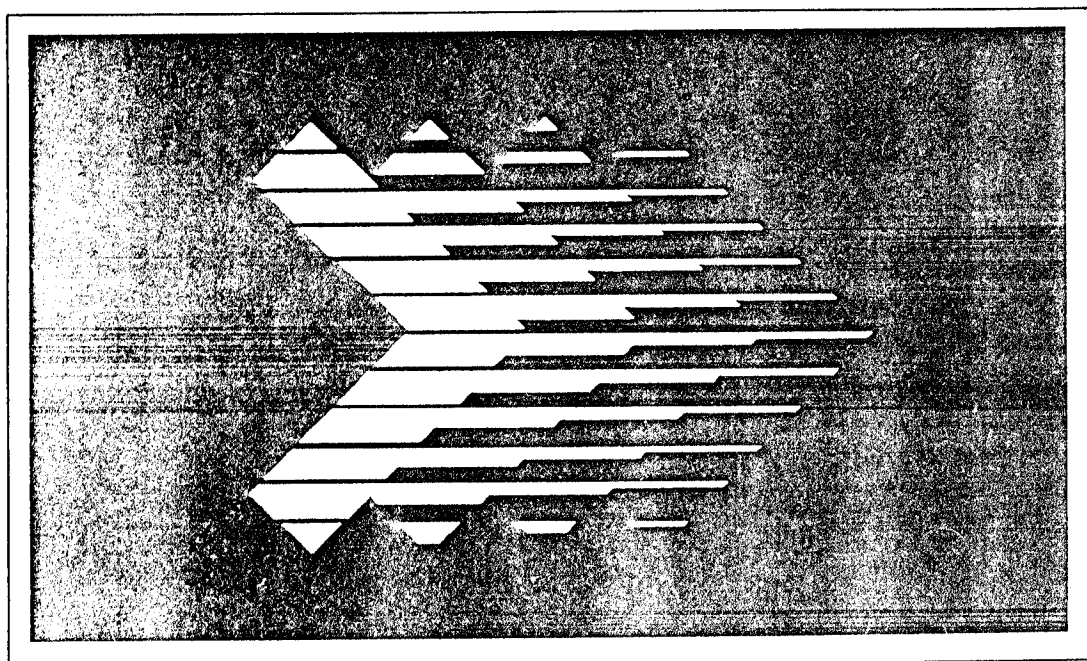


OWNER'S GUIDE

F90 **ELECTRONIC AIR CLEANER**

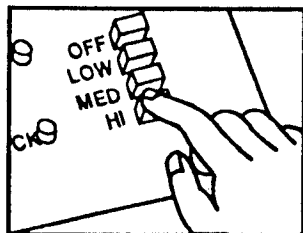


WELCOME...

...to the world of high efficiency air cleaning.
Engineered and built for long, trouble-free operation,
your Honeywell Commercial Electronic Air Cleaner
efficiently removes most of the airborne particles that
make you less comfortable. With this Honeywell
Commercial Electronic Air Cleaner, you can expect to
enjoy the benefits of clean air for years to come.

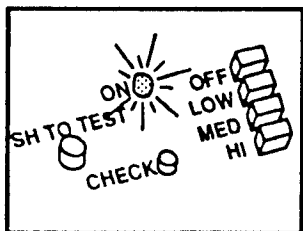
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OPERATING YOUR COMMERCIAL ELECTRONIC AIR CLEANER



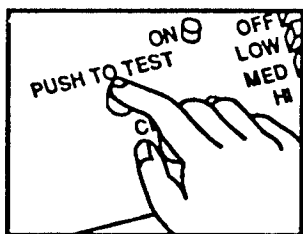
M 678

Select the desired air flow rate with the four-speed power switch—OFF, LOW, MED, or HI. For maximum air cleaning, set the power switch on HI at all times. For quiet operation, set the power switch on LOW.



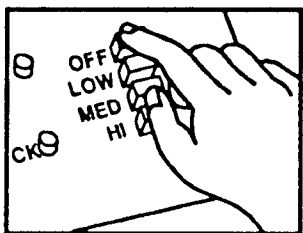
M 679

The ON light-emitting diode (LED) lights whenever the air cleaner is running.



M 680

An occasional snapping sound means the air cleaner is running properly. Press the PUSH TO TEST button to hear the snapping sound. The optional CHECK LED lights when the PUSH TO TEST button is pressed.



M 681

Press the OFF power switch to turn the air cleaner off.

GETTING THE MOST FROM YOUR COMMERCIAL ELECTRONIC AIR CLEANER

Your Commercial Electronic Air Cleaner can have one or two cells depending on the model. These instructions are for both the one and two cell models.

**Run the electronic
air cleaner as much
as possible**

For greatest efficiency, run the air cleaner all the time. The small added cost is more than offset by the added benefits of full-time air cleaning. Using the optional infrared remote transmitter and remote receivers or hard-wired remote control assembly makes operation especially convenient. Consult your dealer or local Honeywell Sales Representative for details.

**Keep the cell and
prefilter clean**

Although the air cleaner is designed to be efficient during a wide range of cell loading conditions, regular cleaning is your best assurance of consistent performance.

**Replace activated
carbon filter
regularly**

Activated carbon filter can be installed in the air cleaner to control odors and other gaseous contaminants. Carbon filter should be changed every three to six months, depending on air cleaner use. The air flow capacity of the propeller fan does not permit using deep, high capacity carbon filters.

The available carbon filters are designed for low level odors such as ozone or occasional cigar smoke. Sustained operation in a heavy tobacco smoke environment can load the carbon filter with tobacco tar in just a few days.

To order activated carbon filter for your air cleaner, request part number 202614.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

The air cleaner removes a variety of contaminants from the air. As it cleans the air, the air cleaner cell and prefilter become dirty, lowering the cleaning efficiency. To maintain the air cleaner reliability and efficiency, periodically clean, inspect, and service the cell and prefilter.

Regularly clean the cell with an alkaline base detergent solution by soaking the cell in commercial or home electric dishwasher detergent, powder or liquid. Use the hottest water possible (hotter than 160° F [71° C]). If soaking does not clean the cell, try using high velocity detergent spray or steam. Full service distributors provide regular cleaning services to commercial establishments.

The WASH LED (if used) lights when cell washing is overdue. When the WASH LED lights, wash the cells and wipe the ionizer wires. Frequent cell cleaning keeps the WASH LED from lighting.

Removing the cell and prefilter



WARNING

SHARP EDGES.

CAN CAUSE PERSONAL INJURY.

Wear protective gloves and carefully handle the cell and prefilter to avoid cuts from the sharp metal edges, collection plates, and ionizer wires.

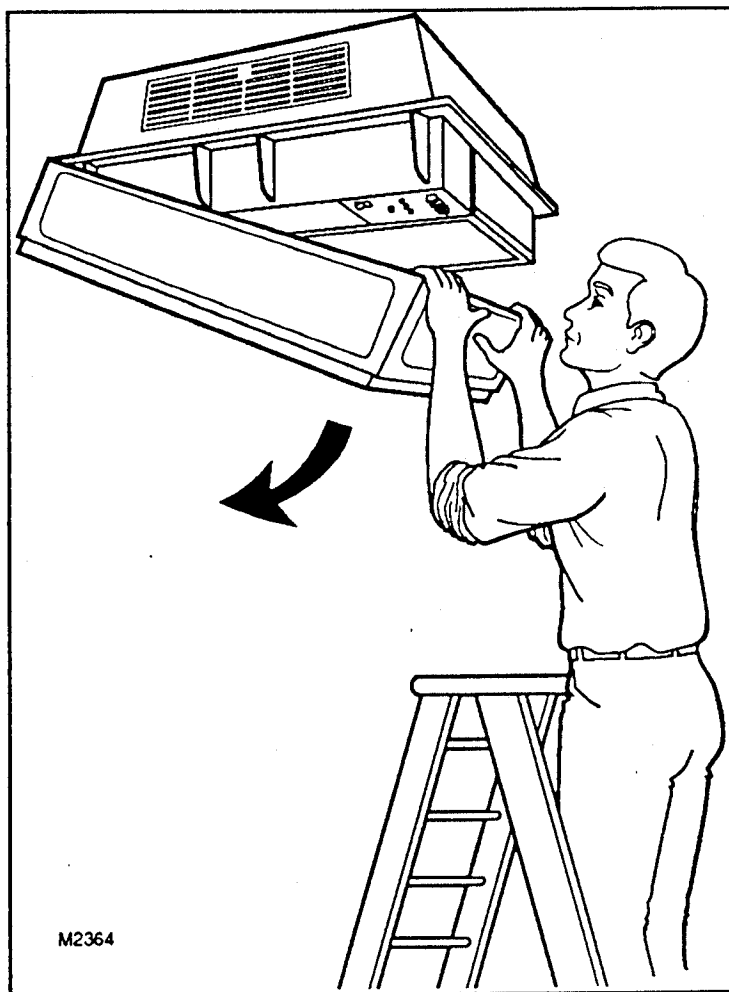


CAUTION

1. Turn off power to the air cleaner before removing the cell and prefilter.
 2. Stand on a stable work platform or ladder when removing the cell and prefilter.
 3. Be careful when working to avoid equipment damage. The air cleaner and its components can be easily damaged.
-

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

1. Open the cover by pulling the two latches located on the front of the cover and swinging down the cover until it hangs.



2. Remove the prefilter and the cell from the channel guides.
3. Replace the activated carbon filter (if used), if due for replacement.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

Cleaning the prefilter

1. Shake out or vacuum the accumulated contaminants from the prefilter. If necessary, soak the prefilter in a hot electric dishwasher detergent (alkaline) solution. Do NOT soak the prefilter in an acid detergent solution or use high pressure water, air, or steam to clean the prefilter.

Cleaning the cell and prefilter using hot electric dishwasher detergent solution



WARNING

STEAM, HOT WATER, STRONG DETERGENT. CAN CAUSE PERSONAL INJURY.

Wear rubber gloves, eye protection, and rubber apron for protection from the strong cleaning chemicals and hot temperatures. Keep detergent solution out of reach of children.

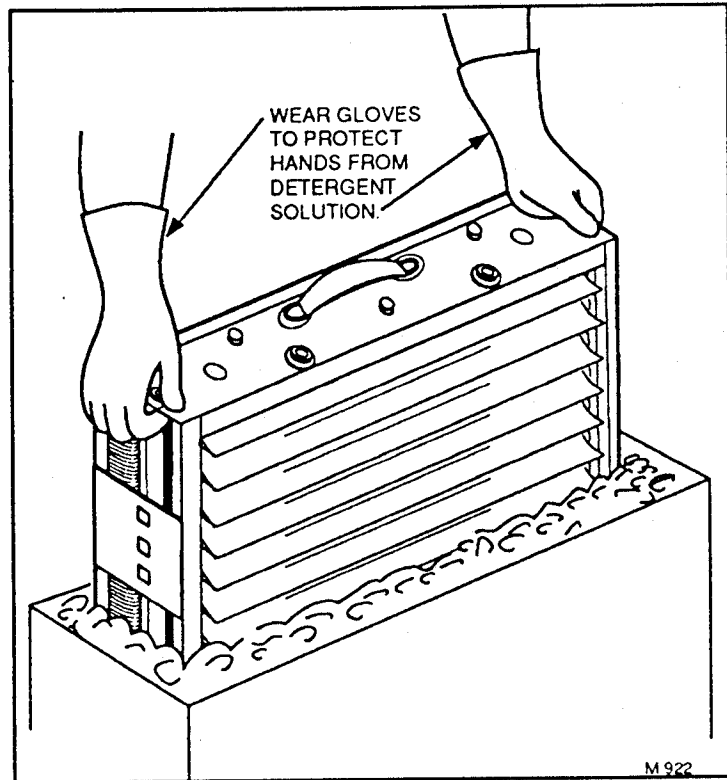
NOTE: Soak the cell before soaking the prefilter. If the prefilter is soaked first, lint residue from the prefilter can contaminate the wash water and deposit inside the cell. Dispose of the wash water after each use.

1. Use a container such as a laundry tub or plastic tank that is large enough to hold the cell.
2. Mix the alkaline base detergent with hot water, carefully following the instructions on the detergent package.
 - Use commercial or home electric dishwashing detergent (either powder or liquid). Do not use soap or acid base cleaners or solvents.
 - Ensure the water temperature is between 150° F and 190° F [66° C and 88° C].
 - When using cold water, follow the instructions included with the detergent.

NOTE: Cleaning in cold water is less effective than cleaning in hot water.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

3. Carefully wipe off ionizer wires before prerinsing.
4. Prerinse the cell in hot water before submerging in detergent.
5. Soak the cell in the solution for up to 15 minutes. Agitate the cell in the solution if necessary.
6. Remove the cell from the detergent solution.



7. Place the cell in another container of clear hot water (150° F to 190° F [66° C to 88° C]) for final rinsing. The cell should be rinsed for five to ten minutes.
8. Remove the cell from the rinse water. Drain and dry the cell before reinstalling in the air cleaner. Stand the cell on one corner for optimum water drainage.
9. Carefully wipe ionizer wires to remove any remaining residue. An old tooth brush works well.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

10. Check the collection plates of the cell for any detergent residue. If any residue is remaining, repeat the rinse and detergent soaking process until collector plates are clean. Buildup can reduce the air cleaner efficiency.

11. When the cell is cleaned, soak the prefilter (if necessary) following steps 4 through 8.

Cleaning the cell using high velocity detergent spray or low pressure steam

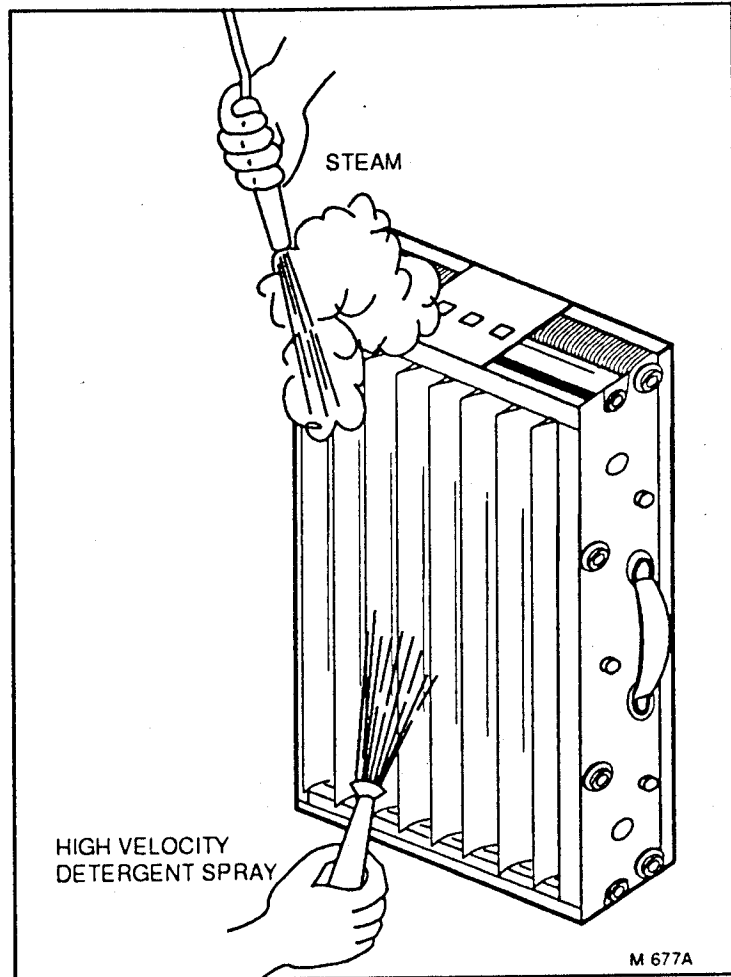
Alternative methods can be used to clean some contaminants from the air cleaner cell. To prevent damage to prefilter, do not use these methods to clean the prefilter.

High Velocity Detergent Spray Method. Be careful to avoid damage to the cell. Use an alkaline base detergent. Do not use an acid detergent. Aim water straight on or at a very slight angle when rinsing collector plate side of cell. This will minimize uneven spacing of collector plates caused by water pressure. After cleaning, rinse cell with clean water.

Low Pressure Steam Method. Be extremely careful when steam cleaning to avoid warping or bending the collector plates of the cell. Remember that the cell will be hot after steam cleaning, and be extremely careful to avoid burns. Use only low pressure or wet steam.

NOTE: Steam pressure must be less than 5 psi [35 kPa] and steam temperature less than 250° F [121° C].

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER



Cleaning discolored aluminum

After cleaning, the cell and prefilter occasionally look stained. If the stain is black or very dark, it is probably dirt residue. This can lower the air cleaner efficiency. Reclean and rerinse the cell and prefilter.

If the stain is white, it is detergent residue. This lowers the air cleaner efficiency and may corrode the aluminum. Rinse the cell and prefilter.

If the stain is tan, yellow, or a thin film, it is probably tobacco smoke or other airborne dirt. Moderate discoloration does not affect the air cleaner efficiency. Recleaning is not necessary.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

**Removing
specific contami-
nants from the
cell and prefilter**

The following page gives a list of appropriate cleaning procedure for types of contamination often found on a cell and prefilter. Cleaning procedures are listed in order of preference. Be careful not to bend cell blades.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

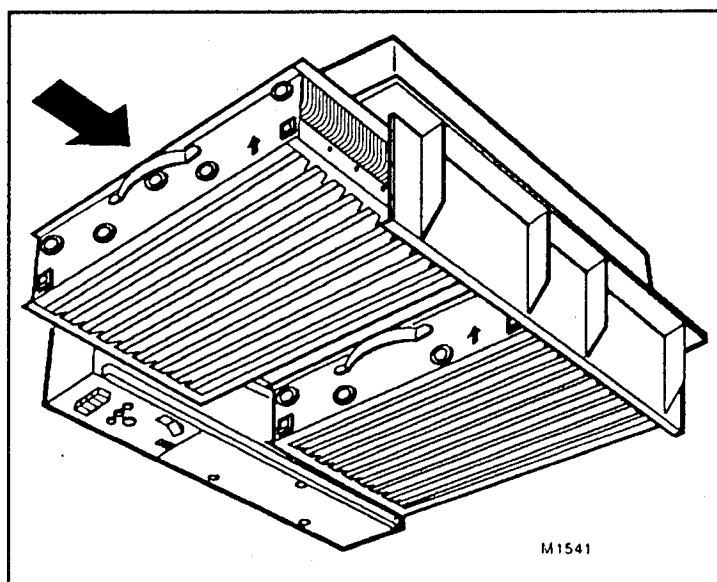
CONTAMINANT	CLEANING PROCEDURE
Animal Hair	Dishwasher Detergent Solution
Carbon (carbon black, soot, lamp black, graphite, charcoal dust, etc.)	Dishwasher Detergent Solution High Velocity Detergent Spray ^a
Cooking Oils: Vegetable (soybean, peanut, etc.)	Dishwasher Detergent Solution Low Pressure Steam ^a
Animal (lard, butter, etc.)	Dishwasher Detergent Solution Low Pressure Steam ^a
Cotton Fibers	Dishwasher Detergent Solution
Dust (silicon dioxide, calcium carbonate and mineral type compounds)	Dishwasher Detergent Solution
Flour Dust	Dishwasher Detergent Solution
Mineral Oil (petroleum base, diesters, and silicone)	Dishwasher Detergent Solution High Velocity Detergent Spray ^a
Paper Products	Dishwasher Detergent Solution
Paint: Oil Base	Dishwasher Detergent Solution
Water Base	Dishwasher Detergent Solution
Pine Tar Resins	Dishwasher Detergent Solution Low Pressure Steam ^a
Soaps	Dishwasher Detergent Solution
Sodium Chloride	Dishwasher Detergent Solution
Sugars (includes molasses, etc.)	Dishwasher Detergent Solution Low Pressure Steam ^a
Talc	Dishwasher Detergent Solution
Tobacco Tars and Smoke	Dishwasher Detergent Solution Low Pressure Steam ^a
Varnishes	Dishwasher Detergent Solution
Waxes (all types)	Dishwasher Detergent Solution Low Pressure Steam ^a

^aMethod not appropriate for cleaning prefilter.

CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

Reinstalling the cell, prefilter, and activated carbon filter (if used)

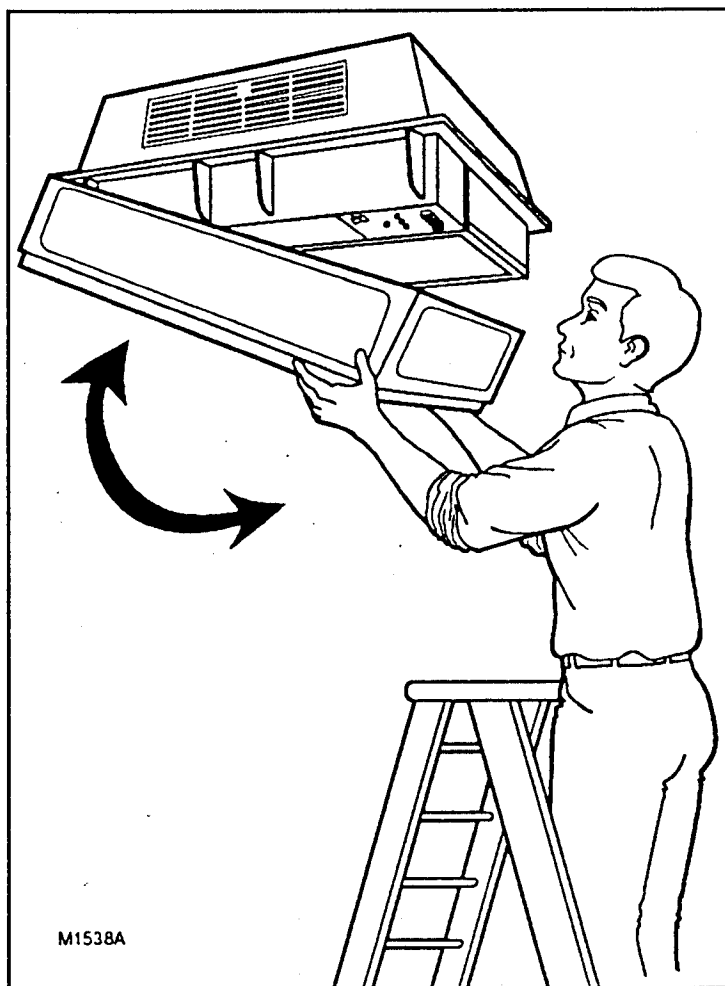
1. Wipe off surface dirt inside and outside of the grille and cover.
2. Replace the activated carbon filter with a new filter if it needs replacement.
3. Inspect the cell for broken ionizer wires and bent collector plates. Moderately bent or warped collector plates can be bent back into shape. Broken ionizer wires must be replaced for top efficiency as instructed in the service instructions.
4. Carefully wipe ionizer wires to remove any remaining residue.
5. Ensure cell is completely dry before reinstalling in the air cleaner. If the cell is placed into the air cleaner while still wet, the cell can short out and arc frequently. Although the air cleaner appears to be operating, the cell may not be cleaning and the CHECK LED can light during the drying period.
6. Slide the cell into the channel guides until it touches the backstop of the air cleaner. **Ensure the cell air flow arrow is pointing toward the fan. In this position, the ionizer wires are facing downward (away from the fan).**



CLEANING YOUR COMMERCIAL ELECTRONIC AIR CLEANER

7. Slide the prefilter into the channel guides until it touches the back of the channels.

8. Swing the cover up until it closes, engaging the two latches.



SERVICE

The air cleaner needs servicing if it is damaged, if efficiency is substandard, if abnormal voltages are measured, or if the CHECK system light is on.

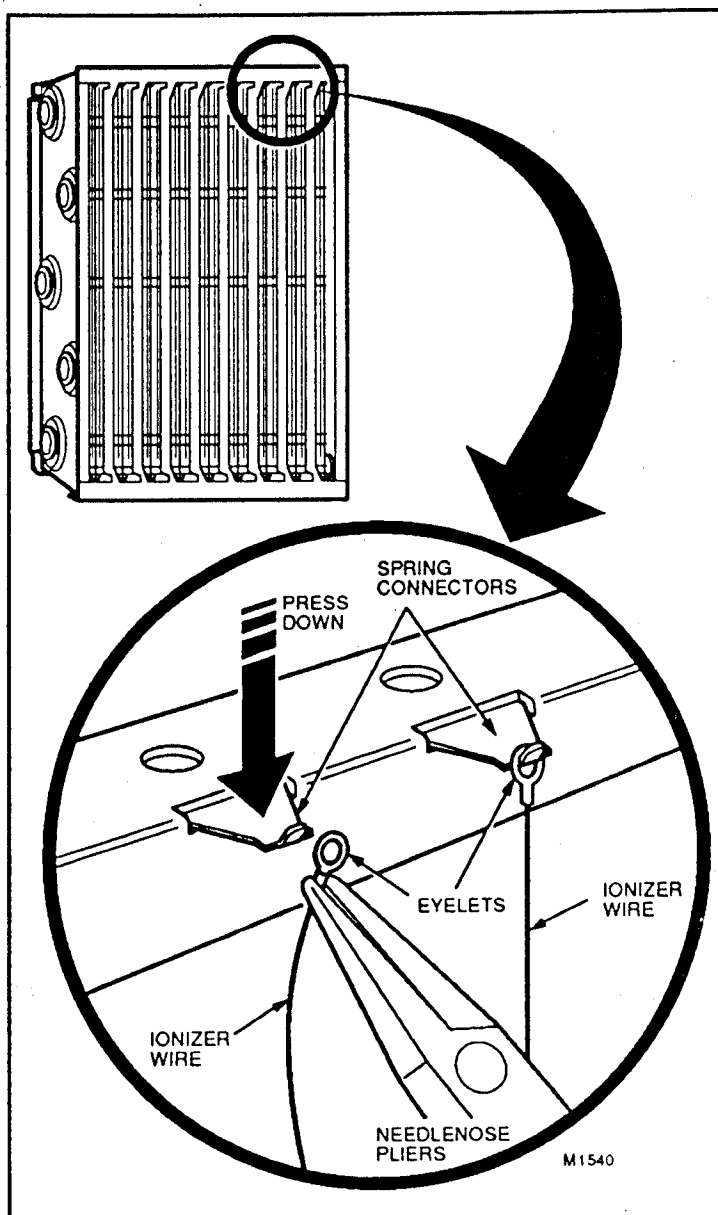
Replacing ionizer wires

Broken or loose ionizer wires can cause a short to ground, often resulting in visible arcing or sparking. Do not use a cell until broken wires are removed. The cell can be used temporarily with one ionizer wire missing, but replace the wire as soon as possible. Replacement wires are supplied cut to length with eyelets on both sides for easy installation. Order part no. 136434AA.

To install:

1. Hook the eyelet on one end of the wire over the spring connector on one end of the cell. Be careful to avoid damaging the spring connector or other parts of the cell.

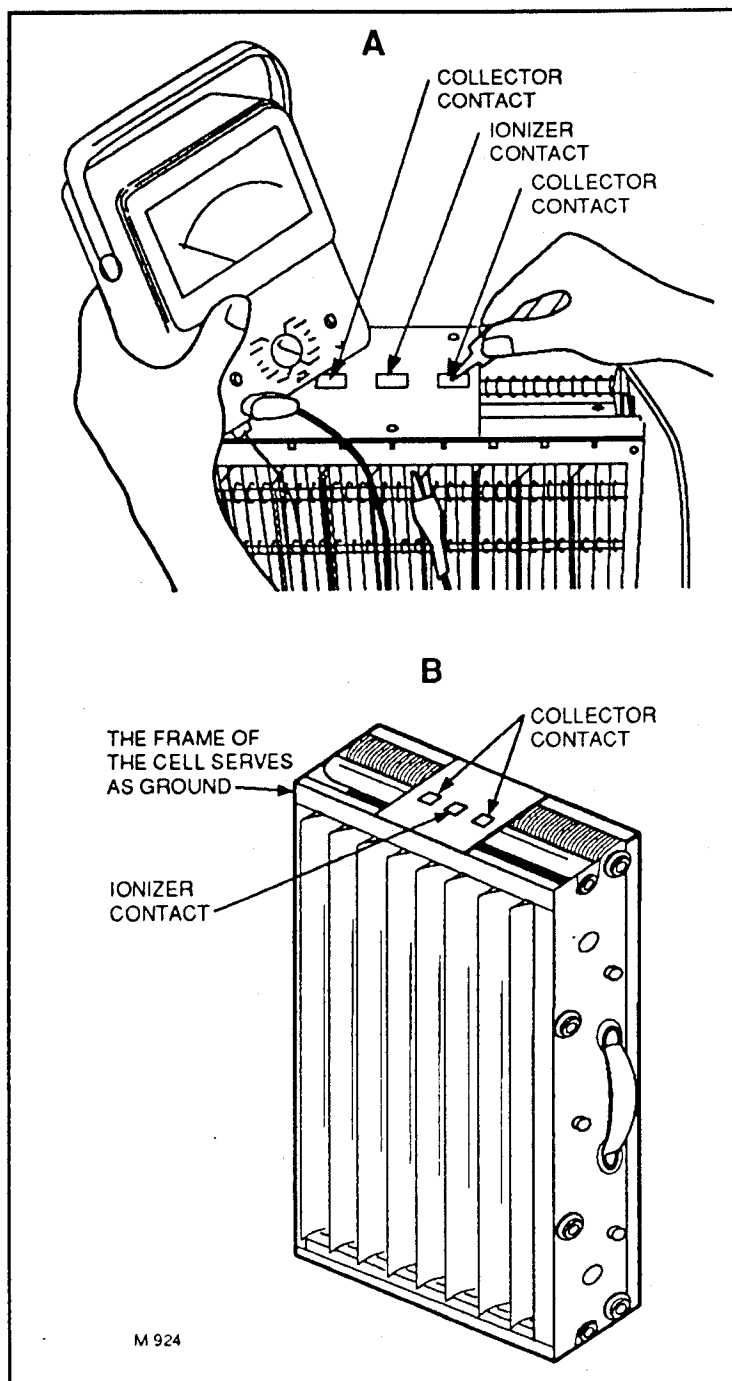
2. Hold the opposite eyelet with a needlenose pliers and stretch the wire the length of the cell. Depress the opposite spring connector and hook the eyelet over it.



SERVICE

Replacing ionizer wires (continued)

3. Check the cell for short circuits by using an ohmmeter. Check the resistance between the frame of the cell and both the ionizer and the collector contacts. In each case, the resistance should be infinite.



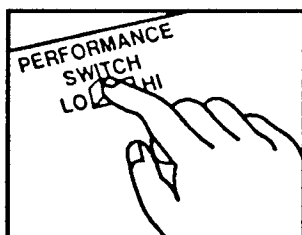
Modifying the air cleaner to reduce ozone odor

In normal operation the air cleaner generates a trace amount of ozone that is well under the limit prescribed by the U.S. Food and Drug Administration (FDA). During the first week or two of operation, the amount may be higher because of sharp edges on some of the metal parts. Normal use and the first cleaning dulls these edges in a short time.

A person with an average sense of smell can detect the odor of ozone indoors in concentrations as low as 0.003 parts per million (PPM). OSHA workplace regulations permit up to 0.100 PPM ozone concentration. The air cleaner contributes 0.005 to 0.010 PPM of ozone to the indoor air. The U.S. FDA and Health and Welfare Canada recommend that indoor ozone concentration should not exceed 0.050 PPM. As a comparison, the outdoor ozone level in major cities ranges from 0.020 PPM to 0.040 PPM and even higher.

If desired, the ozone generated by the air cleaner can be reduced in one of two ways:

- Install the optional activated carbon filter.
- Open the cover and move the air cleaner PERFORMANCE SWITCH to LO. With the switch in LO, the cleaning efficiency is reduced 5 to 15%, depending on air flow.



M 682

NOTE: The PERFORMANCE SWITCH must be set solidly in either HI or LO and not between, or the air cleaner may not function properly.

CHECKOUT

Perform these steps before calling for service:

IF...	THEN...
The air cleaner does not seem to be working.	<ul style="list-style-type: none">• Ensure the access door is firmly closed and latched. If the door is not closed properly, an interlock switch keeps the air cleaner off.• Ensure that the four-speed power switch is set on either LOW, MED, or HI and not OFF.• Press the PUSH TO TEST button. A snapping sound indicates the air cleaner is operating properly. If there is no snapping sound, check the external wiring.• Call your dealer for service. The power supply may not be operating properly.
The air cleaner does not have proper air flow or air cleaning.	<ul style="list-style-type: none">• Ensure the cell is properly oriented. The air flow arrow on the cell should point toward the fan.• Wash the cell and prefilter when dirty.
The CHECK LED comes on.	<ul style="list-style-type: none">• Ensure the cell is clean and dry.• Ensure the air cleaner cover is properly closed.• Check for damaged or shorted ionizer wires.
The WASH LED comes on (if included).	<ul style="list-style-type: none">• Wash the cell and prefilter.• Carefully wipe the ionizer wires to remove any remaining deposits.
The air cleaner arcs (snaps) too frequently.	<ul style="list-style-type: none">• If the cell is wet from washing, turn the air cleaner off for two to three hours.• Check the cell for broken ionizer wires or bent collector plates. Repair when necessary.• Wash cell and prefilter when dirty.
You smell ozone and find it objectionable.	<ul style="list-style-type: none">• Install activated carbon filter next to the prefilter.• Open the cover and move the PERFORMANCE SWITCH to the LO setting.

NOTES

LIMITED ONE-YEAR WARRANTY

Honeywell warrants this product to be free from defects in the workmanship or materials, under normal use and service, for a period of one (1) year from the date of purchase by the consumer. If, at any time during the warranty period, the product is defective or malfunctions, Honeywell shall repair or replace it (at Honeywell's option) within a reasonable period of time.

If the product is defective, please contact:

- a) the dealer or full-service distributor from whom you purchased the product, or
- b) the local Honeywell Authorized Repair Station, or
- c) the local Honeywell Residential and Building Controls Sales Office, or
- d) the Honeywell Consumer Services Department, toll-free at 1-800-468-1502, or
- e) package it carefully, along with a bill of sale, receipt, or other dated proof-of-purchase, and a short description of the malfunction, and ship it, prepaid, to the following address:

Honeywell Inc.
Return Goods Department
1050 Berkshire Lane
Plymouth, MN 55441-4437

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Honeywell that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.

Honeywell's sole responsibility shall be to repair or replace the product within the terms stated above. HONEYWELL SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESSED OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

THE WARRANTIES SET FORTH HEREIN ARE EXCLUSIVE, AND HONEYWELL EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, WORKMANSHIP, OR FITNESS FOR A PARTICULAR PURPOSE.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

If you have any questions concerning this warranty, please write our Consumer Services Department, Honeywell Inc. 1885 Douglas Dr. N., Golden Valley, MN 55422-4386, or call toll-free 1-800-468-1502, Monday-Friday, 7:30 a.m. to 5:00 p.m., Central time.

Honeywell

Residential and
Building Controls Division
Honeywell Inc.
1985 Douglas Drive North
Golden Valley, MN 55422

Helping You Control Your World



QUALITY IS KEY