainless steel" wool, nylon, or plastic scrubbers and/or the use of commercial cleaning products. Always scrub in the direction of the "grain" of the metal. Rinse with clear water and dry thoroughly with a clean, soft cloth.

Minor scale build-up and some hard water spotting may be removed by washing with vinegar, followed by a neutralizing rinse of clear water, and a thorough drying with clean, soft cloths.

For heavy deposits of scale, 5% oxalic acid (use warm), 5-15% sulfamic acid, or 5-10% phosphoric acid may be used. As always, rinse with clear water and dry thoroughly with clean soft cloths.

Avoid prolonged use of chlorides (such as chlorine bleach), bromides, iodides, and thiocyanates. Never allow salty solutions to dry on the stainless steel.

For more information refer to *Care & Cleaning of Stainless Steel* on *Page 3*.

Chapter 4 - Repairs & Replacements

Replacement Parts

The table below lists the replacement parts available for the SSCI Isolation Cubicle Air Handling System. For parts not listed, contact SSCI Customer Service at (800) 323-7366. To order parts, refer to *Parts Ordering Procedure* on *Page 45*.

Part Name	SSCI Part Number	Quantity per System	Replacement Instructions
Pre-filter	853573	2	*Page 38*
HEPA Filter	854171	2	*Page 39*
HEPA Filter Access Panel	620722	2	*Page 46*
Pre-filter Cover	212131	2	*Page 46*
Front Panel	Refer to Layout Drawings	1	*Page 47*
Safety Shield	754823	1	*Page 49*
Standoff (Safety Shield)	756922	2	*Page 49*
Blower Speed Controller Knob	854190	2	*Page 50*
Blower Speed Controller	854179	2	*Page 51*
Blower On/Off Switch	854198	2	*Page 53*
Circut Breaker	854294	1	*Page 55*
Indicator Lamp Lens	Red - 854352 Green - 854353	1 each	*Page 56*
Indicator Bulb	854354	2	*Page 57*
Indicator Lamp Base	854351	2	*Page 58*
Photohelic Gauge	853731	1	*Page 60*
Filter Condition Blower Intake Gauge	854174	1	*Page 62*
Filter Condition Blower Exhaust Gauge	854174	1	*Page 62*
Air Changes Per Hour Gauge	853628	1	*Page 62*
Air Intake Pipe	Right - 215487 Left - 215486	1 each	*Page 64*

Replacement Parts for the SSCI Air Handling System (cont'd on *Page 44*)

Part Name	SSCI Part Number	Quantity per System	Replacement Instructions
Left Ceiling Panel	Refer to Layout Drawings	1	*Page 66*
Right Ceiling Panel	Refer to Layout Drawings	1	*Page 67*
Center Ceiling Panel	Refer to Layout Drawings	1	*Page 69*
Inner Panel	Refer to Layout Drawings	1	*Page 70*
Intake Air Duct	Call SSCI	1	*Page 72*
Blower Box Assembly	212574	2	*Page 74*
Polyethylene Panel	753492	2	*Page 76*
Gasket (Polyethylene Panel)	754495	2	*Page 77*
Pitot Tube Assembly	210433	4	*Page 79*
Filter Rod Assembly	210554	4	*Page 81*
Bushing (Filter Rod Assembly)	753557	8	*Page 81*
Front Plate	616160	2	*Page 83*
Gasket, Peripheral (Front Plate)	Call SSCI	2	*Page 85*
Gasket, Center (Front Plate)	Call SSCI	2	*Page 85*
Vibro-mount (Blower Box)	853497	8	*Page 88*
Motorized Impeller	854175	2	*Page 91*
Electrical Box	Call SSCI	1	*Page 94*
Power Supply Cord	853431	1	*Page 96*
7-pin Cable (Photohelic Gauge)	Call SSCI	1	*Page 99*
Capacitor	854176	2	*Page 101*

Replacement Parts for the SSCI Air Handling System (cont'd from *Page 43*)

Note: In the table above, actual part numbers are shown for those standardized parts that are common to all SSCI Isolation Cubicles. Many parts in your cubicle, however, are custom-designed for your particular location or application. In these cases, refer to the Layout Drawings supplied with your cubicle for part numbers.

General Information

- If during disassembly, you remove any tape, cable ties, etc., remember to replace them as you reassemble the unit.
- During disassembly, retain all hardware items such as screws, nuts, lockwashers, etc. for reassembly.
- If you have problems with any procedure, please feel to call SSCI Customer Service at (800) 323-7366.

Safety

Observe the following precautions when working with the Isolation Cubicle Air Handling System.

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **Perform the shutdown procedure and, if possible, unplug the power cord before working on any component of the electrical system.**

Working with the Isolation Cubicle Air Handling System is not difficult, however, some components are heavy and/or awkward to handle. In such cases, the following caution will be displayed:

CAUTION: **We recommend that this procedure be done by at least two people.**

Parts Ordering Procedure

Order new equipment, accessories, and replacement parts directly through SSCI Customer Service by mail, telephone, or fax. Refer to *SSCI Contact Information* on *Page 2* for address, telephone, and fax numbers. When ordering, please provide the following information:

- Your name
- Company name
- Company account number
- Telephone number
- Fax number
- e-mail address
- Shipping address
- Billing address (if different from shipping address)
- Names, part numbers, and quantities of items being ordered
- Credit card number and expiration date, or other payment information
- Preferred method of shipment
- Information on whether the items are required on a normal or urgent basis

Parts Replacement Procedures

The following pages guide you in replacing worn, damaged, or missing parts on your SSCI Isolation Cubicle Air Handling System.

HEPA Filter Access Panel (2)

P/N 620722

Overview

There are two HEPA filter access panels on the front panel: one for the intake blower, and one for the exhaust (Figure 57). The access panels are identical and either can be used for either function. The procedure for replacing a HEPA filter access panel is the same for both.

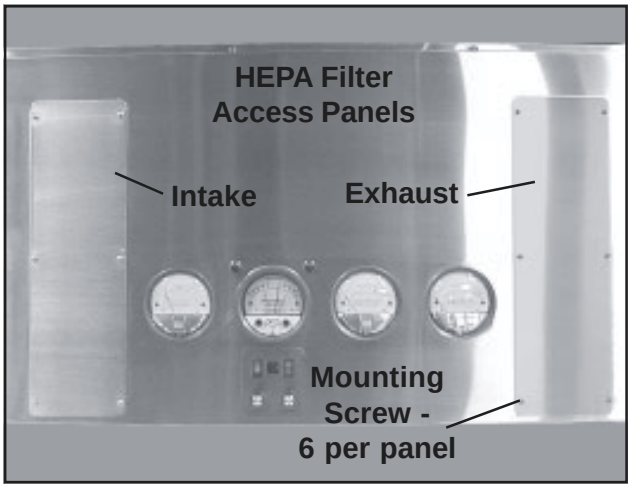


Figure 57. HEPA Filter Access Panels

Tools Required

- Phillips screwdriver
- Stepladder

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Procedure

1. With a Phillips screwdriver, unscrew the six mounting screws on the access panel (Figure 57) and remove the panel.

2. Secure the new access panel in place with the six mounting screws removed above.

Pre-filter Cover (2)

P/N 212131

Overview

There are two pre-filter covers in the cubicle: one for the intake blower, and one for the exhaust (Figure 58). The covers are identical and either can be used for either function. The procedure for replacing a pre-filter cover is the same for both.

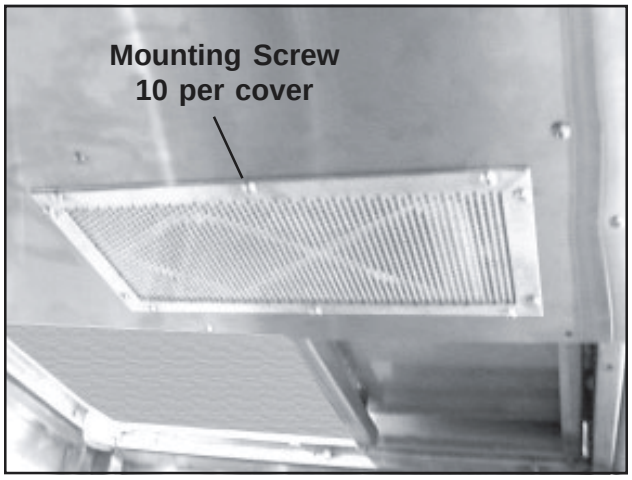


Figure 58. Typical Filter Cover (Exhaust shown)

Tools Required

- Phillips screwdriver
- Stepladder

Procedure

1. With a Phillips screwdriver, unscrew the ten mounting screws on the cover (Figure 58) and remove it from the panel.

2. Secure the new cover in place with the ten mounting screws removed above.

Front Panel

Refer to Layout Drawings for Part Number

Overview

These instructions guide you in removing and installing the front panel to replace a damage panel, or to facilitate working on the panel components or other areas of the cubicle.

Tools Required

- Phillips screwdriver
- 7/16 in. open-end wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. With a Phillips screwdriver, remove the nine mounting screws that hold the front panel to the columns and header (Figure 59).

3. While one person supports the panel, the second follows *Steps 4* through *9* to disconnect the air sensor lines and electrical cables.

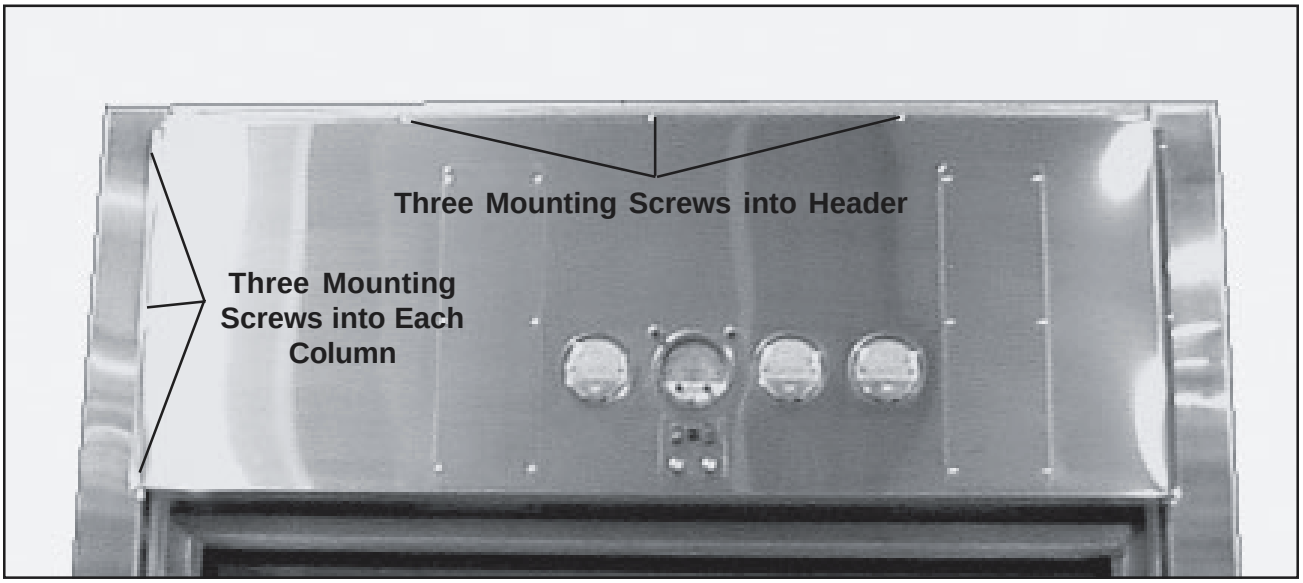


Figure 59. Mounting Screws on Front Panel

Note: Refer to the *Piping Diagram* on *Page 32*. Label all air sensor lines before you remove them from their fittings. Loosen all air sensor line fittings with a 7/16 in. open-end wrench.

4. Disconnect the white plastic connector on the black slit-sleeve cable (Figure 60).

5. Disconnect the 7-pin connector from the photohelic gauge.

6. Disconnect air sensor line 7 from the photohelic gauge.

7. Disconnect air sensor lines 5 and 6 from the air changes per hour gauge.

8. Disconnect air sensor lines 3 and 4 from the filter condition blower exhaust gauge.

9. Disconnect air sensor lines 1 and 2 from the filter condition blower intake gauge.

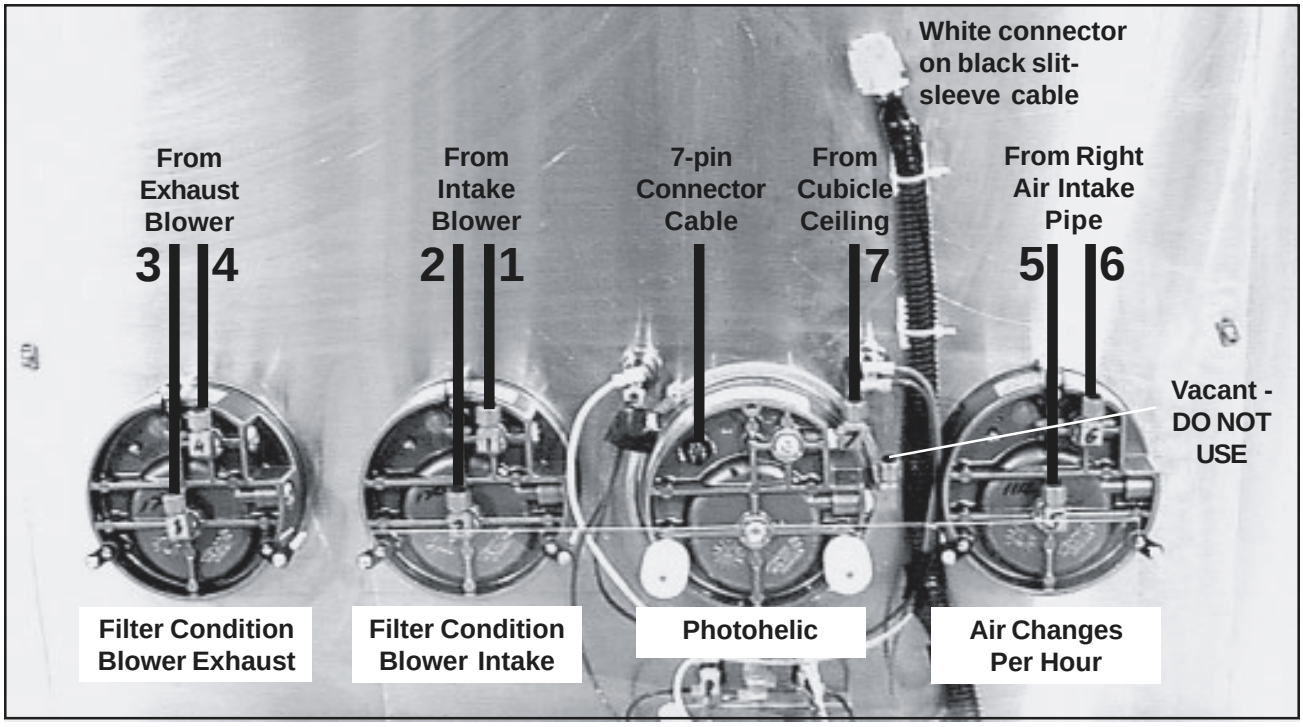


Figure 60. Piping & Wiring Connections on Rear of Front Panel

Installation

1. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

2. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6*.

Safety Shield

P/N 754823

Standoff (2)

P/N 756922

Overview

This clear, acrylic cover protects the electrical switches and controls. The cover is held in place by two 1-1/4 in. long, slotted head screws, and two 1 in. thick, white nylon standoffs.

Tools Required

- Small flat-blade screwdriver
- Phillips screwdriver
- 7/16 in. open-end wrench
- Stepladder

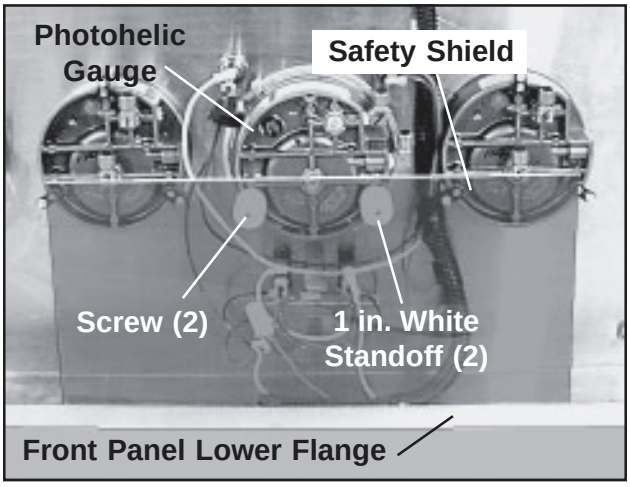


Figure 61. Safety Shield

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

***CAUTION:* Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.
3. With a small flat-blade screwdriver, remove the two screws that hold the safety shield to the rear of the photohelic gauge (Figure 61) and remove the safety shield and standoffs.

Installation

1. Slide the lower edge of the shield inside the lower flange of the front panel (Figure 61).
2. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier.
3. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.
4. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6*.

Blower Speed Controller Knob (2)

P/N 854190

Overview

The knobs on the blower speed controllers are identical and can be used for either function (Figure 62). The procedures for replacing knobs are the same for both the intake and exhaust controllers. It is not necessary to remove the front panel to replace these knobs.

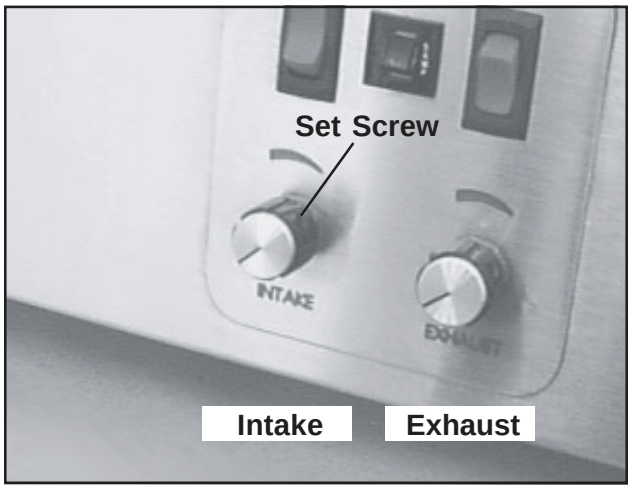


Figure 62. Blower Speed Controller Knobs

Tools Required

- Small flat-blade screwdriver
- Pliers (if replacing a missing knob)
- Stepladder

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Procedure

1. Rotate the knob fully clockwise (Figure 62).
   Note: If the knob is missing, use a pliers to rotate the empty shaft fully clockwise.

2. With a small screwdriver, rotate the set screw counterclockwise and pull the knob off the shaft.

3. Place the new knob on the shaft so setscrew seats on the flat portion of the knob shaft.

4. Tighten the setscrew.

Blower Speed Controller (2)

P/N 854179

Overview

There are two blower speed controllers in the Air Handling System: one for the intake blower, and one for the exhaust. The procedures for replacing a blower speed controller are the same for both the intake and exhaust controllers.

Tools Required

- 7/16 in. open-end wrench
- 9/16 in. wrench
- Small flat-blade screwdriver
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Blower Speed Controller Knob - Steps 1* and *2* on *Page 50*, and remove the knob from the speed controller you are replacing.

3. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

4. With a small flat-blade screwdriver, remove the two screws that hold the acrylic safety shield to the rear of the photohelic gauge (Figure 61) and remove the shield and standoffs.

5. On the rear of the panel, disconnect only the two wires from the blower speed controller you are removing (Figure 63):
   - Intake - black wire to the intake on/off switch
     black wire to the blue wire from the electrical box
   - Exhaust - black wire to the exhaust on/off switch
     black wire to the orange wire from the electrical box

   Refer to the wiring diagram on *Page 31*.

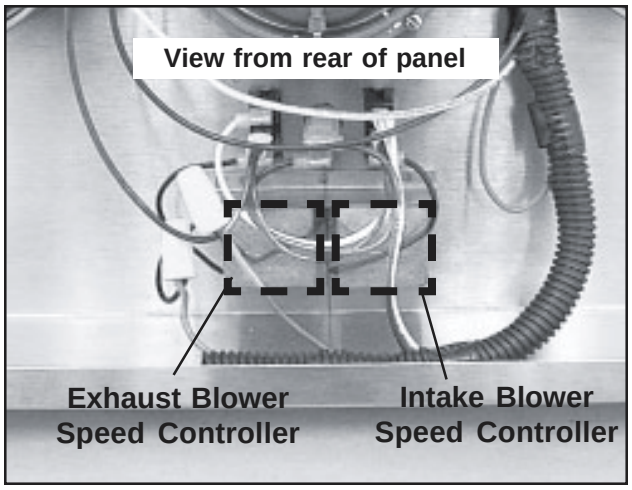


Figure 63. Blower Speed Controllers

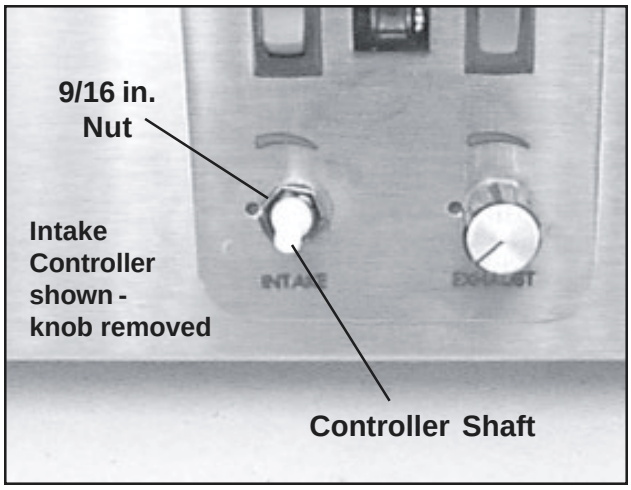


Figure 64. Removing a Blower Speed Controller

6. On the front of the panel, use a 9/16 in. wrench to unscrew the nut (Figure 64) on the controller shaft.

7. Pull the controller out of the rear of the panel.

Installation

1. Insert the shaft of the new controller through the hole in the panel from the rear.

2. Secure the controller in place with the 9/16 in. nut removed above.

3. Reconnect the two wires you removed in *Step 5* above to the controller.

4. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier.

5. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

6. Place the knob on the shaft so the base of the setscrew seats on the flat portion of the knob shaft, and tighten the setscrew.

7. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Blower On/Off Switch (2)

P/N 854198

Overview

There are two on/off switches in the Air Handling System: one for the intake blower, and one for the exhaust (Figure 65). The switches are identical and either can be used for either function. The procedure for replacing an on/off switch is the same for both.

Tools Required

- Phillips screwdriver
- 7/16 in. open-end wrench
- Small flat-blade screwdriver
- Needle-nose pliers
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

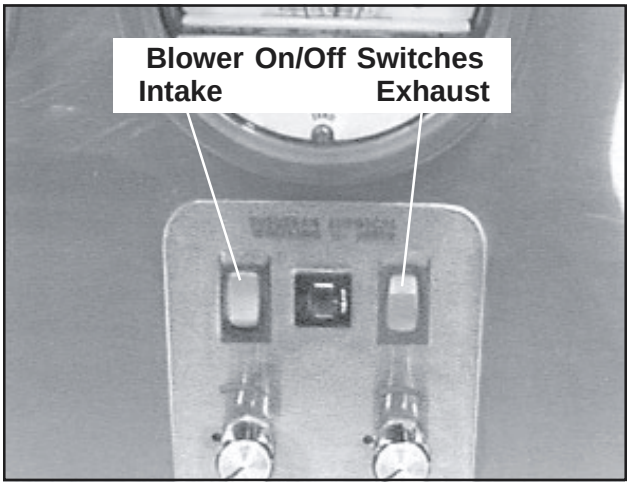


Figure 65. Blower On/Off Switches (front view)

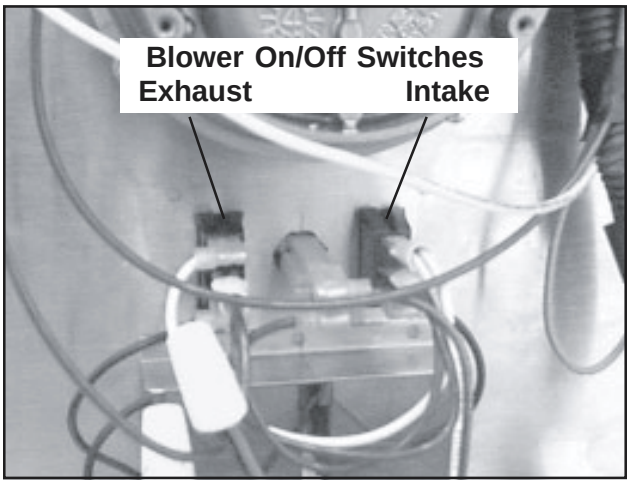


Figure 66. Blower On/Off Switches (rear view)

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. With a small flat-blade screwdriver, remove the two screws that hold the acrylic safety shield to the rear of the photohelic gauge (Figure 61) and remove the shield and standoffs.

4. With a needle-nose pliers, pull the wire connectors off the three terminals on the back of the switch (Figure 67). Refer to the wiring diagram on *Page 31*. **Note:** Label the connectors before removing them from the switch.

5. Simultaneously, squeeze the two top mounting arms of the switch toward each other, and down toward the switch body (Figure 67), and push the top of the switch out of the panel. Then, do the same to the bottom mounting arms and push the bottom of the switch out. Remove the switch from the front panel.

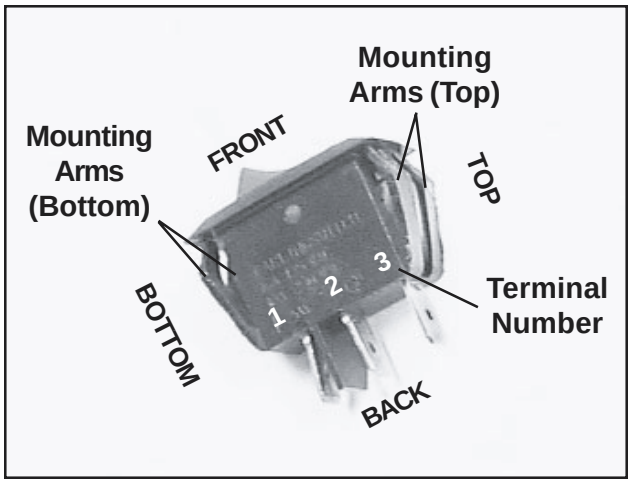


Figure 67. Blower On/Off Switch Removed from Panel

Installation

1. Notice the terminal numbers 1, 2, and 3 on the body of the new switch (Figure 67). Making sure the switch is right-side up (Terminal 3 on top), push it through the switch opening in the front of the panel until it snaps into place.

2. Push the wire connectors onto the correct terminals on the back of the switch. Refer to the wiring diagram on *Page 31*.

3. Slide the lower edge of the safety shield inside the lower flange of the front panel (Figure 61).

4. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier.

5. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

6. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Circuit Breaker

P/N 854294

Tools Required

- Phillips screwdriver
- 7/16 in. open-end wrench
- Small flat-blade screwdriver
- Needle-nose pliers
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

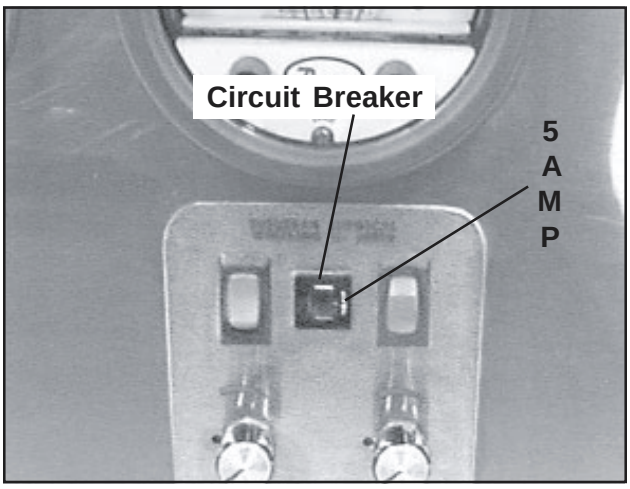


Figure 68. Circuit Breaker (front view)

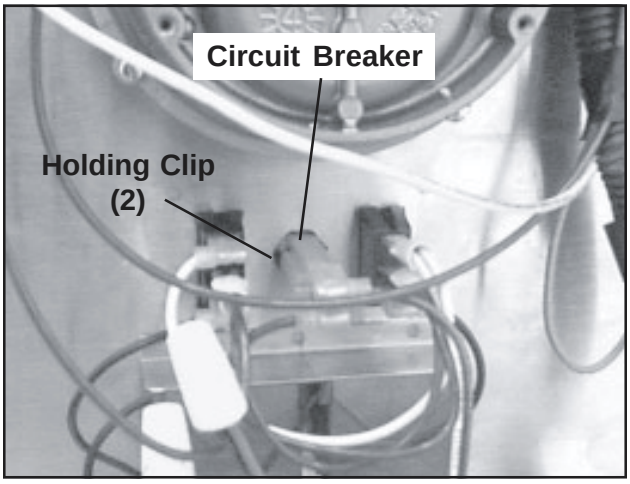


Figure 69. Circuit Breaker (rear view)

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.
3. With a small flat-blade screwdriver, remove the two screws that hold the acrylic safety shield to the rear of the photohelic gauge (Figure 61) and remove the shield and standoffs.
4. With a needle-nose pliers, pull the two wire connectors from the terminals on the back of the circuit breaker (Figure 69).
5. With a needle-nose pliers, squeeze the two black holding clips on the circuit breaker and push the breaker out of the front of the panel.

Installation

1. Make sure the circuit breaker is right-side up - the words "**5AMP**" on the front should be readable (Figure 68). Insert the breaker into the opening in the front panel until it snaps into place.

2. Push the wire connectors onto the correct terminals on the back of the switch. Refer to the wiring diagram on *Page 31*.

3. Slide the lower edge of the safety shield inside the lower flange of the front panel (Figure 61).

4. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier.

5. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

6. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Indicator Lamp Lens (2)

Red - P/N 854352
Green - P/N 854353

Overview

There is a lens for each of the two indicator lamps in the Air Handling System: a red lens for negative air pressure, and a green lens for positive air pressure (Figure 70). Except for color, the lenses are identical. The procedure for replacing an indicator lamp lens is the same for both the negative and positive functions. It is not necessary to remove the front panel to replace these lenses.

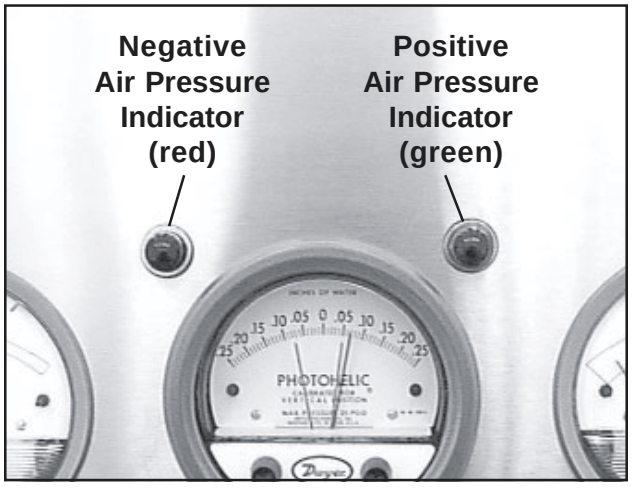


Figure 70. Indicator Lamp Lenses

Tool Required

- Stepladder

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Procedure

1. Unscrew the lens by hand from the lamp base (Figure 70).

2. By hand, screw the new lens into the lamp base. **Note:** Screw the lens in very gently - it is made of soft plastic and can easily be cross-threaded if excessive force is used.

Indicator Bulb (2)

P/N 854354

Overview

There are two indicator bulbs in the Air Handling System: one in the negative pressure indicator, and one in the positive pressure indicator (Figure 71). The bulbs are identical and the procedure for replacing a bulb is the same for both. It is not necessary to remove the front panel to replace these bulbs.

Tool Required

- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

Procedure

1. By hand, unscrew the colored lens from the lamp base on the front panel (Figure 70).

2. To remove the bulb, push it in, then turn it about 1/4-turn counterclockwise.

3. Notice the two studs on the base of the new bulb. Insert the bulb into the lamp base so that these studs enter the corresponding notches inside the base. Push the bulb in as far as you can, then turn it about 1/4-turn clockwise until it seats.

4. Screw the lens into the lamp base. **Note:** Screw the lens in very gently - it is made of soft plastic and can easily be cross-threaded if excessive force is used.

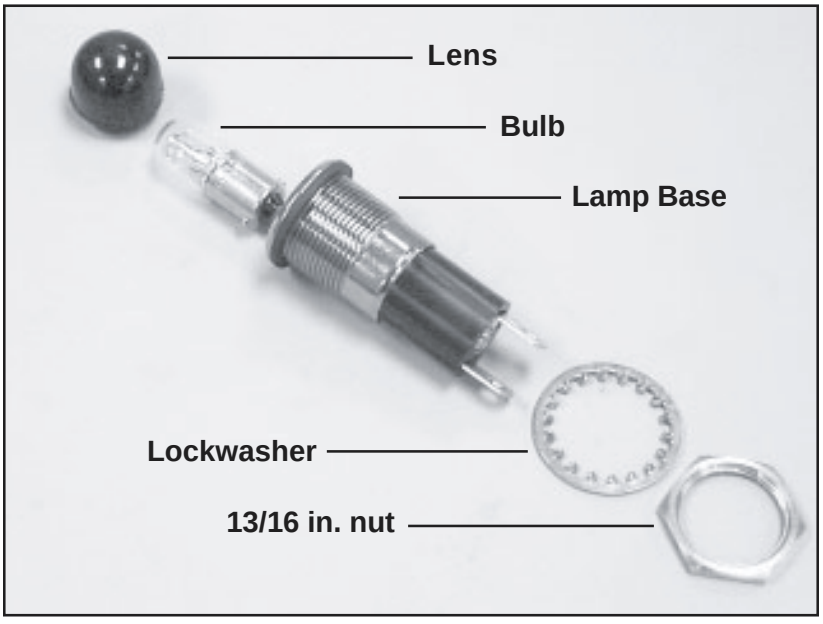


Figure 71. Indicator Lamp Parts

Indicator Lamp Base (2)

P/N 854351

Overview

There are two indicator lamps in the Air Handling System: one for negative air pressure, and one for positive air pressure (Figure 70). The procedure for replacing an indicator lamp is the same for both.

Tools Required

- Phillips screwdriver
- 7/16 in. open-end wrench
- 13/16 in. open-end wrench
- Stepladder

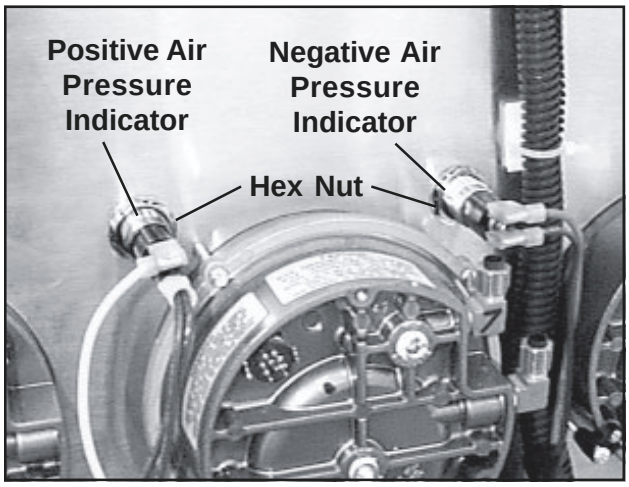


Figure 72. Indicator Lamps (rear view)

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.
3. Pull the wire connectors off the two terminals on the back of the lamp base (Figure 72).
4. On the rear of the front panel (Figure 72), use a 13/16 in. open-end wrench to unscrew the hex nut on the lamp base.
5. Remove the hex nut and the lock washer from the lamp base.
6. Push the lamp base out through the front of the panel.

Installation

Note: Perform *Step 1* only if a bulb is not present in the lamp base.

1. Notice the two studs on the base of the bulb. Insert the new bulb into the lamp base so that these studs enter the corresponding notches inside the base. Push the bulb in as far as you can, then turn the bulb about 1/4-turn clockwise until it seats.

2. If the lens is not the correct color, remove the lens from the old lamp base and put it into the new base. **Note:** Screw the lens in very gently - it is made of soft plastic and can easily be cross-threaded if excessive force is used.

3. Push the lamp base through the opening in the front of the panel.

4. On the rear of the panel, secure the lamp base with the lockwasher and the 13/16 in. nut.

5. Push the wire connectors onto the terminals on the back of the lamp base. Refer to the wiring diagram on *Page 31*.

6. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

7. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Photohelic Gauge

P/N 853731

Overview

Replacing the photohelic gauge requires removing the front panel from the cubical.

Tools Required

- 7/16 in. open-end wrench
- Small flat-blade screwdriver
- Phillips screwdriver
- Stepladder

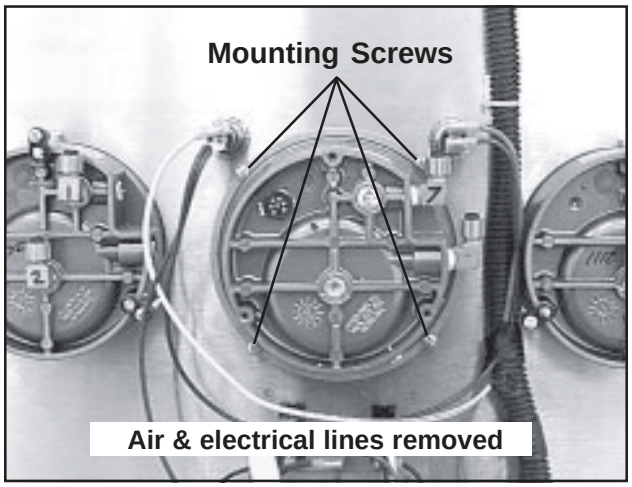


Figure 73. Photohelic Gauge - Mounting Screws

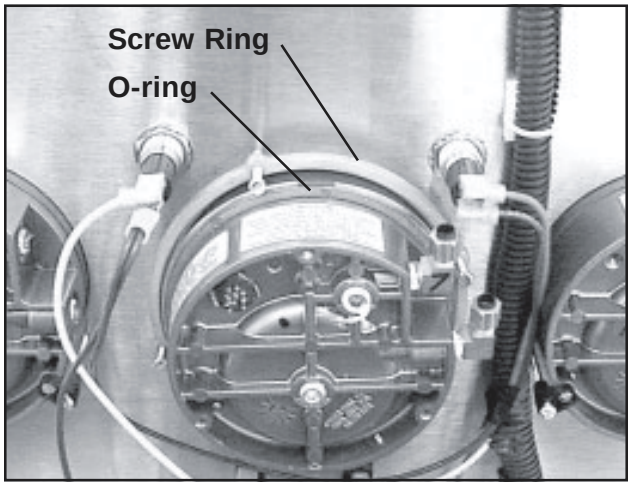


Figure 74. Screw Ring & O-ring

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

***CAUTION:* Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. With a small flat-blade screwdriver, remove the two screws that hold the acrylic safety shield to the rear of the photohelic gauge (Figure 61) and remove the shield and standoffs.

4. Disconnect air sensor line 7 from the photohelic gauge (Figure 60).

5. Disconnect the 7-pin connector from the rear of the photohelic gauge.

6. Loosen the four mounting screws (Figure 73) until the gauge is loose in the panel.

7. Move the screw ring toward the panel enough to expose the O-ring (Figure 74).

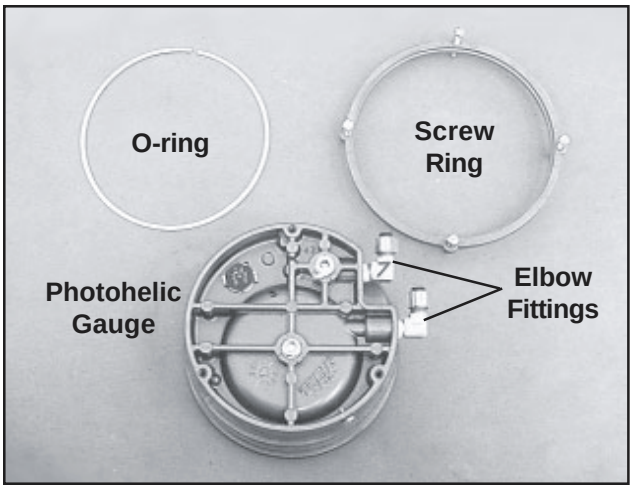


Figure 75. Photohelic Gauge, Mounting Components & Elbow Fittings

8. Remove the O-ring from its groove in the gauge body.

9. Remove the screw ring from the gauge.

10. Pull the gauge out of the front of the panel.

11. With a 7/16 in. open-end wrench, remove both elbow fittings from the gauge and retain them for installation (Figure 75).

Installation

1. Install both elbow fittings into the new gauge (Figure 75).

2. Slide the gauge through the opening in the front panel. Make sure the gauge is right-side up.

3. Slip the screw ring (Figure 74) over the gauge body with the screw heads facing out.

4. Slip the O-ring over the gauge body and seat it in its groove around the gauge body.

5. Screw in the four mounting screws (Figure 73) until the gauge is seated firmly in the panel. Again, make sure the gauge face is right-side up.

6. Connect air sensor line 7 to the photohelic gauge (Figure 60).

7. Connect the 7-pin connector to rear of the photohelic gauge (Figure 60). **Note:** Make sure the pins in the terminal are straight and enter the correct holes in the connector.

8. Slide the lower edge of the safety shield inside the lower flange of the front panel (Figure 61).

9. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier.

10. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

11. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6*.

Filter Condition Blower Intake & Exhaust Gauges

P/N 854174

Air Changes Per Hour Gauge

P/N 853628

Overview

These three gauges are similar in appearance and are removed and installed in the same way. The primary visual difference between the filter condition gauges is the text, **INTAKE** or **EXHAUST** on the faces of the gauges.

Tools Required

- Phillips screwdriver
- Small flat-blade screwdriver
- 7/16 in. open-end wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

Note: If you are replacing the filter condition blower EXHAUST gauge, omit *Step 3*.

3. With a small flat-blade screwdriver, remove the two screws that hold the acrylic safety shield to the rear of the photohelic gauge (Figure 61) and remove the shield and standoffs.

4. With a 7/16 in. open-end wrench, disconnect the air sensor lines only from the gauge you are replacing (Figure 60):
   - From the filter condition blower exhaust gauge - air sensor lines 3 and 4
   - From the filter condition blower intake gauge - air sensor lines 1 and 2
   - From the air changes per hour gauge - air sensor lines 5 and 6.

   Refer to the piping diagram on *Page 32*.

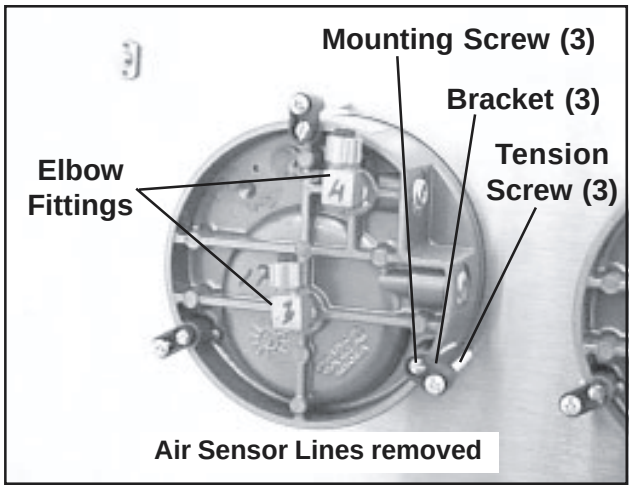


Figure 76. Filter Condition Blower Exhaust Gauge (other two gauges similar)

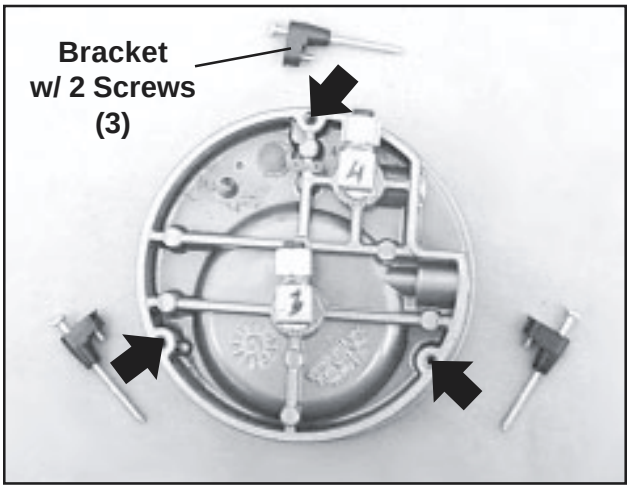


Figure 77. Blower Gauge & Mounting Hardware

5. With a flat-blade or Phillips screwdriver, loosen the three tension screws on the back of the gauge (Figure 76).

6. With a small flat-blade screwdriver, unscrew the three mounting screws and remove the three brackets, each with the two screws attached, from the gauge.

7. Pull the gauge out of the front of the panel.

8. With a 7/16 in. open-end wrench, remove both elbow fittings from the gauge and retain them for installation (Figure 76).

Installation

1. Install both elbow fittings into the new gauge (Figure 76).

2. Slide the gauge through the opening in the front panel so that the gauge faces out. Make sure the gauge is right-side up.

3. Mount the small screws in the three brackets onto the rear of the gauge at the points indicted by the arrows in Figure 77.

4. Tighten down all three tension screws (Figure 76) until the gauge is held firmly in place in the panel.

5. Connect the two air sensor lines to the elbow fittings. Refer to *Step 4* on *Page 62*.

Note: If you are replacing the filter condition blower EXHAUST gauge, omit *Step 6*.

6. Mount the safety shield and standoffs to the rear of the photohelic gauge with the two screws removed earlier (Figure 61).

7. Refer to *Installing the Front Panel* on *Page 28* and follow *Steps 1* through *9*.

8. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6*.

Air Intake Pipes, Right & Left

Right - P/N 215487
Left - P/N 215486

Overview

There are two PVC air intake pipes, one on the right and one on the left. The right pipe has two brass fittings that connect to air sensor lines that run to the air changes per hour gauge on the front panel.

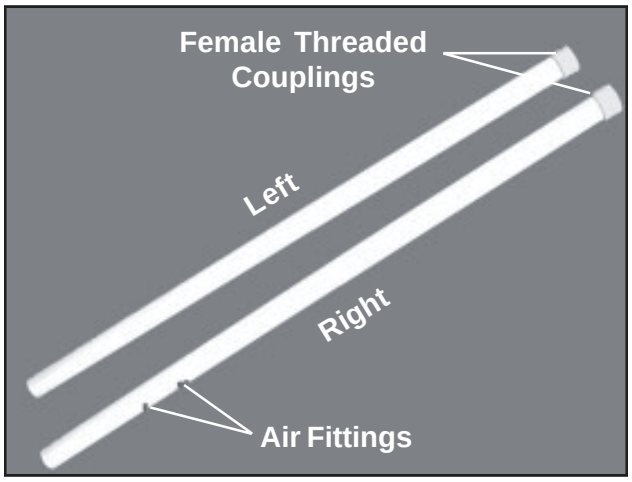


Figure 78. PVC Air Intake Pipes

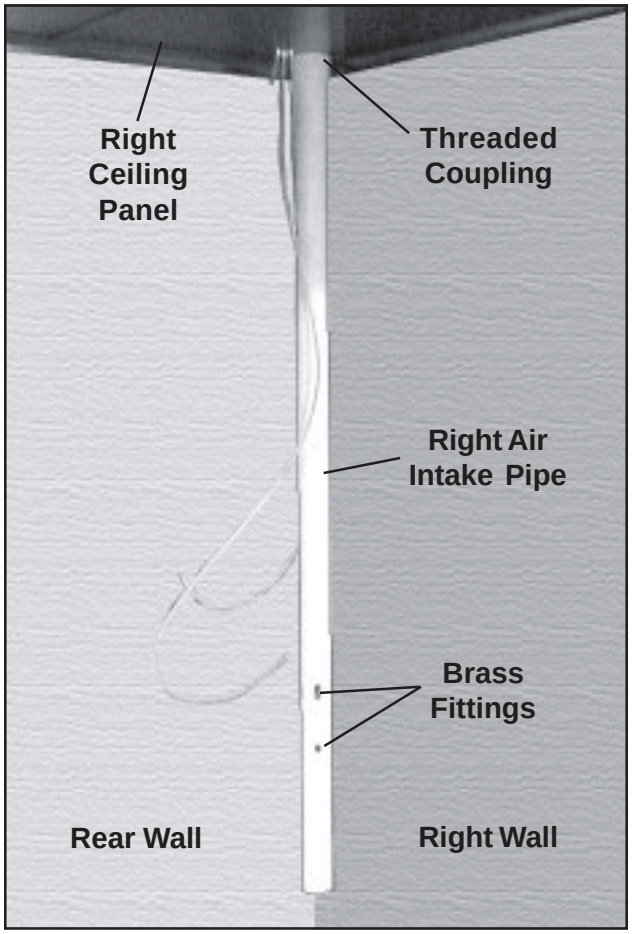


Figure 79. Right Air Intake Pipe

Tools Required

- 7/16 in. open-end wrench
- Flat-blade screwdriver

Removal - Right Air Intake Pipe

1. Open the cubicle doors.

2. With a 7/16 in. open-end wrench, disconnect air sensor lines 5 and 6 from the brass fittings near the lower end of the pipe (Figure 80).

3. Loosen the hose clamp (Figure 81) that holds the pipe to the wall and free the pipe from the clamp. Leave the bracket secured to the wall.

4. Unscrew the pipe from the threaded coupling (Figure 79) and discard it.

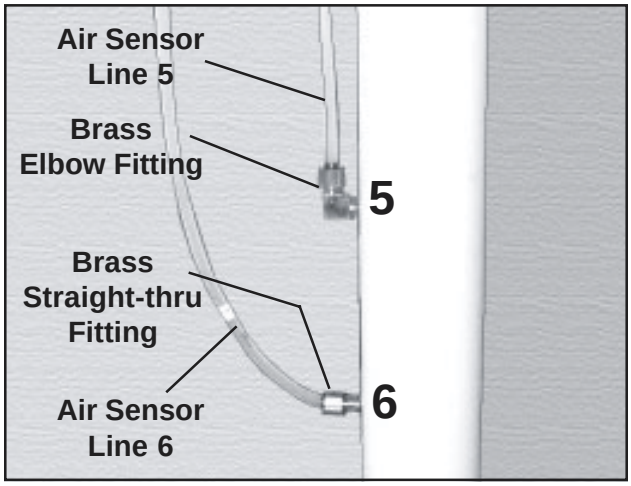


Figure 80. Air Sensor Line Connections on Right Air Intake Pipe

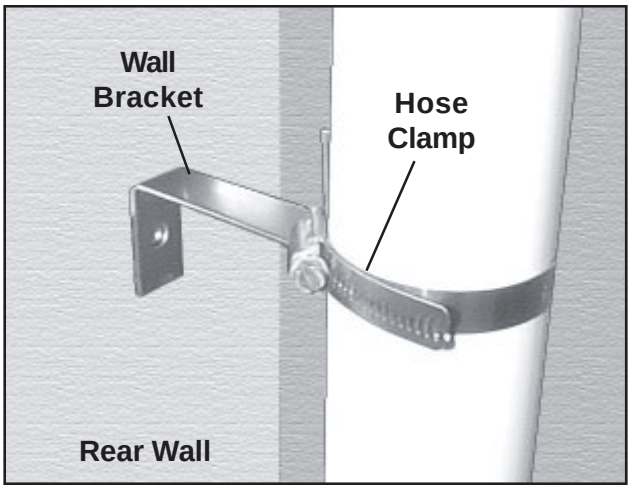


Figure 81. Air Intake Pipe with Wall Bracket

Installation - Right Air Intake Pipe

Note: DO NOT apply adhesive to this joint - it should be left unglued so the pipe can be removed for servicing.

1. Screw the female threaded coupling on the new right air intake pipe onto the male threaded coupling in the right ceiling panel (Figure 79). Make sure the air fittings are easily accessible so you can connect the air sensor lines.

2. Insert the pipe into the hose clamp and tighten the hose clamp (Figure 81).

3. Connect the air sensor lines 5 and 6 to the brass fittings 5 and 6 (Figure 80). Tighten the hex nut on each fitting with a 7/16 in. open-end wrench.

4. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6.*

Removal - Left Air Intake Pipe

1. Open the cubicle doors.

2. Loosen the hose clamp (Figure 81) that holds the pipe to the wall and free the pipe from the clamp. Leave the bracket secured to the wall.

3. Unscrew the pipe from the threaded coupling and discard it.

Installation - Left Air Intake Pipe

Note: DO NOT apply adhesive to this joint - it should be left unglued so the pipe can be removed for servicing.

1. Screw the female threaded coupling on the left air intake pipe onto the male threaded coupling in the left ceiling panel.

2. Insert the pipe into the hose clamp and tighten the hose clamp.

3. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *6.*

Left Ceiling Panel

Refer to Layout Drawings for Part Number

Overview

There are three ceiling panels in the Isolation Cubicle: left, right, and center. The left panel can be replaced with only minimum disassembly of the cubicle.

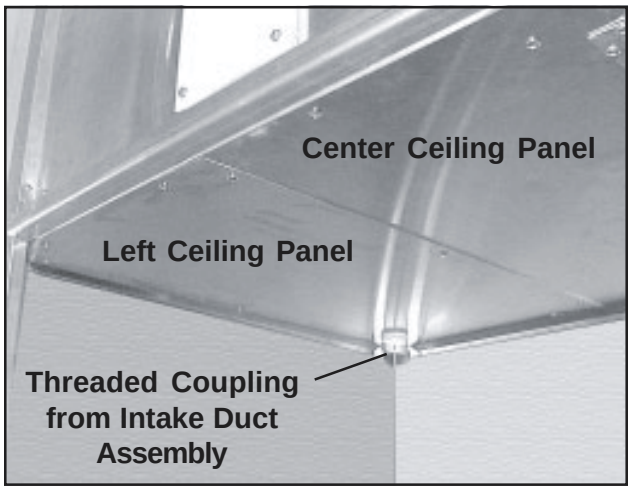


Figure 82. Left Ceiling Panel

Tools Required

- 7/16 in. open-end wrench
- Flat-blade screwdriver

CAUTION: **We recommend that this procedure be done by at least two people.**

Removal

1. Open the cubicle doors.

2. Loosen the hose clamp that holds the left air intake pipe to the wall and free the pipe from the clamp. Leave the bracket secured to the wall.

3. Unscrew the pipe from the threaded coupling (Figure 79) but DO NOT discard it.

4. Unscrew the ten Phillips screws from the front, rear, and sides of the panel, and remove the panel from the cubicle ceiling.

Installation

1. Hold the left ceiling panel in place under the base frame to the left of, and overlapping, the center panel (Figure 82).

2. Pass the threaded coupling on the left end of the intake duct assembly down through the large hole in the left panel .

3. Secure the panel to the base frame with ten 1/2 in. Phillips screws into the holes in the front, rear, and sides. The three screws on the right side also secure the center ceiling panel.

Note: In *Step 4*, DO NOT apply adhesive to this joint - it should be left unglued so that the pipe can be removed for servicing.

4. Screw the female threaded coupling on the left air intake pipe onto the male threaded coupling from the air intake duct projecting through the left ceiling panel.

5. Insert the pipe into the hose clamp and tighten the hose clamp.

Right Ceiling Panel

Refer to Layout Drawings for Part Number

Overview

There are three ceiling panels in the Isolation Cubicle: left, right, and center. The right panel can be replaced with only minimum disassembly of the cubicle.

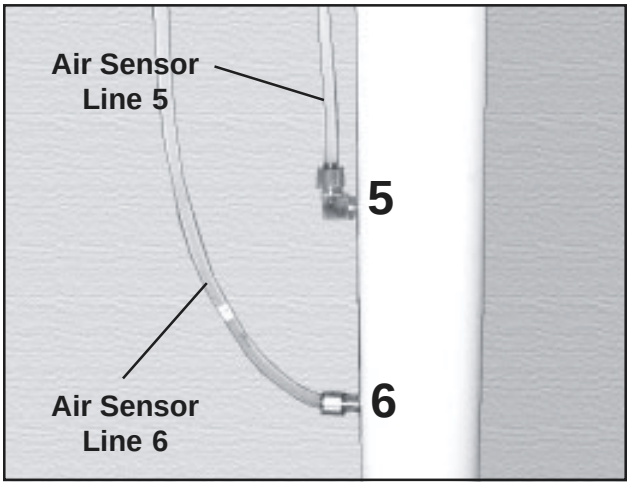


Figure 83. Air Sensor Line Connections on Air Intake Pipe

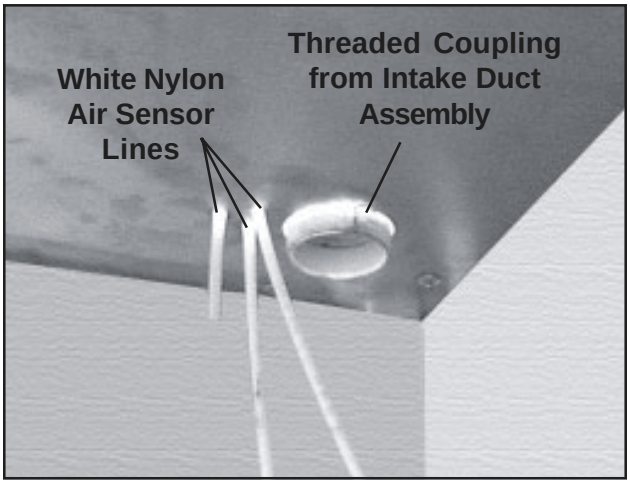


Figure 84. Air Sensor Lines & Coupling Passing Through Right Ceiling Panel

Tools Required

- 7/16 in. open-end wrench
- Flat-blade screwdriver

***CAUTION:* We recommend that this procedure be done by at least two people.**

Removal

1. Open the cubicle doors.
2. With a 7/16 in. open-end wrench, disconnect air sensor lines 5 and 6 from the right air intake pipe (Figure 83).
3. Loosen the hose clamp that holds the right air intake pipe to the wall and free the pipe from the clamp. Leave the bracket secured to the wall.
4. Unscrew the pipe from the threaded coupling (Figure 79) but DO NOT discard it.
5. Push the three white nylon air sensor lines up through the right ceiling panel (Figure 84).
6. Unscrew the ten Phillips screws from the front, rear, and sides of the panel, and remove the panel from the cubicle ceiling.

Installation

1. Hold the right ceiling panel in place under the base frame to the right of, and overlapping, the center panel.
2. While supporting the panel, pass the three white nylon air lines (5, 6, & 7) down through the three small holes in the panel (Figure 89). Any line can go through any hole - it makes no difference.
3. Pass the threaded coupling on the right end of the intake duct assembly down through the large hole in the right panel.

4. Secure the panel to the base frame with ten 1/2 in. Phillips screws into the holes in the front, rear, and sides. The three screws on the left side also secure the center ceiling panel.

Note: In *Step 4*, DO NOT apply adhesive to this joint - it should be left unglued so that the pipe can be removed for servicing.

5. Screw the female threaded coupling on the right air intake pipe onto the male threaded coupling in the right ceiling panel.

6. Insert the pipe into the hose clamp and tighten the hose clamp.

7. Connect air sensor lines 5 and 6 into the brass fittings 5 and 6 (Figure 83). Tighten the hex nut on each fitting with a 7/16 in. open-end wrench.

8. Sensor line 7 does not connect to any fitting. Just make sure that it projects into the cubicle at least three or four inches.

Center Ceiling Panel

Refer to Layout Drawings for Part Number

Overview

There are three ceiling panels in the Isolation Cubicle: left, right, and center. To replace the center panel, you must first remove the left and right panels.

Tools Required

- Phillips screwdriver
- Small flat-blade screwdriver
- 7/16 in. open-end wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

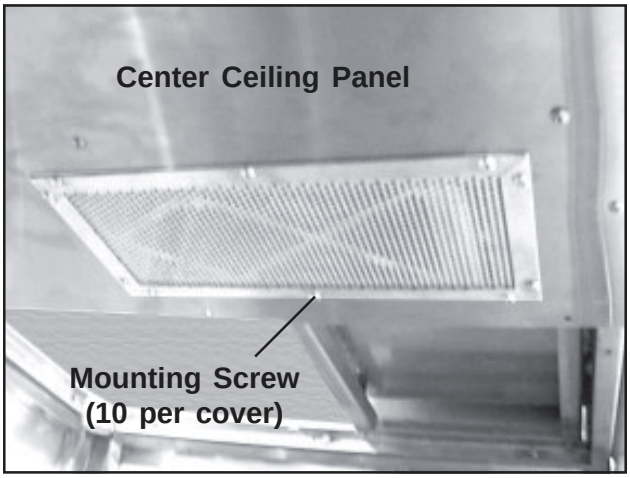


Figure 85. Typical Filter Cover (exhaust)

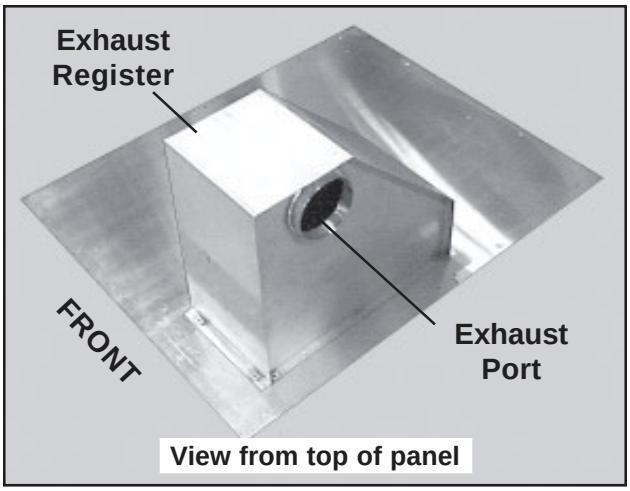


Figure 86. Center Ceiling Panel with Exhaust Register

Removal

1. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4*, starting on *Page 66*, and remove the left ceiling panel from the cubicle.

2. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6*, starting on *Page 67*, and remove the right ceiling panel from the cubicle.

3. With a Phillips screwdriver, unscrew the ten mounting screws on the exhaust pre-filter cover (Figure 85) and remove the cover and the pre-filter from the ceiling panel.

4. Loosen the hose clamp on the exhaust register end of the exhaust flexible duct and disconnect the duct from that exhaust port (Figure 86).

5. Unscrew the seven Phillips screws from the center panel, and remove the panel and attached exhaust register from the cubicle ceiling (Figure 86).

Installation

Start at *Installing the Center Ceiling Panel* on *Page 22*, and continue on through this manual until reaching *Installing the Front Panel* on *Page 28*.

Inner Panel

Refer to Layout Drawings for Part Number

Overview

Replacement of the inner panel (Figure 87) requires removal of the front panel.

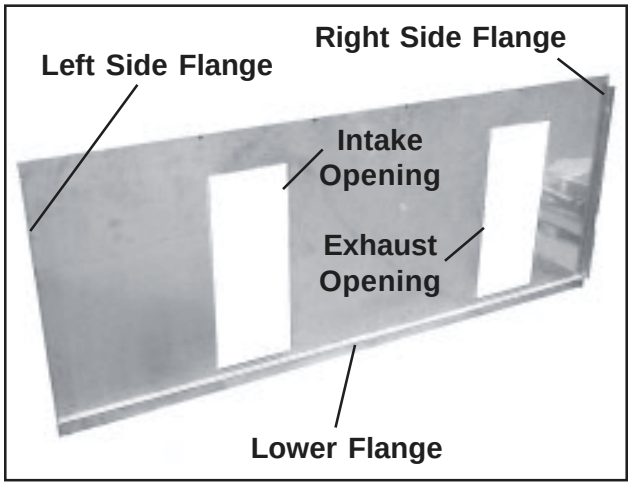


Figure 87. Front View of Typical Inner Panel

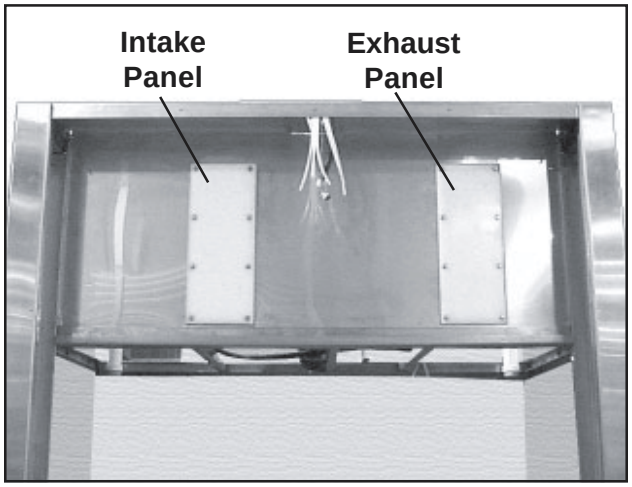


Figure 88. Polyethylene Panels

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. open-end wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Close the cubicle doors.

4. With a flat-blade screwdriver, remove the eight screws on each polyethylene panel (Figure 88) and remove panels from the cubicle.

5. Remove the four mounting screws holding the inner panel to the header (Figure 89), and the two screws holding the panel to each column, and remove the panel from the cubicle.

Installation

1. Refer to *Installing the Inner Panel - Steps 1* through *4* on *Page 15* and install the inner panel.

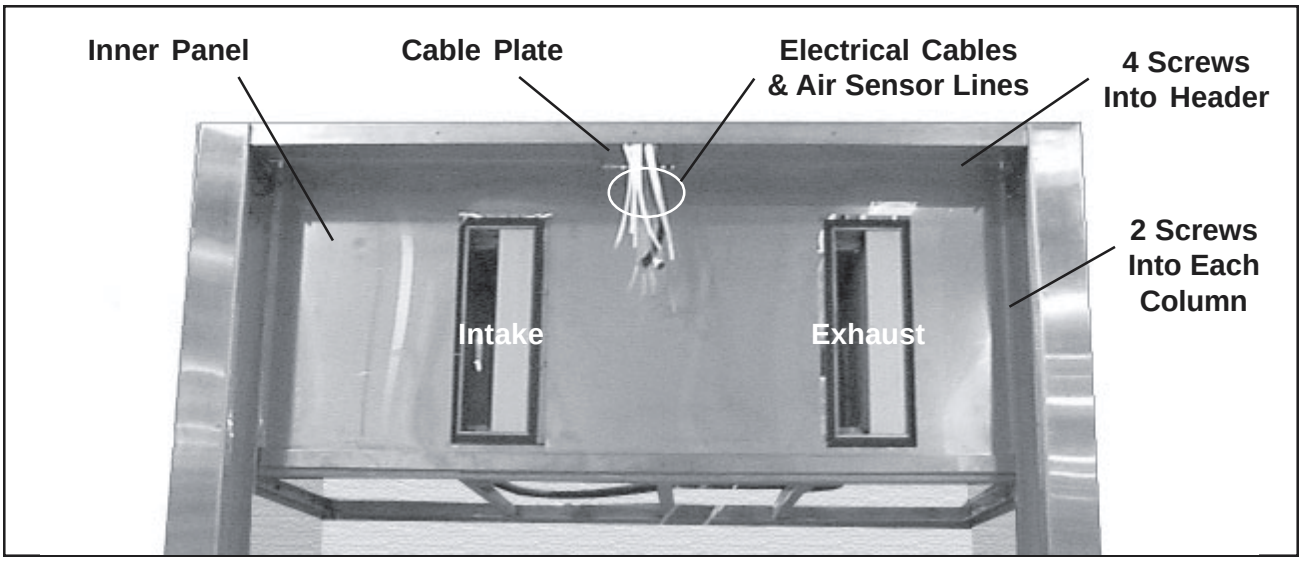


Figure 89. Front View of Cubicle with Inner Panel Installed

Note: Be careful as you tighten the panel screws on the polyethylene panels. Screw them down only tight enough to compress the gasket behind the panel. The blower box is made of aluminum, not stainless steel, and forcing the screws down too tight can damage the threads in the mounting holes.

2. Replace the polyethylene panel and loosely insert the eight screws (Figure 88).

3. Working out from the center, tighten down the eight screws enough to achieve an airtight fit.

4. Refer to *Installing the Front Panel - Steps 1* through *9* starting on *Page 28* and install the front panel.

IMPORTANT - INSTALLATION SEQUENCE INFORMATION
At this point, return to the *Isolation Cubicle Owner's Manual, 702743, Page 18,* and follow the instructions under *Installing the Rear Door.* Continue to follow the instructions in that manual until you have finished installing and adjusting the door latches. At that point, return to *Installing the Front Panel* on *Page 28* in this *Air Handling System Manual, 702756.*

Intake Air Duct

Call SSCI for Part Number

Overview

The intake air duct is not a single part, but an assembly of several parts. Order the parts listed under *Parts Required* below, or alternatively, order just the distribution box and obtain the 2 in. diameter PVC pipe, elbows, and threaded couplings locally. Follow the instructions below to assemble and install the intake air duct.

Parts Required

(Refer to Figure 90)

- Distribution box - P/N 212132-1
- Long pipe (2) - see Layout Drawing for part number
- Elbow (2) - P/N 854180
- Short pipe & threaded coupling (2) - P/N 215488

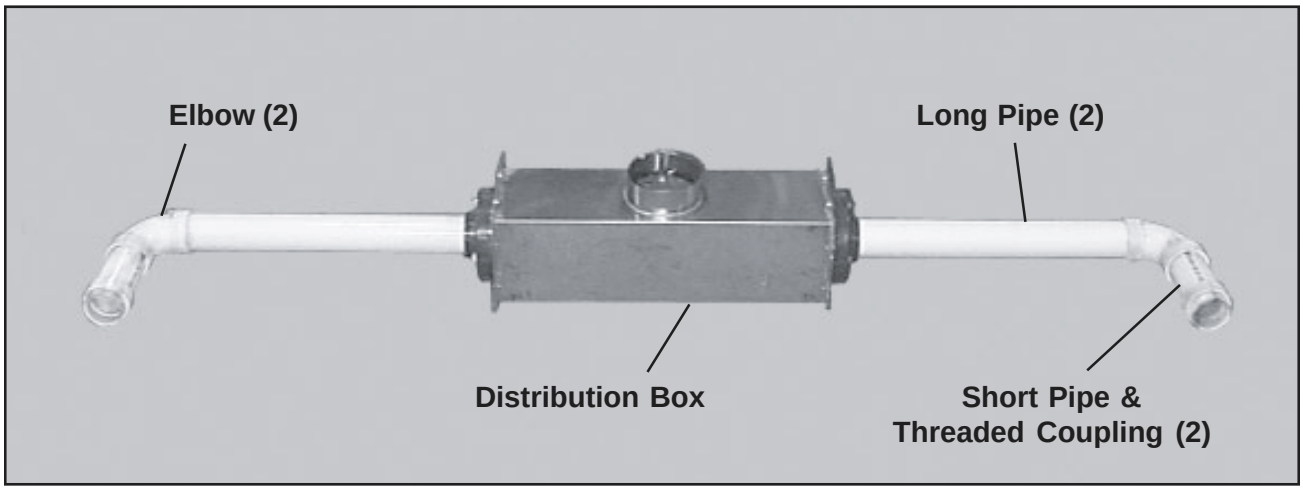


Figure 90. Intake Air Duct (fully assembled)

Tools & Supplies Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- Stepladder
- Adhesive for PVC

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9,* starting on *Page 47,* and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5,* on *Page 70,* and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 3* through *5* on *Page 69* and remove the center ceiling panel.

7. Loosen the hose clamp on the distribution box end of the intake flexible duct (Figure 91), and disconnect the duct from the distribution box.

8. Lift the intake air duct off its support arms and maneuver the assembly out of the cubicle.

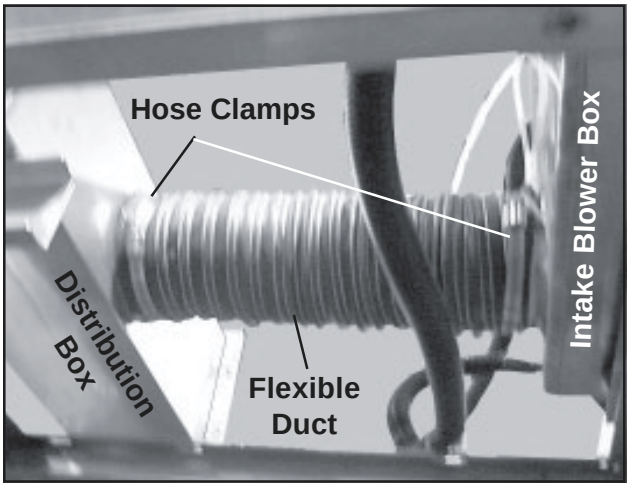


Figure 91. Intake Flexible Duct

Installation

Start at *Assembling & Installing the Intake Air Duct* on *Page 17,* and continue on through this manual until reaching *Installing the Front Panel* on *Page 28.* Omit those sections covering components that were not removed during disassembly of the cubicle.

Blower Box Assembly, Intake & Exhaust

P/N 212574

Overview

There are two blower boxes (Figure 92) in the Air Handling System: one for intake, and one for exhaust. The blower boxes are identical and either box can be used for either function. The removal and installation procedures for the intake and exhaust boxes are similar, but not identical.

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- Stepladder

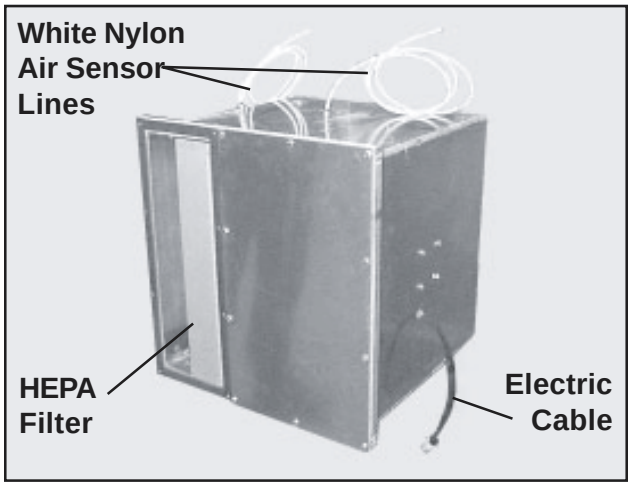


Figure 92. Typical Blower Box Assembly

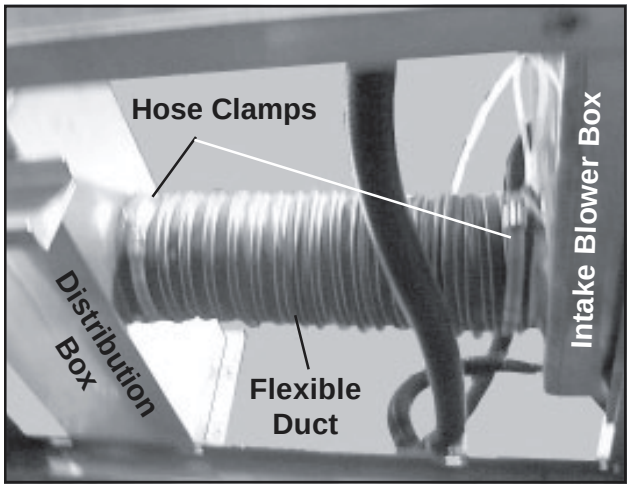


Figure 93. Intake Flexible Duct Mounted in Place

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

***CAUTION:* Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

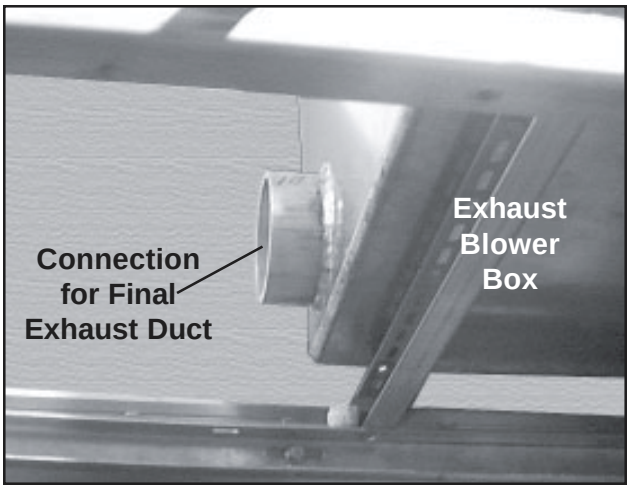


Figure 94. Final Exhaust Duct Connection

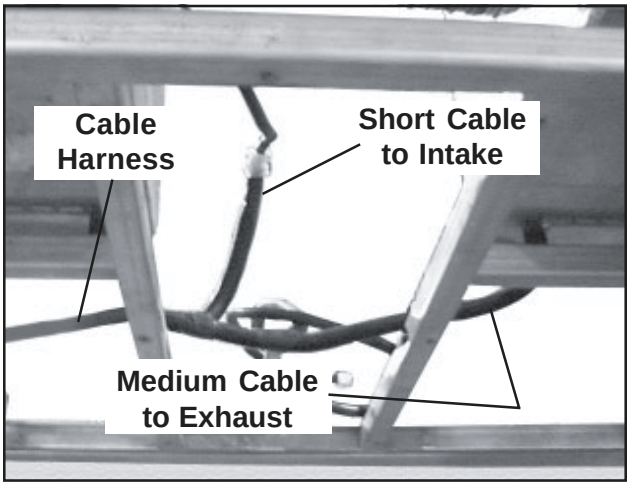


Figure 95. Blower Box Slit-sleeve Cable Connections

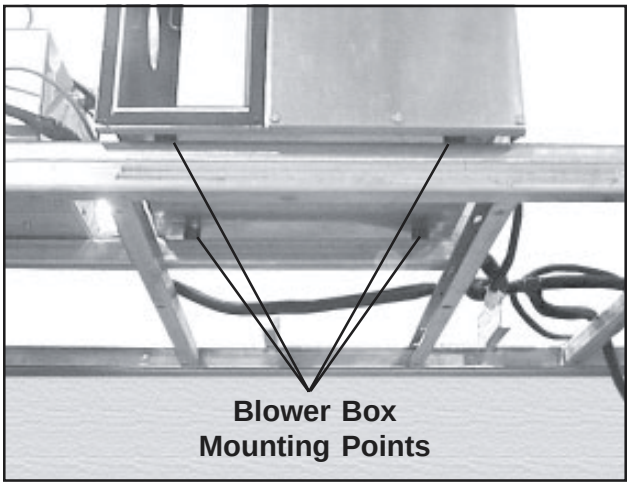


Figure 96. Blower Box on Base Frame (intake box shown - exhaust similar)

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

Note: If you are replacing the EXHAUST blower box, you DO NOT have to disconnect the intake flexible duct - omit *Step 7*.

7. Loosen the two hose clamps on the intake flexible duct (Figure 93), and disconnect the duct from the intake blower box and the distribution box.

Note: If you are replacing the INTAKE blower box, you DO NOT have to disconnect the final exhaust flexible duct - omit *Step 8*.

8. Loosen the two hose clamps on the final exhaust flexible duct (Figure 94), and disconnect the duct from the intake blower box and the building air handling exhaust system outlet.

9. When you removed the front panel, you disconnected air sensor lines 1 and 2 from the filter condition blower intake gauge, and air sensor lines 3 and 4 from the exhaust gauge. Pull only the lines for the blower box you are replacing out of the cable plate (Figure 12).

10. Disconnect black slit-sleeve cable from the cable harness to the electrical box (Figure 95).

11. With a 7/16 in. wrench, unscrew the four screws (and washers) from the mounting points under the blower box (Figure 96) and remove the blower box from the cubicle.

Installation

Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

Polyethylene Panel (2)

P/N 753492

Overview

There is one polyethylene panel on each blower box (Figure 98). The two panels are identical and either can be used on either blower box. These removable panels provide easy access to the interior of the blower box to allow changing the HEPA filter.

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- Stepladder

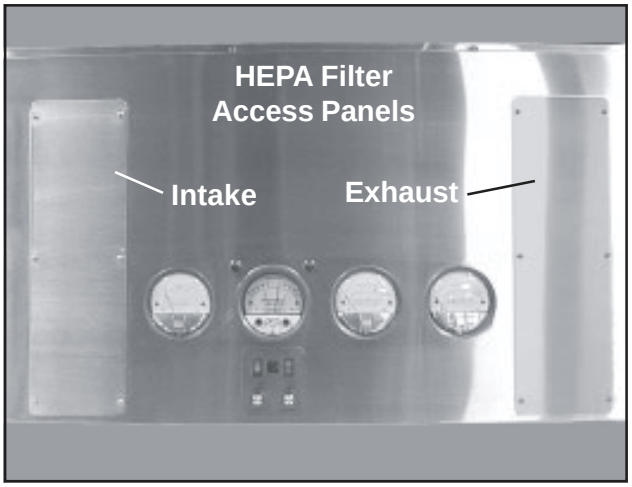


Figure 97. HEPA Filter Access Panels

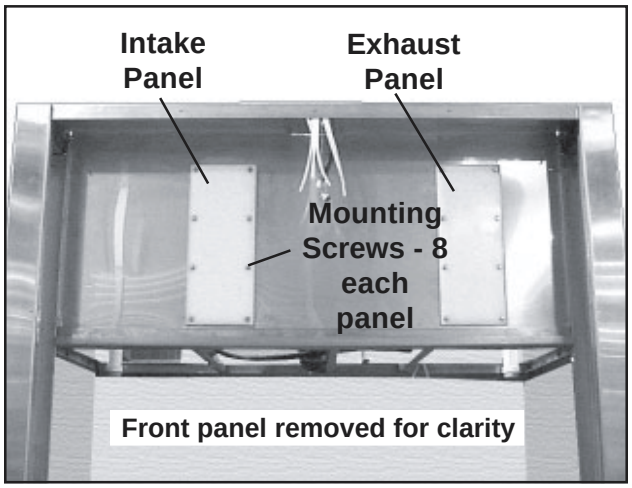


Figure 98. Polyethylene Panels

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

Removal

1. With a Phillips screwdriver, remove the six screws on the appropriate access panel next to the gauges (Figure 97) and remove the panel.

2. With a flat-blade screwdriver, remove the eight screws on the polyethylene panel (Figure 98), and remove panel.

Installation

Note: Be careful as you tighten the eight panel screws. Screw them down only enough to compress the gasket behind the panel. The blower box is made of aluminum, not stainless steel, and forcing the screws down too tight can damage the threads in the mounting holes.

3. Replace the polyethylene panel and loosely insert the eight screws (Figure 98).

4. Working out from the center, tighten down the eight screws enough to achieve an airtight fit.

5. Replace the access panel and secure with the six screws (Figure 97).

Gasket (Polyethylene Panel)(2 Sets)

P/N 754495

Overview

Behind each polyethylene panel is a gasket (Figure 99) to prevent air leakage from the blower box. Each gasket consists of four parts, cut to length, and bonded to the inside of the blower box. The gaskets on the two blower boxes are identical and are removed and installed the same way. It may not be necessary to replace all four gasket segments; you can replace only those segments that are damaged.

Tools & Supplies Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. open-end wrench
- Stepladder
- Utility knife
- Razor blade
- Tape measure
- Awl or similar pointed tool
- Cleaning solvent

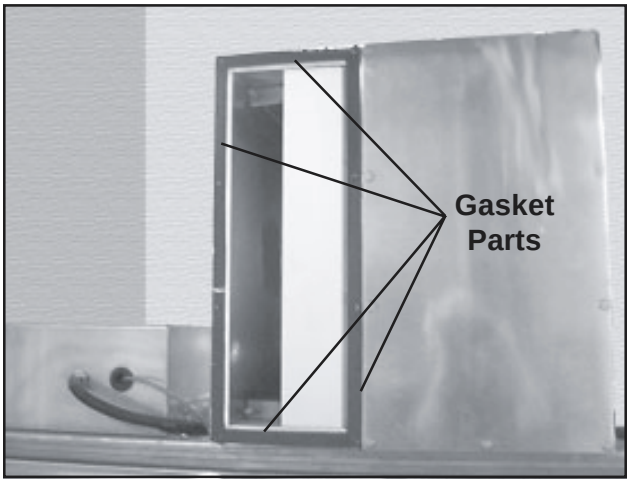


Figure 99. Polyethylene Panel Gasket on Blower Box (intake box shown)

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. With a Phillips screwdriver, remove the six screws on the appropriate access panel next to the gauges (Figure 97) and remove the panel.

5. With a flat-blade screwdriver, remove the eight screws on the polyethylene panel (Figure 98) and remove the panel.

6. With a utility knife, peel all old gasket material from the blower opening (Figure 99) and the rear of the polyethylene panel.

7. With a razor blade and cleaning solvent, make sure all gasket surfaces are clean and free of dirt, debris, and old adhesive.

Installation

1. Measure and cut a piece of gasket material equal in length to the piece being replaced.

2. Peel the protective backing from the new gasket material.

3. Press the new gasket in place on the blower box (Figure 99).

4. With an awl or other pointed tool, punch a hole through the gasket material at each mounting screw hole.

5. Repeat *Steps 1* through *4* for every piece of gasket to be replaced.

6. Start at *Mounting the Polyethylene Panels* on *Page 19*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

7. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Pitot Tube Assembly (4)

P/N 210433

Overview

There are two pitot tubes (Figure 100) in each blower box. One is mounted in the air flow before the HEPA filter, and the second behind the filter. They measure the air velocity before and after it passes through the filter, allowing the system to determine filter condition. All the pitot tubes are identical and are removed and installed in the same way. Replacement of a pitot tube requires removal of the blower box in which that pitot tube resides.

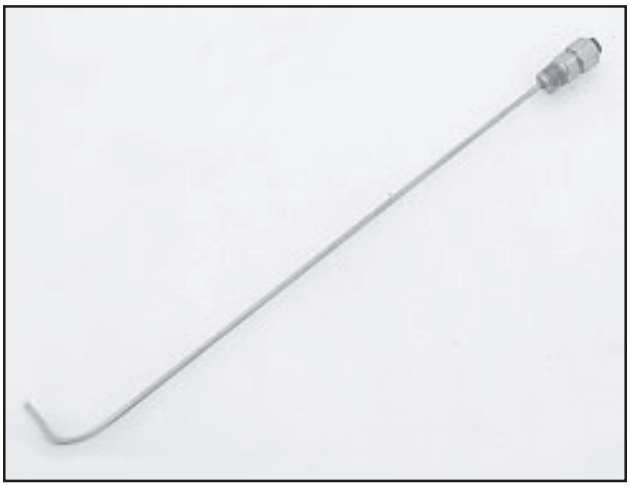


Figure 100. Typical Pitot Tube Assembly

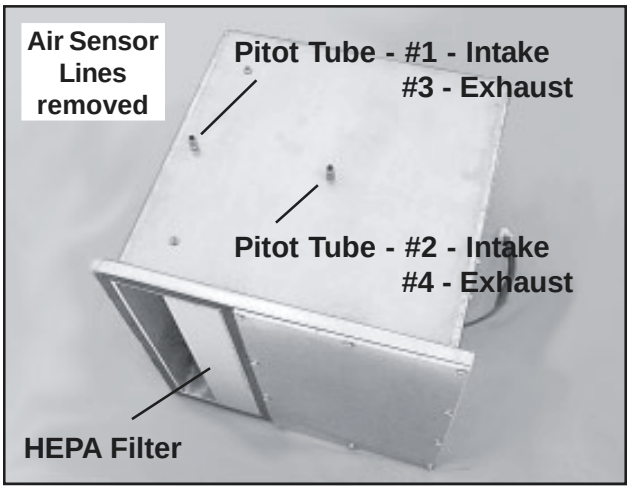


Figure 101. Top View of Blower Box (removed from cubicle)

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

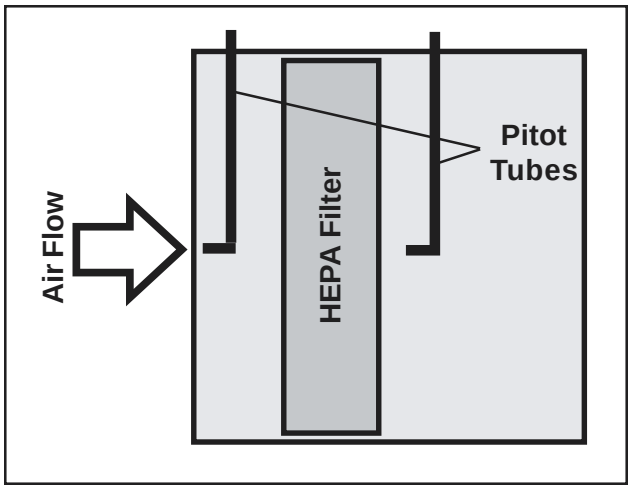


Figure 102. Orientation of Pitot Tubes in Blower Box

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

8. With a 7/16 in. wrench, unscrew the pitot tube fitting (Figure 101) and remove the pitot tube from the blower box.

Installation

CAUTION: **Be very careful not to crush, crimp, or kink the new pitot tube. Such damage effectively ruins the pitot tube.**

Note: Be careful as you tighten the pitot tubes. Screw them down hand tight only, then about one-turn with a wrench. The blower box is made of aluminum, not stainless steel, and forcing the pitot tubes down too tight can damage the threads in the mounting holes.

1. Carefully insert the new pitot tube into the blower box, making sure it points in the correct direction (Figure 102). The pitot tube must always point directly upstream to function properly.

2. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

3. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Filter Rod Assembly (4)

P/N 210544

Bushing (8)

P/N 753557

Overview

There are two filter rod assemblies in each blower box: one upper and one lower. These assemblies hold the HEPA filter tightly in place to prevent air leakage around the filter. The bushings provide smooth rotating surfaces for the rod assemblies. All filter rod assemblies and bushings are removed and installed in the same way

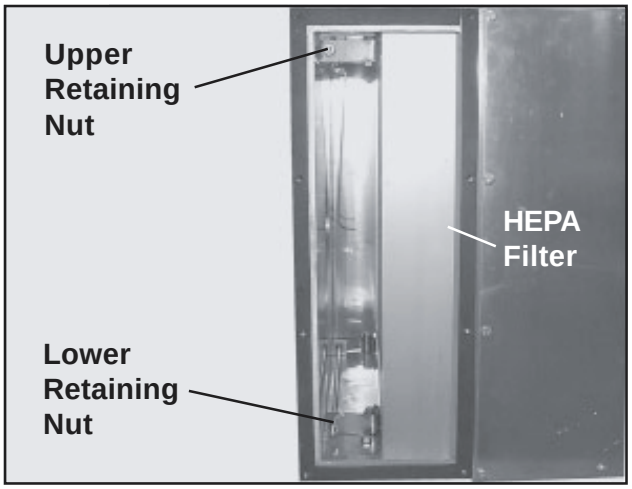


Figure 103. HEPA Filter Retaining Nuts

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. nut driver
- 7/16 in. open-end wrench
- Socket wrench & 6 in. extension
- 7/16 in. socket
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9,* starting on *Page 47,* and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5,* on *Page 70,* and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

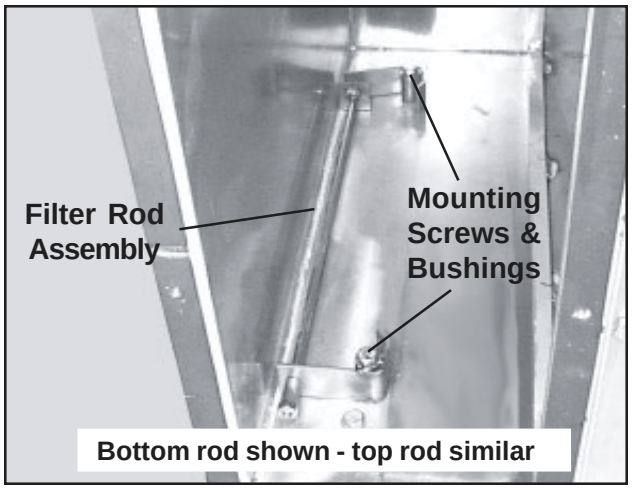


Figure 104. Filter Rod Assembly & Mounting Screws

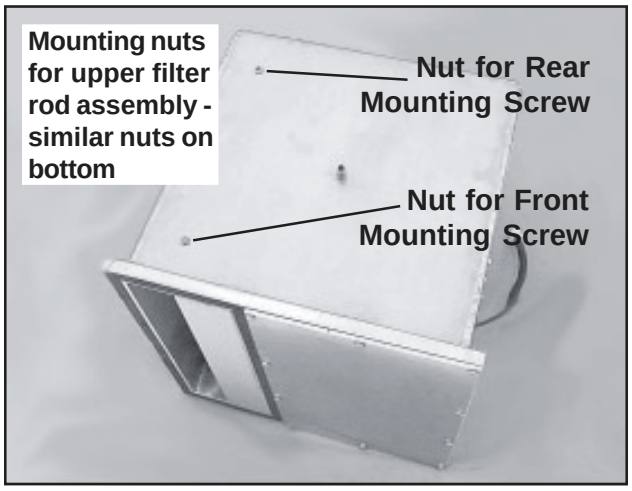


Figure 105. Top View of Blower Box (removed from cubicle)

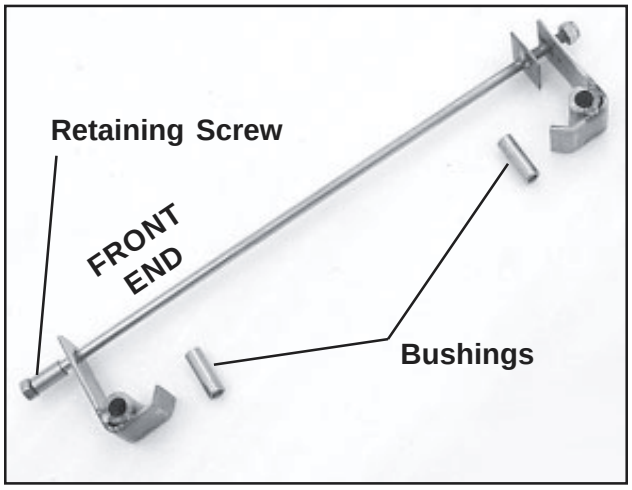


Figure 106. Filter Rod Assembly

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

8. With a 7/16 in. nut driver, loosen the upper and lower retaining nuts that hold the HEPA filter in place (Figure 103).

9. Pull the HEPA filter out of the blower box.

10. With two 7/16 in. wrenches (one socket and one open-end), unscrew the front and rear mounting screws and remove the rod assembly from the blower box (Figure 104). **Note:** The screws are held in place with nuts on the outside of the blower box (Figure 105).

Installation

1. Make sure the bushings (Figure 106) are in place in the filter rod assembly mounting screw holes. If new bushings are being installed, put them in place now.

2. Secure the rod assembly in place with the mounting screws and nuts removed earlier (Figures 104 & 105). The retaining screw must be toward the front (Figure 106).

3. Reinstall the HEPA filter with the rubber gasket facing the blower motor.

4. Tighten the two retaining nuts to hold the filter in place (Figure 103). **Note:** Tighten the nuts enough to squeeze the filter snugly against the blower motor housing for an airtight fit.

5. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

Front Plate (2)

P/N 616160

Overview

A front plate is mounted on each blower box (Figure 107). The two plates are identical and either can be used on either box. These removable plates provide access to the interior of the blower box for servicing the motorized impeller.

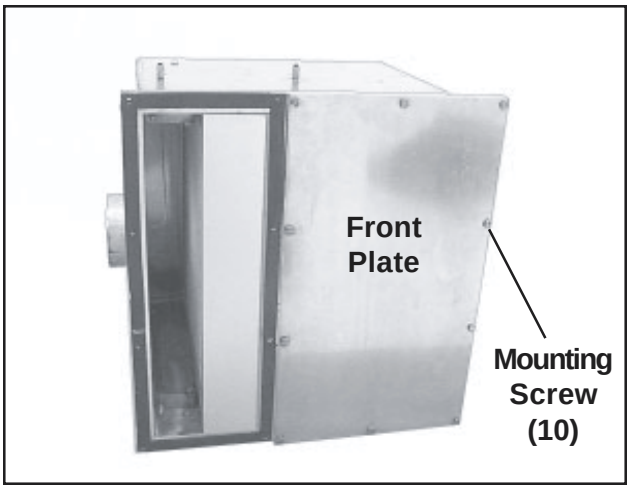


Figure 107. Blower Box Front Plate

Tools Required

- 7/16 in. wrench
- Phillips screwdriver
- Flat-blade screwdriver
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

Note: The front plate on the intake blower box can be removed without removing the box from the cubicle. The exhaust box, however, must be removed from the cubicle to remove the front plate. Perform *Steps 4* through *7* only if removing the exhaust front panel. If removing the intake panel, omit these steps and go directly to *Step 8*.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

8. With a 7/16 in. wrench, remove the ten mounting screws holding the plate to the blower box (Figure 107), and remove the plate.

Installation

1. Hold the front plate in place on the blower box. Check the rear side of the plate to make sure the center gasket aligns with the partition inside the blower.

Note: Be careful as you tighten the ten plate screws. Screw them down hand tight only, then about one turn with a wrench - enough to compress the gasket behind the plate. The blower box is made of aluminum, not stainless steel, and forcing the screws down too tight can damage the threads in the mounting holes.

2. Fasten the plate to the blower box with the ten mounting screws removed earlier (Figure 107).

3. Finish the installation:
   - **If replacing the INTAKE front plate** - start at *Installing the Inner Panel* on *Page 15*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

   - **If replacing the EXHAUST front plate** - start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

Gasket, Peripheral (Front Plate)(2 Sets)

Call SSCI for Part Number

Gasket, Center (Front Plate)(2)

Call SSCI for Part Number

Overview

Gaskets are mounted on the rear face of the front panel to minimize air leakage from the blower box (Figure 108). The peripheral gasket, around the rear face of the plate, consists of four pieces of flat gasket material. The single-piece center gasket is grooved to fit over the partition in the blower box. It may not be necessary to replace all the gasket segments; you can replace only those segments that are damaged.

Tools & Supplies Required

- 7/16 in. wrench
- Phillips screwdriver
- Flat-blade screwdriver
- Stepladder
- Utility knife
- Razor blade
- Tape measure
- Awl or similar pointed tool
- Cleaning solvent

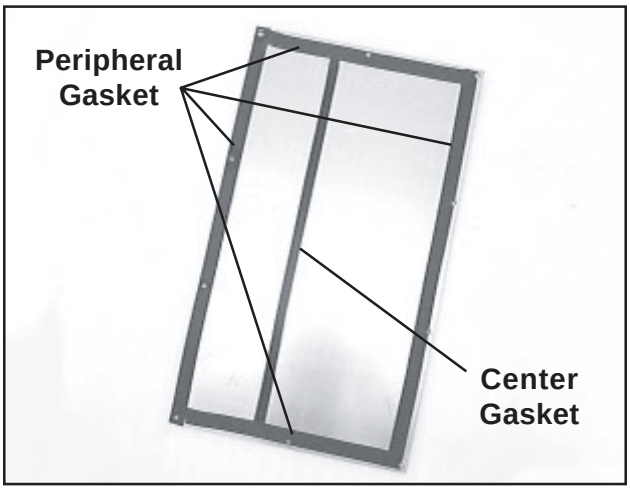


Figure 108. Gaskets on Rear of Front Plate

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9,* starting on *Page 47,* and remove the front panel from the cubicle.
3. Refer to *Inner Panel - Removal - Steps 3* through *5,* on *Page 70,* and remove the inner panel from the cubicle.

Note: Perform *Steps 4* through *7* only if replacing the exhaust front panel gaskets. If replacing the intake panel gaskets, omit these steps and go directly to *Step 8.*

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

8. With a 7/16 in. wrench, remove the ten mounting screws holding the plate to the blower box (Figure 107), and remove the plate.

9. With a utility knife, peel all old gasket material from the blower opening and the front plate.

10. With a razor blade and cleaning solvent, make sure both surfaces from which the gasket was removed are clean and free of dirt, debris, and old adhesive.

Installation

1. Measure and cut a piece of gasket material equal in length to the piece being replaced.

2. Peel the protective backing from the new gasket material.

3. Press the new gasket in place on the blower box (Figure 108).

4. With an awl or other pointed tool, punch a hole through the gasket material at each mounting screw hole.

5. Repeat *Steps 1* through *4* for every piece of gasket to be replaced.

6. Hold the front plate in place on the blower box. Check the rear side of the plate to make sure the center gasket aligns with the partition inside the blower.

Note: Be careful as you tighten the ten plate screws. Screw them down hand tight only, then about one turn with a wrench - enough to compress the gasket behind the plate. The blower box is made of aluminum, not stainless steel, and forcing the screws down too tight can damage the threads in the mounting holes.

2. Fasten the plate to the blower box with the ten mounting screws removed earlier (Figure 107).

3. Finish the installation:
   - **If replacing the INTAKE front plate** - start at *Installing the Inner Panel* on *Page 15*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

   - **If replacing the EXHAUST front plate** - start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

Vibro-mount (8) (Blower Box)

P/N 853497

Overview

Each blower box mounts to the base frame with four rubber Vibro-mounts (Figure 109). These mounts reduce vibration caused by the motorized impeller. All Vibro-mounts are removed and installed in the same way, however, those at the rear of the box are more difficult to reach. The blower box must be removed from the cubicle to replace a Vibro-mount. **Note:** We recommend you replace all four Vibro-mounts on the blower box at the same time. They are low-cost items and time-consuming to replace so it is a good idea to replace them all when you have the blower box out.

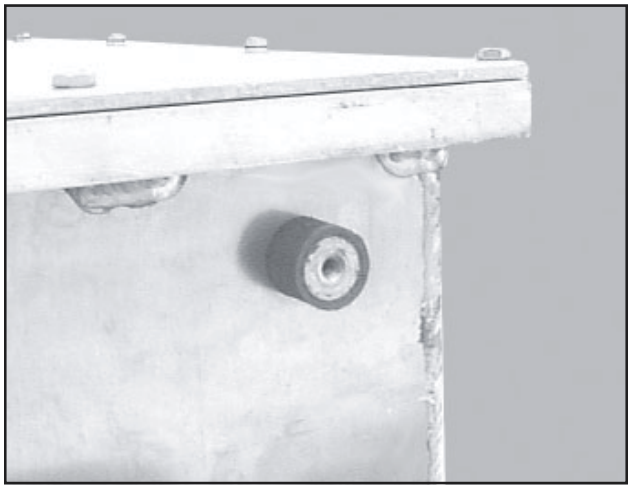


Figure 109. Typical Vibro-mount (right front shown)

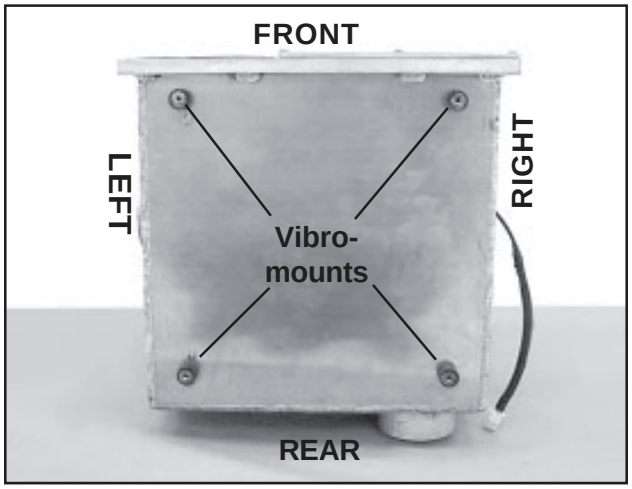


Figure 110. Vibro-mounts on the Bottom of Blower Box

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- Pliers
- Stepladder

***CAUTION:* When using ladders or other lifting apparatus, observe all applicable safety precautions.**

***CAUTION:* We recommend that this procedure be done by at least two people.**

***CAUTION:* Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Steps 2* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

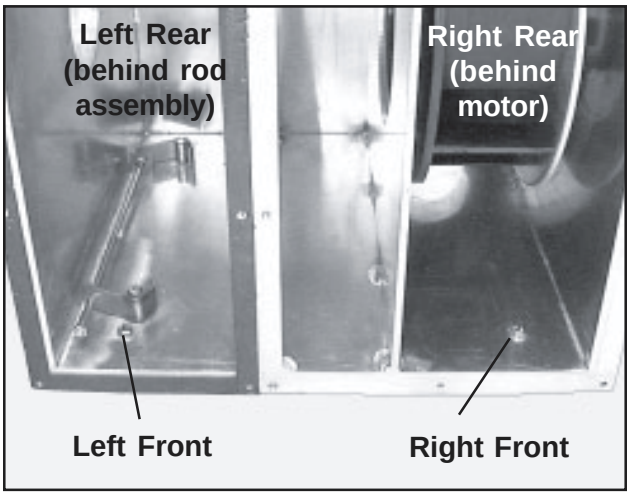


Figure 111. Vibro-mount Mounting Screws

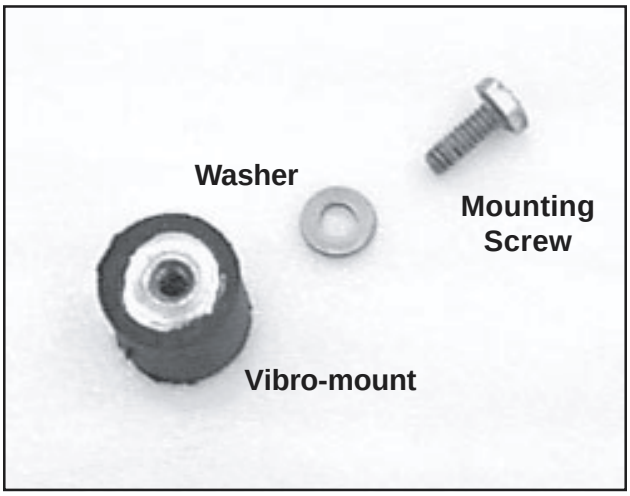


Figure 112. Vibro-mount Parts

8. Prepare the blower box:
   - **If replacing a Vibro-mount on the LEFT side of the blower box -** use a 7/16 in. wrench to loosen the upper and lower retaining nuts that hold the HEPA filter in place (Figure 103), and pull out the filter.
   - **If replacing a Vibro-mount on the RIGHT side of the blower box -** use a 7/16 in. wrench to remove the ten mounting screws holding the front plate (Figure 107) to the blower box and remove the plate.

9. Tilt the blower box over onto its back.

10. With a 7/16 in. wrench, unscrew the appropriate Vibro-mount mounting screw on the floor of the blower box and remove the mount. **Note:** Hold the Vibro-mount with a pliers to unscrew the mounting screw, and don't lose the washer.

Installation

1. Secure the Vibro-mount in place with the mounting screw and washer (Figure 112).

2. Turn the blower box right-side up.

3. Close the blower box:
   - **If replacing a Vibro-mount on the LEFT side of the blower box -** push the HEPA filter into place and tighten the two retaining nuts (Figure 103).

   - **If replacing a Vibro-mount on the RIGHT side of the blower box -** replace the front plate and secure it with the ten mounting screws (Figure 107).

4. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

Motorized Impeller (2)

P/N 854175

Overview

There is one motorized impeller (Figure 113) in each blower box. The impeller is an assembly consisting of a motor, a fan, and attached wiring. The impeller should not be disassembled but should be replaced as a unit. Both impellers are removed and installed in the same way. The blower box must be removed from the cubicle to replace a motorized impeller.

Tools & Supplies Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- Utility knife or other cutting tool
- Stepladder
- Silicon sealant
- Caulking gun
- Electrical tape

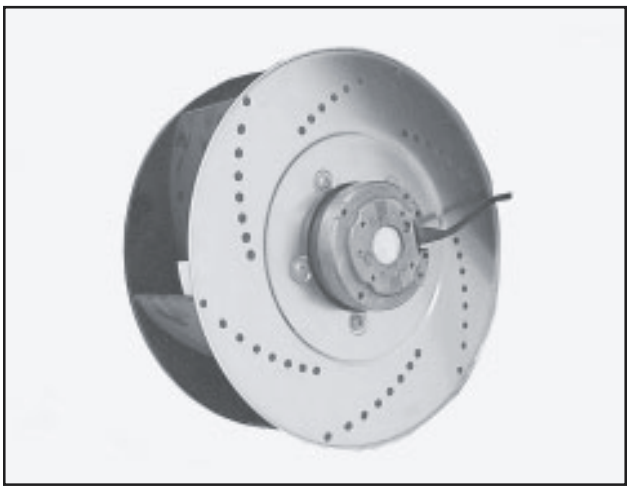


Figure 113. Motorized Impeller

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9,* starting on *Page 47,* and remove the front panel from the cubicle.
3. Refer to *Inner Panel - Removal - Steps 3* through *5,* on *Page 70*, and remove the inner panel from the cubicle.
4. Refer to *Left Ceiling Panel - Removal - Steps 1* through *4* on *Page 66* and remove the left ceiling panel.
5. Refer to *Right Ceiling Panel - Removal - Steps 1* through *6* on *Page 67* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove the blower box from the cubicle.

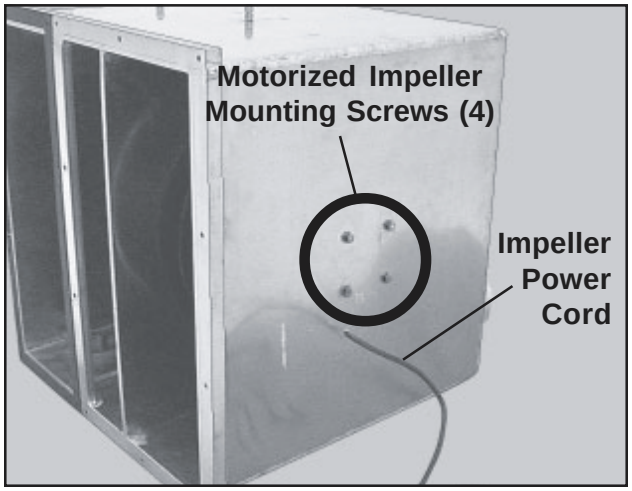


Figure 114. Right Side of Blower Box

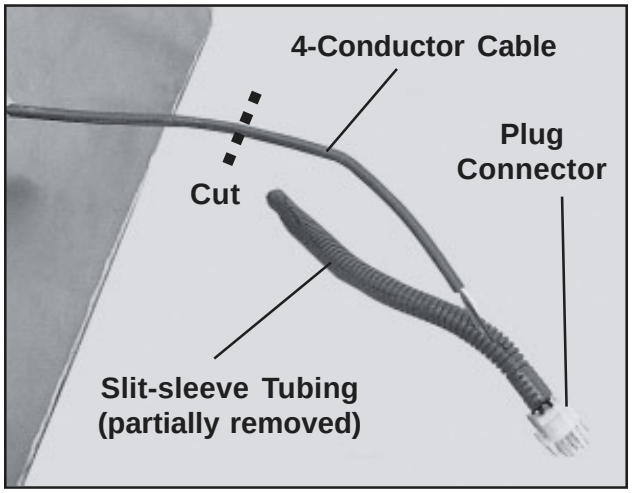


Figure 115. Connector End of Impeller Power Cord

8. With a 7/16 in. wrench, loosen the upper and lower retaining nuts that hold the HEPA filter in place (Figure 103), and pull out the filter. (Do this to give yourself more working room inside the blower box.)

9. With a 7/16 in. wrench, remove the ten mounting screws holding the front plate to the blower box (Figure 107), and remove the plate.

10. With a 7/16 in. wrench, unscrew the four impeller mounting screws on the right side of the blower box (Figure 114). The impeller will now be loose inside the box.

11. Remove the tape from the slit-sleeve tubing on the power cord (Figure 115), and remove the tubing from the 4-conductor cable. Save the tubing for reinstallation.

12. Cut the 4-conductor cable (Figure 115) and discard the end of the wire and the old plug connector.

13. Pull the impeller out of the blower box and remove the remnants of the power cord from the box sidewall.

14. Clean the old sealant from the hole in the blower box through which the power cord passed.

Installation

1. From inside the box, pass the end of the power cord of the new impellerout through the hole in the blower box sidewall.

2. Place the new impeller into the blower box with the motor toward the sidewall. Orient the impeller so that the power cord exits toward the front of the blower box.

3. Secure the impeller to the sidewall of the blower box with the four screws/lockwashers removed earlier.

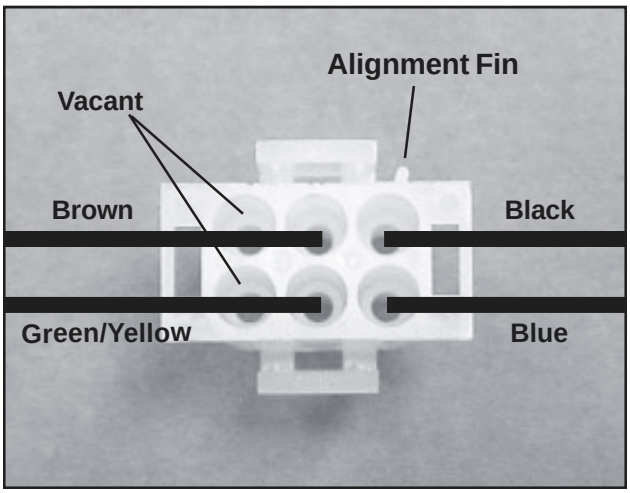


Figure 116. Wire Connections in Power Cord Plug Connector

4. Insert the wires from the 4-conductor cable into the large end of the white plastic plug connector supplied with the impeller. Seat the pins in the connector as shown in Figure 116, with the alignment fin on the upper right. **Note:** Push the wire tips into the connector until they snap into place.

5. Place the slit-sleeve tubing onto the 4-conductor cable and slide it up close to the plug connector. Wrap both ends of the tubing with electrical tape being careful to completely cover the plug wires.

6. From inside the blower box, pull the power cord into the box as far as possible.

7. With silicon sealant, thoroughly seal the joint between the power cable and the hole in the blower box side.

8. Replace the front plate and secure with the ten mounting screws.

9. Push the HEPA filter into place and secure with the two retaining nuts.

10. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

11. Refer to *Start-up Procedure - New Setup* on *Page 35* and follow *Steps 1* through *4*.

Electrical Box

Call SSCI for Part Number

Overview

This section guides you in removing and installing the electrical box. This item is not available as a separate part. These procedures are required, however, to replace components in the box.

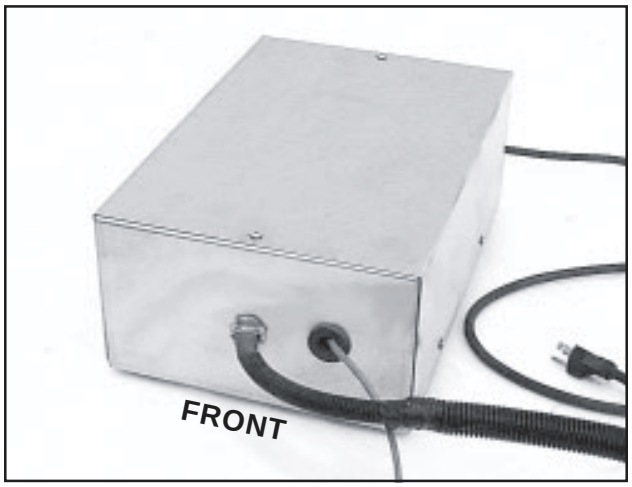


Figure 117. Electrical Box (removed from cubicle)

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- 1/2 in. wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Page 66*, and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Page 67*, and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove ONLY the INTAKE blower box.

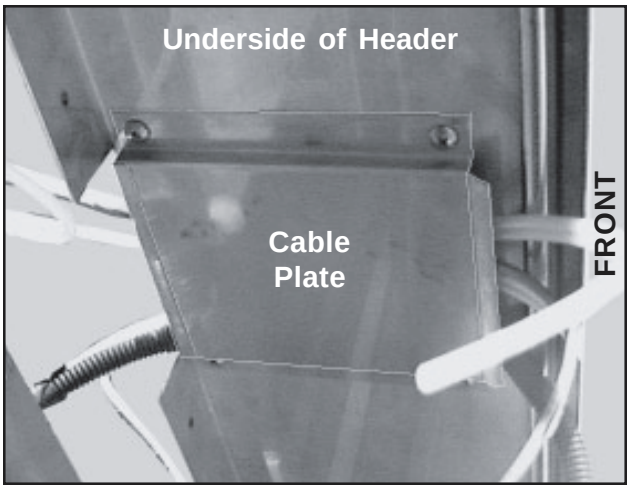


Figure 118. Cable Plate Mounted

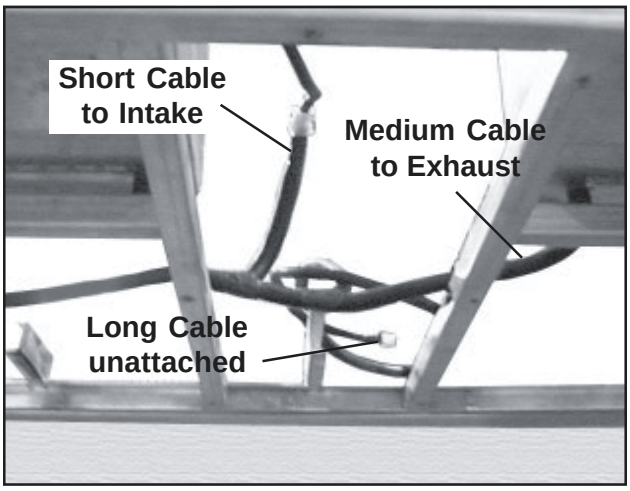


Figure 119. Blower Box Cable Harness Connections

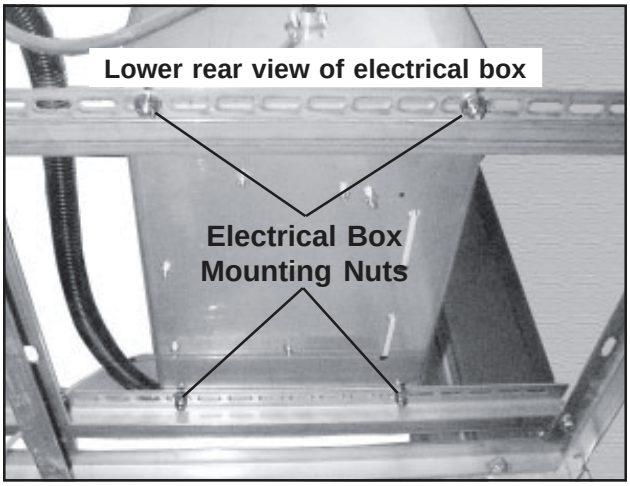


Figure 120. Electrical Box Mounting Nuts

8. Pull the power cord out of the outlet.

9. With a Phillips screwdriver, unscrew the four screws which hold the cable plate to the header (Figure 118) and remove the plate. This frees up all the air and electrical lines from the back of the front panel including the black slit-sleeve tubing and the 7-pin connector cable.

10. Undo the connection between the cable harness and the cable from the intake blower box

11. Undo the connection between the cable harness and the cable from the exhaust blower box.

12. Undo the connection between the cable harness and the cable from the front panel.

13. With a 1/2 in. wrench, unscrew the four nuts/washers that hold the electrical box to the base frame (Figure 120).

14. Remove the electrical box from the base frame.

Installation

1. Place the electrical box in its position on the base frame.

2. Fasten the box in position with the four 1/2 in. nuts and lockwashers removed earlier.

3. Plug the power cord into the outlet.

4. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

5. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Power Supply Cord

P/N 853431

Overview

There are three electrical cables coming out of the electrical box. The power supply cord is a black cable that plugs into the electric power outlet. Replacing this cable requires extensive disassembly of the cubicle.

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- 1/2 in. wrench
- 3/8 in. wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

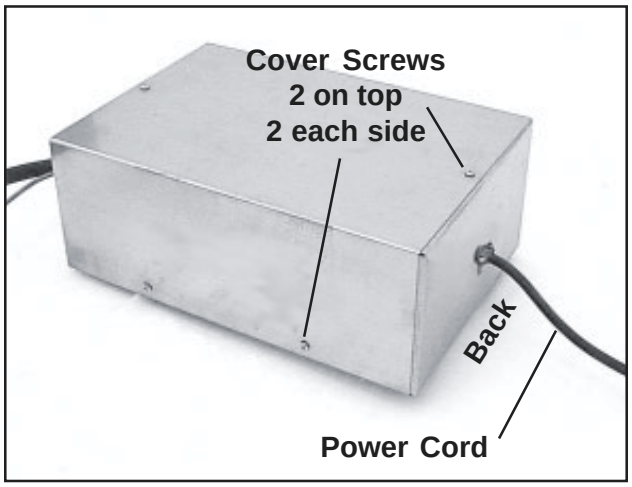


Figure 121. Electrical Box Cover Screws & Power Cord

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.
2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.
3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.
4. Refer to *Left Ceiling Panel - Removal - Page 66*, and remove the left ceiling panel.
5. Refer to *Right Ceiling Panel - Removal - Page 67*, and remove the right ceiling panel.
6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

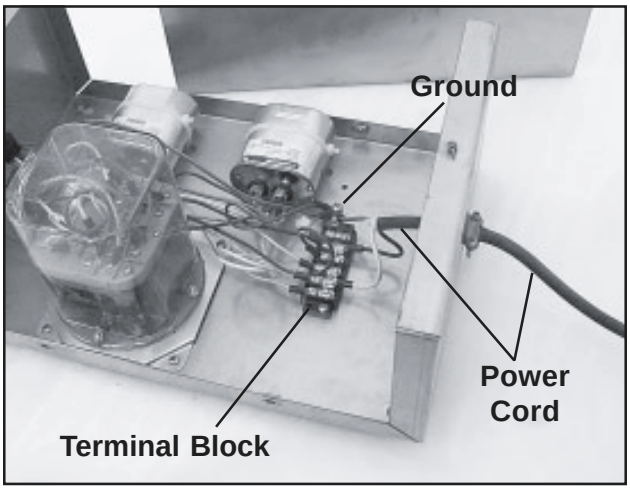


Figure 122. Power Cord Connections Inside Electrical Box

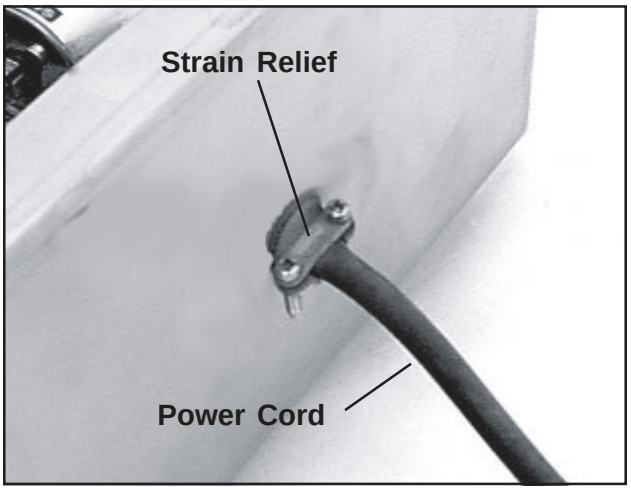


Figure 123. Power Cord Strain Relief

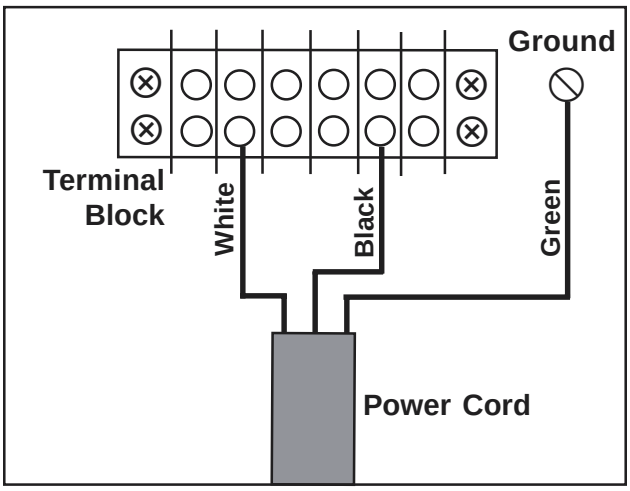


Figure 124. Power Cord Connections

4. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove ONLY the INTAKE blower box.

5. Refer to *Electrical Box - Removal - Steps 8* through *14* on *Page 96* and remove the electrical box from the cubicle.

6. With a Phillips screwdriver, remove the six screws that hold the box cover in place (Figure 121) and lift off the cover.

7. With a Phillips screwdriver, remove the black and white wires from the terminal block inside the electrical box (Figure 122)

8. With a flat-blade screwdriver and a 3/8 in. wrench, remove the green wire from the ground inside the electrical box.

9. With a flat-blade or Phillips screwdriver, loosen the two screws on the strain relief (Figure 123) and pull the power cord out of the electrical box.

Installation

1. Pass the three wires from the new power cord through the strain relief, then into the electrical box.

2. Connect the three wires to the terminal strip and the ground as shown in Figure 124.

3. Tighten the two screws on the strain relief.

4. Place the cover over the electrical box and secure with the six screws removed earlier.

5. Place the electrical box in its position on the base frame.

6. Fasten the box in position with the four 1/2 in. nuts and lock-washers removed earlier.

7. Plug the power cord into the outlet.

8. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

9. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

7-Pin Cable (Photohelic Gauge)

Call SSCI for Part Number

Overview

There are three electrical cables coming out of the electrical box. This is a gray cable with a 7-pin connector at either end (Figure 125). One end of the cable connects to a relay in the electrical box and the other end connects to the rear of the photohelic gauge (Figure 60). Replacing this cable requires extensive disassembly of the cubicle.

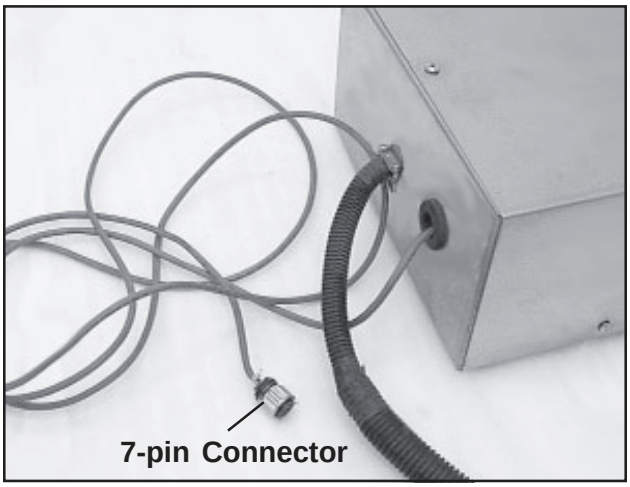


Figure 125. 7-pin Cable

Tools Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- 1/2 in. wrench
- Stepladder

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9,* starting on *Page 47,* and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5,* on *Page 70,* and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Page 66,* and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Page 67,* and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

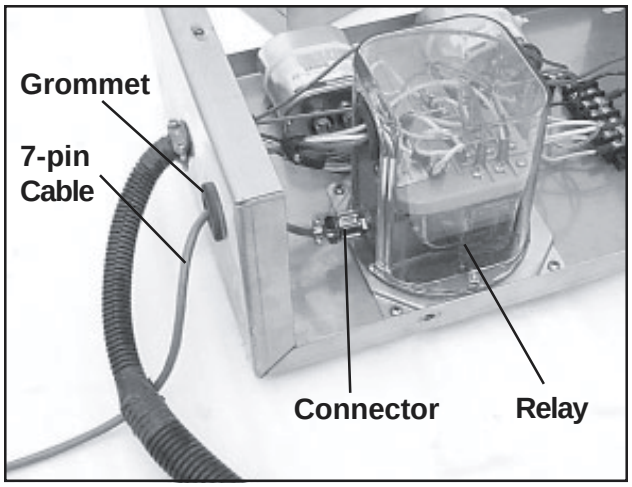


Figure 126. 7-pin Cable Connection to Relay

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove ONLY the INTAKE blower box.

8. Refer to *Electrical Box - Removal - Steps 8* through *14* on *Page 96* and remove the electrical box from the cubicle.

9. With a Phillips screwdriver, remove the six screws that hold the box cover in place (Figure 121) and lift off the cover.

10. Rotate the outer collar of the connector counterclockwise until the connector is loose (Figure 126).

11. Pull the connector out of the relay, through the grommet, and out of the electrical box.

Installation

1. Push the connector (either end) on the new 7-pin cable through the grommet and into the electrical box.

2. Being very careful to align the connector pins with the receptacle holes, push the connector onto the relay.

3. Rotate the outer collar of the connector clockwise to secure the connector to the relay.

4. Place the cover over the electrical box and secure with the six screws removed earlier.

5. Place the electrical box in its position on the base frame.

6. Fasten the box in position with the four 1/2 in. nuts and lock-washers removed earlier.

7. Plug the power cord into the outlet.

8. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

9. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Capacitor (2)

P/N 854176

Overview

There are two capacitors in the electrical box (Figure 127). They are identical and are replaced in the same way. Replacing a capacitor requires extensive disassembly of the cubicle.

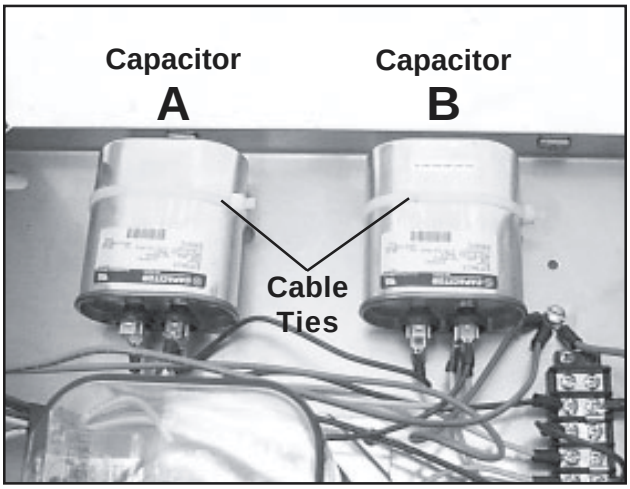


Figure 127. Capacitors in Electrical Box

Tools & Supplies Required

- Phillips screwdriver
- Flat-blade screwdriver
- 7/16 in. wrench
- 1/2 in. wrench
- Utility knife or other cutting tool
- Needlenose pliers
- Stepladder
- 12 in. cable tie (1 per capacitor)

CAUTION: **When using ladders or other lifting apparatus, observe all applicable safety precautions.**

CAUTION: **We recommend that this procedure be done by at least two people.**

CAUTION: **Perform the shutdown procedure before working on any component of the electrical system.**

Removal

1. Refer to *Shutdown Procedure* on *Page 37* and shut down the Air Handling System.

2. Refer to *Front Panel - Removal - Steps 2* through *9*, starting on *Page 47*, and remove the front panel from the cubicle.

3. Refer to *Inner Panel - Removal - Steps 3* through *5*, on *Page 70*, and remove the inner panel from the cubicle.

4. Refer to *Left Ceiling Panel - Removal - Page 66*, and remove the left ceiling panel.

5. Refer to *Right Ceiling Panel - Removal - Page 67*, and remove the right ceiling panel.

6. Refer to *Center Ceiling Panel - Removal - Steps 4 and 5* on *Page 69* and remove the center ceiling panel. Do not remove the pre-filter and cover.

7. Refer to *Blower Box Assembly - Removal - Steps 7* through *11* starting on *Page 74* and remove ONLY the INTAKE blower box.

8. Refer to *Electrical Box - Removal - Steps 8* through *14* on *Page 96* and remove the electrical box from the cubicle.

9. With a Phillips screwdriver, remove the six screws that hold the box cover in place (Figure 121) and lift off the cover.

10. Cut the cable tie (Figure 127) that holds the capacitor in the electrical box and discard the tie.

11. Label the wires on the capacitor so that you can replace them correctly later.

12. With a needlenose pliers, pull the spade connectors from the terminals on the capacitor.

Installation

1. Refer to Figure 128 and place the spade connectors on the new capacitor terminals.

2. Secure the capacitor to the floor of the electrical box with a 12 in. cable tie.

3. Place the cover over the electrical box and secure with the six screws removed earlier.

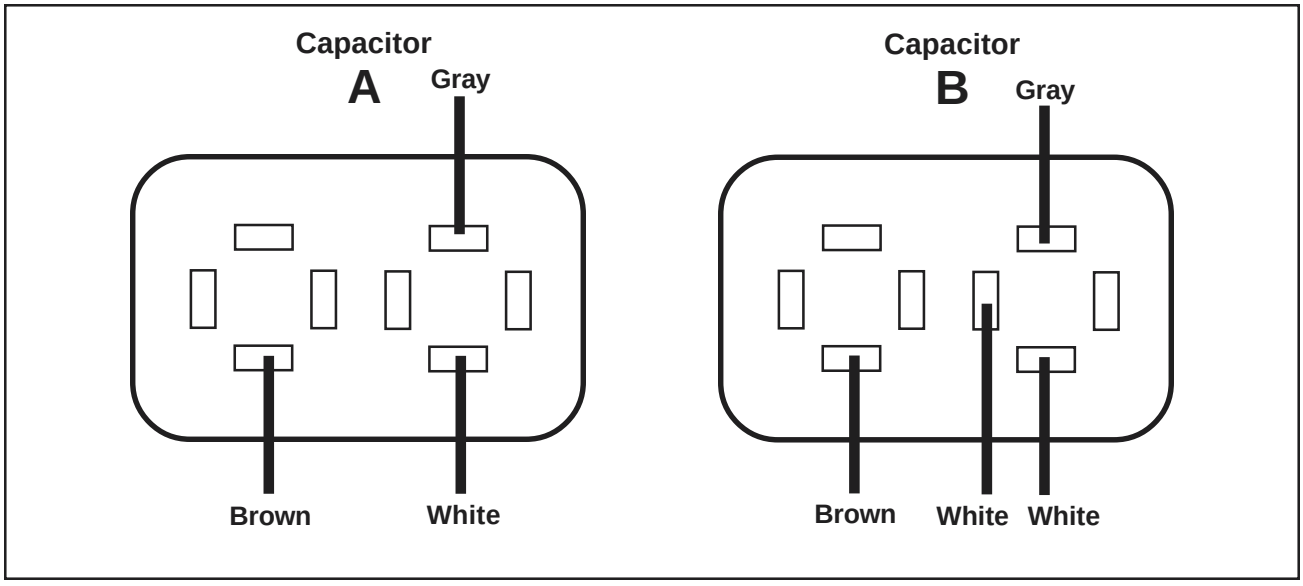


Figure 128. Wire Connections to Capacitors

4. Place the electrical box in its position on the base frame.

5. Fasten the box in position with the four 1/2 in. nuts and lock-washers removed earlier.

6. Plug the power cord into the outlet.

7. Start at *Installing the Blower Boxes* on *Page 11*, and continue on through this manual until installation is complete. Omit those sections covering components that were not removed during disassembly of the cubicle.

8. Refer to *Start-up Procedure - Existing Setup* on *Page 36* and follow *Steps 1* through *4*.

Comments:

Chapter 5 - Troubleshooting

General

The following procedures will help you fix most of the problems that you might encounter with your SSCI Isolation Cubicle Air Handling System. If necessary, please feel free to call SSCI Customer Service at (800) 323-7366. Our experienced technical support personnel will be glad to help you.

For more information on contacting SSCI, refer to *SSCI Contact Information* on *Page 2*.

Part numbers for available replacement parts are shown in the table on *Pages 43* and *44*. To order replacement parts, refer to *Parts Ordering Procedure* on *Page 45*.

Problems

Possible problems are listed below:

Returning Air Handling System Components for Repairs

RMA Numbers

If components of your Isolation Cubicle Air Handling System should require return to SSCI for repairs, discuss the problem with one of our Customer Service Representatives. Obtain an RMA number (Return Merchandise Authorization) from them before shipping the item back. **Note:** SSCI will *not* accept merchandise returned without an RMA number.

Packing and Shipment

Pack the component securely in a suitable container. If the component is large and heavy, consider shipping it securely mounted to a pallet. Ship documentation with the unit including:

- Destination
- RMA Number
- Your name, company and address
- Your telephone number
- The reason for returning the component

There is no electric power to the Air Handling System.

Remedial Action

Assuming the building power is on and the cubicle lights (if installed) are working.

First: The power supply cord may not be plugged or has fallen out of the outlet. Refer to *Power Supply Cord - Removal* - starting on *Page 96* and disassemble the unit to a point where you can see the outlet to verify if the plug is firmly in place.

Second: If the plug is in place, pull it out of the outlet. Remove the cover from the electrical box and verify that the black, white, and green wires from the power cord are correctly and firmly connected (Figure 124). Replace the electrical box cover and place the plug back into the outlet.

Third: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The circuit breaker trips frequently.

Remedial Action

First: Have an electrician examine the system to verify that everything is correct and wired properly.

Second: If the electrical power in your area tends to vary a lot, we recommend the installation of a power conditioner to provide stable power to your system.

Third: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

I cannot adjust air changes per hour.

Remedial Action

First: Read *Start-up Procedure - New Setup* on *Page 35* and make sure you are performing the procedure correctly.

Second: Are all the doors closed and latched while you are trying to make this adjustment? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for closing and latching the doors

Third: Are the door latches properly adjusted to prevent air leakage? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for adjusting the door latches.

Fourth: Are connections 5 and 6 on the right air intake pipe (*Page 64*) tight and free of leaks or blockages? Are the air sensor lines on these connectors kinked or broken?

Fifth: Is the right air intake pipe damaged or blocked? Refer to *Page 64* and, if necessary, remove and inspect this pipe.

Sixth: Are air sensor lines 5 and 6 between the right air intake pipe and the air changes per hour gauge damaged or kinked?

Seventh: Is the intake blower operating correctly? Refer to *Pages 113* and *114* and check the intake on/off switch and the intake blower speed controller.

Eighth: If everything above is OK, you probably have a defective air changes per hour gauge. Order P/N 853628 and refer to *Page 62* for replacement instructions.

Ninth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

I cannot adjust positive/negative air pressure.

Remedial Action

First: Read *Start-up Procedure - New Setup* on *Page 35* and make sure you are performing the procedure correctly.

Second: Are all the doors closed and latched while you are trying to make this adjustment? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for closing and latching the doors

Third: Are the door latches properly adjusted to prevent air leakage? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for adjusting the door latches.

Fourth: Is air sensor line 7 projecting through the ceiling into the cubicle? It must be 3 to 4 inches inside the cubicle to sample the interior air. Refer to Figure 34 on *Page 24.*

Fifth: Is air sensor line 7 between the cubicle ceiling and the photohelic gauge damaged or kinked?

Sixth: Is the exhaust blower operating correctly? Refer to *Pages 112* and *113* and check the exhaust on/off switch and the exhaust blower speed controller.

Seventh: If everything above is OK, you probably have a defective photohelic gauge. Order P/N 853731 and refer to *Page 60* for replacement instructions.

Eighth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The filter condition blower intake or exhaust gauge does not work.

Remedial Action

First: Check the air sensor line connections behind the filter condition gauge to make sure they are secure and undamaged. Refer to *Piping Diagram* on *Page 32*.

Second: Check the air sensor line connections on top the blower box to make sure they are secure and undamaged.

Third: Check the full length of each air sensor line between the filter condition gauge and the blower box to make sure the line is not damaged or kinked.

Fourth: Open the blower box and check both pitot tubes to make sure they are oriented correctly (pointing directly upstream) and not reversed or pointed at an angle to the air flow. Check each tube to make sure it is not crushed, kinked, or damaged in any way.

Fifth: If everything above is OK, you probably have a defective filter condition gauge. Order P/N 854174 and refer to *Page 62 for* replacement instructions.

Sixth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The positive and/or negative air pressure indicator does not light.

Remedial Action

First: Are all the doors closed and latched? If air is leaking past the doors, the cubicle may not be able to hold a desired pressure. Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for closing and latching the doors

Second: Are the door latches properly adjusted to prevent air leakage? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for adjusting the door latches.

Third: Is there electrical power to the Air Handling System? Refer to *Page 107*.

Fourth: If only one air pressure indicator does not light, the bulb may be burned out. Refer to *Page 57* to replace the bulb.

Fifth: If only one air pressure indicator does not light, a wire behind the lamp base may be disconnected or broken. Refer to *Page 58* and fix the connection

Sixth: Is air sensor line 7 projecting through the ceiling into the cubicle? It must be 3 to 4 inches inside the cubicle to sample the interior air. Refer to Figure 34 on *Page 24*.

Seventh: Is air sensor line 7 between the cubicle ceiling and the photohelic gauge damaged or kinked?

Eighth: Is the 7-pin connector cable properly connected to the rear of the photohelic gauge and the relay in the electrical box? Refer to Figure 60 on *Page 48*, and *Page 99*.

Ninth: Is the 7-pin connector cable damaged in any way? If so, contact SSCI for a replacement and refer to *Page 99* for replacement instructions.

Tenth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The intake or exhaust blower on/off switch does not work.

Remedial Action

First: Is there electrical power to the Air Handling System? Refer to *Page 107?*

Second: Refer to the *Wiring Diagram* on *Page 31* and verify that all connections behind the switch are secure and undamaged.

Third: If all connections are OK, you probably have a bad switch. Order P/N 854198 and refer to *Page 53* to replace the switch.

Fourth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The intake or exhaust blower speed controller does not work.

Remedial Action

First: Is there electrical power to the Air Handling System? Refer to *Page 107?*

Second: Refer to the *Wiring Diagram* on *Page 31* and verify that all connections behind the controller are secure and undamaged.

Third: If all connections are OK, you probably have a bad controller. Order P/N 854179 and refer to *Page 51* to replace the switch.

Fourth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

The air changes per hour gauge does not indicate.

Remedial Action

First: Read *Start-up Procedure - New Setup* on *Page 35* and make sure you are performing the procedure correctly.

Second: Are all the doors closed and latched while you are trying to make this adjustment? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for closing and latching the doors

Third: Are the door latches properly adjusted to prevent air leakage? Refer to the *Owner's Manual* for the *Isolation Cubicle, (702743) - Chapter 3* for adjusting the door latches.

Fourth: Are connections 5 and 6 on the right air intake pipe (*Page 64*) tight and free of leaks or blockages? Are the air sensor lines on these connectors kinked or broken?

Fifth: Is the right air intake pipe damaged or blocked? Refer to *Page 64* and, if necessary, remove and inspect this pipe.

Sixth: Are air sensor lines 5 and 6 between the right air intake pipe and the air changes per hour gauge damaged or kinked?

Seventh: Is the intake blower operating correctly? Refer to *Pages 112* and *113* and check the intake on/off switch and the intake blower speed controller.

Eighth: If everything above is OK, you probably have a defective air changes per hour gauge. Order P/N 853628 and refer to *Page 62* for replacement instructions.

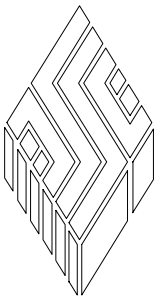
Ninth: If these actions do not resolve the problem, call SSCI Customer Service at (800) 323-7366.

Comments:

Inside back cover

This page left blank intentionally.

For more information on SSCI's fine line of products and accessories, talk to your SSCI sales representative.



SSCI

Suburban Surgical Company, Inc.
275 Twelfth Street **Wheeling, IL 60090**
Phone: (847) 537-9320 **Fax: (847) 537-9061**
Toll Free: (800) 323-7366 **Web: www.subsurg.com**

Form No. 702756 08/07