TOTALINE® Gold

INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS

Return Grille Mount Electronic Air Cleaner

Part Numbers: P102-GM20-A

IMPORTANT: Read entire instructions before installing the air cleaner.

IF YOU NEED HELP call toll free: 1-800-267-8305

CONTENTS

SAFETY CONSIDERATIONS 1
GENERAL 1
COMPONENTS 1,2
Cabinet 1
Prefilters 2
Collecting Cells 2
Electrical Compartment 2
• AIR PROVING SWITCH (APS)
INSTALLATION 2-4
Location 2
Electronic Air Cleaner Installation 3
Wiring 3
SYSTEM CHECK 4
OPERATION 4
Ozone 4
Dust 4
MAINTENANCE 4,5
Cell and Prefilter Cleaning 4
SERVICE 5-7
Testing Air Proving Switch (APS) 5
Replacing an Air Proving Switch (APS) 5
Testing for High Voltage at Power Board 5
Replacing Performance Light 5
Replacing a Power Board 6
Testing the 24-V Transformer 6
Replacing the 24-V Transformer 6
Testing Power Board Voltage 6
Testing Cell for Bad Contacts 7
Replacing a Tungsten Ionizing Wire 7
TROUBLESHOOTING 8

SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage the air cleaner.

Recognize safety information. This is the safety alert symbol ⚠. When the safety alert symbol is present on equipment or in the instruction manual, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety alert symbol. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies a hazard which could result in personal injury or death. CAUTION is used to identify unsafe practices which would result in minor personal injury or property damage.

⚠ WARNING

Before beginning any installation or modification, be certain that the main line electrical disconnect switch is in the OFF position. Electric shock could result. Tag disconnect switch with suitable warning labels.

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform the basic maintenance functions of cleaning and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves.

GENERAL

The electronic air cleaner is designed to remove atmospheric and household dust, pollen, mold spores, bacteria, insecticide dust, animal dander, coal dust, cooking smoke and grease, and tobacco smoke particles down to 0.01 micron.

First, the prefilter removes all large visible particles such as lint or hair. Next, the electronic air cleaner ionizes the particles in the air (the particles are given a strong positive electrical charge). The particles are then attracted to grounded plates and collected. Pollutants are held onto the plates like a magnet until cleaning when they are washed away.

The P102-GM20-A electronic air cleaner has an airflow capacity of up to 2000 cfm. See Table 1. The electronic air cleaner must be installed in the return air duct, either in a wall or ceiling, but not in the floor. The electronic air filter will replace the existing return air grille currently installed in the main return duct. For the unit to perform properly, all return air must pass through it.

Regular maintenance (cleaning of prefilters and collecting cells) is required by the home owner.

COMPONENTS

See Fig. 1 for a detailed drawing of the P102-GM20-A electronic air cleaner.

Cabinet — The cabinet is constructed of 18 gage steel, painted with a tough powder-coated, scratch-resistant finish. Holes are provided in the cabinet for easy mounting in the ductwork. Access to the collecting cells and prefilters is through a hinged door, which is interlocked to cut power when the unit is opened. See Fig. 2 for cabinet dimensions.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

REPLACEMENT COMPONENTS DIVISION

© CARRIER CORPORATION 2005 8/05

PRINTED IN U.S.A.

LITERATURE NUMBER P102-9SI
REPLACES: P102-7SI
CATALOG NUMBER 570-496

Table 1 — Specifications

PART NUMBER	P102-GM20
Airflow	up to 2000 cfm
Duct Size	22 x 29.1 in.
Cabinet Dimensions	31.4 x 24.4 x 7 in.
Unit Weight	38 lb
Input Voltage	120 V 60 Hz
Power Consumption	30 Watts

Prefilters — The prefilters, measuring 11 1/2 x 20 inches, are constructed of multiple layers of aluminum mesh. This mesh prevents lint and other large particles from entering the collecting cells.

Collecting Cells — The dual voltage collecting cells are constructed of heavy gauge aluminum to resist rust and damage. The collecting cells consist of an ionizing section and a plate section. The ionizing section is charged at approximately 7000 vdc. The collecting plates are alternately grounded and charged at 4600 vdc. The arrow on the cells must point toward the rear of the unit.

Electrical Compartment — The electrical compartment contains the system switch, safety interlock, high voltage power board, transformer, air proving switch, and performance indicator light.

AIR PROVING SWITCH (APS) — An integrated air proving switch automatically cycles the electronic air cleaner on and off with the furnace fan. The APS will detect airflow (fan on) and energize the electronic air cleaner.

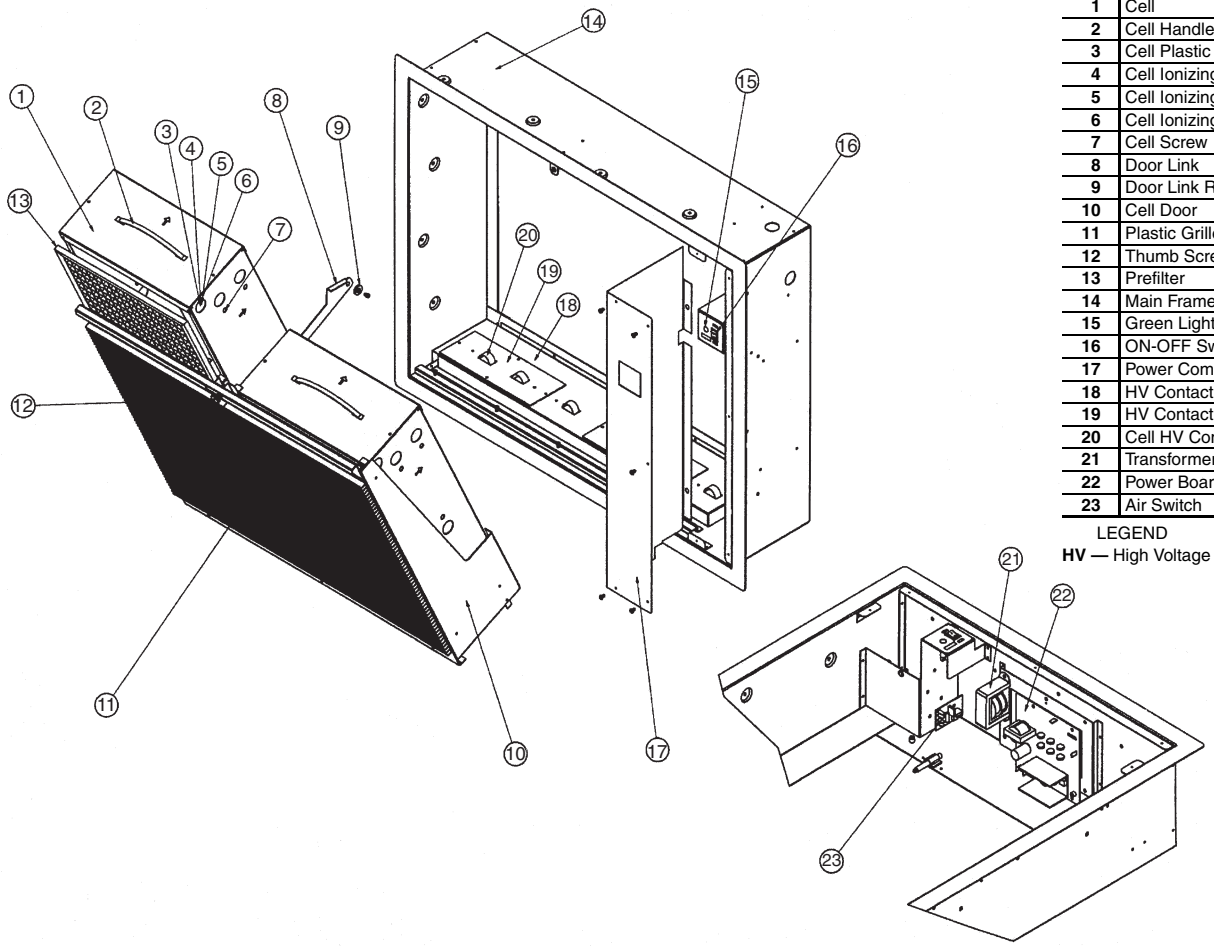
INSTALLATION

Location — The electronic air cleaner must be installed in the return air duct, either in a wall or ceiling, but not in the floor. The electronic air filter will replace the existing return air grille currently installed in the main return duct. For the unit to perform properly, all return air must pass through the air cleaner. Do not reduce ductwork to a smaller air cleaner or it will increase the velocity of airflow.

In a wall installation, the unit must be installed with the hinge down.

The return duct or transition should end slightly behind the finished wall or framing. It should be approximately 1/4 to 1/2-in. larger than the air cleaner to allow the back of the unit to slip into the duct when installing.

When the air duct does not fit the air cleaner opening, a gradual transition is recommended to reduce air turbulence through the air cleaner and to increase its efficiency. There should not be more than 20 degrees of expansion used for the transition fitting.



PARTS LIST	
Item	Description
1	Cell
2	Cell Handle
3	Cell Plastic Insulator
4	Cell Ionizing Bar
5	Cell Ionizing Wire
6	Cell Ionizing Wire Spring
7	Cell Screw
8	Door Link
9	Door Link Retaining Ring
10	Cell Door
11	Plastic Grille
12	Thumb Screw
13	Prefilter
14	Main Frame
15	Green Light
16	ON-OFF Switch
17	Power Compartment Cover
18	HV Contact Tray
19	HV Contact Board
20	Cell HV Contact
21	Transformer
22	Power Board
23	Air Switch

LEGEND
HV — High Voltage

Fig. 1 — Electronic Air Cleaner Details

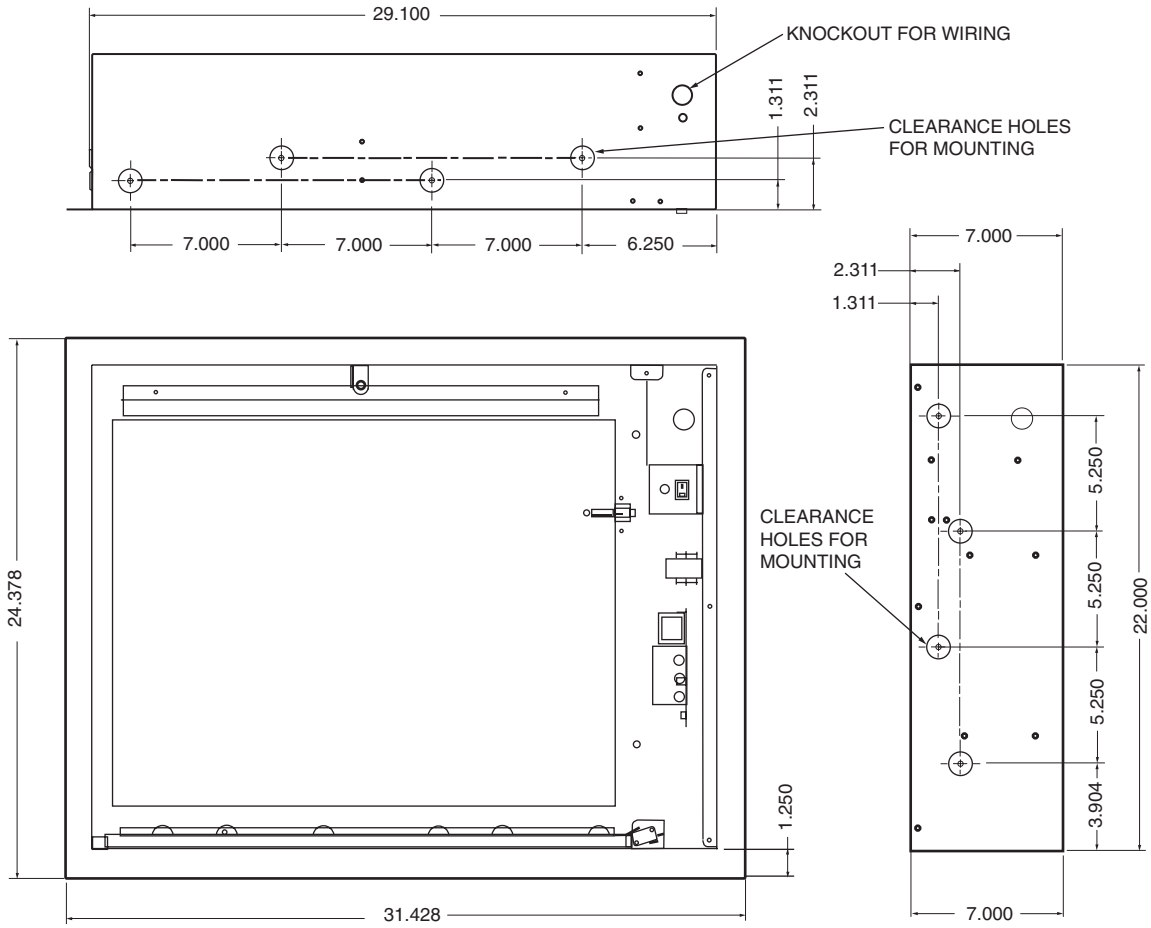


Fig. 2 — Dimensions

Electronic Air Cleaner Installation — Perform the following to install the electronic air cleaner:

1. Carefully remove the air cleaner from the carton.
2. Open the access door. Slide the prefilters and collecting cells out of the cabinet.
3. Remove the access door by removing the screw on the end of the retaining link in the enclosure. Lower the access door and remove the screws securing the hinge to the enclosure.
4. Remove the five screws securing the electrical compartment cover. Remove the cover.
5. Remove the existing return air grille from its location in the wall or ceiling.
6. Measure the opening to ensure that with framing, it will be large enough for the air cleaner.
7. Frame the opening to provide adequate support for the air cleaner.
8. Before mounting the air cleaner, cover the framing and close the opening to within $^1/_4$-in. of the air cleaner's rear dimension.
9. Mount the air cleaner into the framed hole and slide into the duct until the front flange is flush with the wall or ceiling. Secure the air cleaner to the frame using sheet metal screws. Do not overtighten screws as this may distort the enclosure. Once the unit is secured, replace the access door and retaining link.
10. Replace prefilters and collecting cells. Make sure that arrow on the cells is pointing towards the fan.
11. Close access door.

Wiring — Wiring should be performed by qualified personnel only. All wiring must comply with all applicable codes and standards. The voltage of the power source must match the voltage indicated on the electronic air cleaner. The electronic air cleaner should operate ONLY when the fan is running. Make sure the electronic air cleaner is properly grounded.

⚠ WARNING

Electrical shock can cause injury or death. Be certain main line disconnect switch is off before wiring.

Wire the electronic air cleaner directly to the 120-v power source. The APS will power the electronic air cleaner when there is sufficient airflow to activate the sensor. See Fig. 3.

1. Connect the black lead of the air cleaner to the line side of the power source.
2. Connect the white lead to the neutral side of the power source.
3. Connect the green lead to ground.
4. Replace the electrical compartment cover.

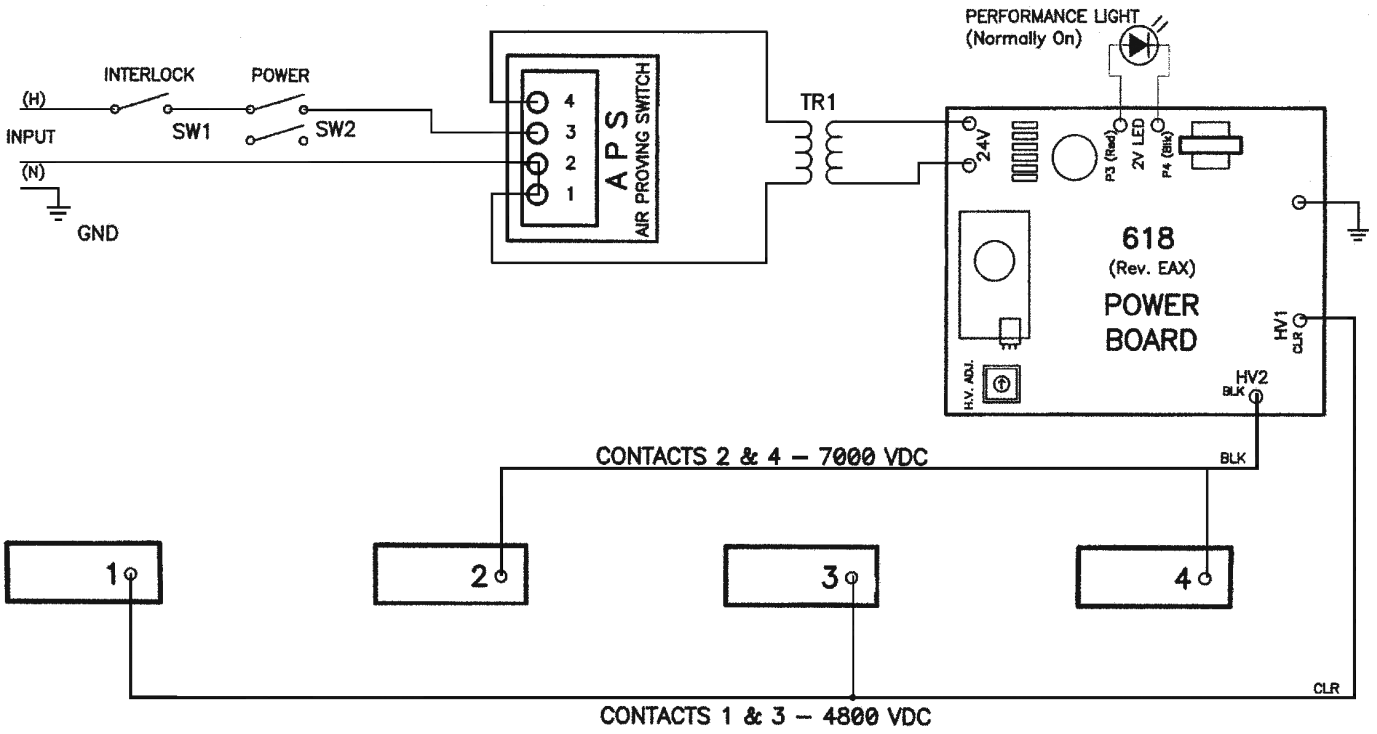


Fig. 3 — Wiring Schematic

SYSTEM CHECK

Perform the following system check before operation.

1. Make sure all electronic air filter components are in place and that the access door is closed.
2. Turn the electronic air cleaner power switch to ON. Ensure that the system blower fan is operating. The performance indicator light should be lit. The performance indicator light shows that the electronic air cleaner is operating.

NOTE: There may be some arcing or snapping sounds from the cells or some odor of ozone. This is normal when the unit is new. In about 2 weeks, as the sharp edges of the collecting cells become smoother, the arcing and odor will disappear.

OPERATION

The electronic air cleaner will run as long as there is airflow through the ducts. The electronic air cleaner will not run if the blower fan is off.

Follow these steps for proper operation of the electronic air cleaner:

- run the heating/cooling system fan continuously and on low speed if available
- remove furniture that blocks return air grilles throughout the house, so that air moves freely to the furnace
- check for proper operation of the blower fan on the furnace
- ensure that the prefilters are cleaned on a regular basis.

Ozone — The electronic air cleaner emits less than 0.005 ppm of ozone. Ozone may be noticeable in extremely dry environments and can be prevented with proper humidification.

Dust — After installing the electronic air cleaner, there may be some white dust on table tops and shelves. Most heavy particles (such as lint) settle quickly and do not get filtered through the electronic air cleaner. To reduce lint and dust, use continuous fan operation and keep return vents unrestricted to create an efficient airflow.

Lint dust, which is too heavy to remain airborne, will be cleaner as the darker, staining particles have been removed by the electronic air cleaner. Lint will be more noticeable against dark furnishings. The electronic air cleaner does not produce more lint or dust.

MAINTENANCE

Scheduled maintenance is very important and must be performed by the home owner. If cells and filters are not cleaned on a regular basis, the electronic air cleaner will not operate effectively.

⚠ CAUTION

Make sure to turn electronic air cleaner off before performing any maintenance or removing any components. Failure to ensure power is off could result in equipment damage or personal injury.

Cell and Prefilter Cleaning — The collecting cells and prefilters must be cleaned on a regular basis for the air cleaner to function at its peak efficiency. The frequency of cleaning will vary from one house to another. On average, the cells should be cleaned every 3 months. To clean cells:

1. Open the air cleaner access door, remove cells and prefilters.
2. Place cells in a laundry tub. Rinse the cells with hot water and spray completely with a non-chlorine, non-corrosive, non-abrasive liquid household detergent. (DAX detergent is recommended.) Allow detergent to run down both sides of plates and ionizing wires. Let the cells stand for 5 minutes.
3. Rinse the cells with hot water (maximum temperature of 120 F [49 C]).

4. If dirt remains, let the cells soak in solution of DAX detergent and water for 30 minutes.
5. Tilt the cells on a 45 degree angle on their short side and allow them to dry completely (approximately 8 to 10 hours). A hair dryer may be used to speed up drying time.
6. Wash the prefilters. Do not wash in the same water as the collecting cells. Spray prefilters with DAX detergent, rinse, and let them dry.
7. Place the cells and prefilters back into the air cleaner cabinet. Close the access door and turn the unit on. If the performance indicator light does not come on or arcing occurs, turn the electronic air cleaner off and allow the furnace fan to dry the cells completely.

⚠ CAUTION

Damage to cells may occur if improperly handled or washed. Do not wash cells in a dishwasher. Never use any object to clean between the cell plates as this may cause damage to plates or ionizing wires. Never place cell in oven to dry. The edges of the cell may be sharp — handle with care.

SERVICE

⚠ WARNING

Electronic air cleaners use high voltage. Use extreme caution when performing service on electronic air cleaner. Only trained personnel should perform service. Electric shock can cause injury or death.

Testing Air Proving Switch (APS) — The APS sensor must protrude into the airstream to work effectively. The sensor is very sensitive and operation may be affected by cold basement temperatures, an air exchanger, or a fresh air duct connected to the cold air return near the electronic air cleaner.

The APS uses a Triac in its output circuit which affects the voltage sine wave. Using a regular digital voltmeter will give a false reading. To check the output from the APS, use a true RMS (root mean square) meter to measure the output at terminals 1 and 4 of the APS. The output should be between 105 and 115 vac, depending on the airflow across the sensor.

A 125 volt neon lamp may be used to test the output of the APS. Place the leads of the lamp across terminals 1 and 4 of the APS. If the lamp lights, the voltage is sufficient for operation.

When the electronic air cleaner is turned on without airflow, the APS sensor heats up and, after 30 seconds, opens the circuit to turn off the power board. When the fan starts up (the sensor is cooled), the circuit will close, the power board is turned on, and the performance light will come on.

If the power board fails to come on with the blower on, check that the sensor is properly set in the airstream, behind the cell next to the switch. To check the APS for proper operation, turn the unit on and activate. The power board should come on immediately, and then turn off in 30 seconds as the sensor heats up. Service the sensor carefully; the sensor leads are 120 v.

Replacing an Air Proving Switch (APS) — Before replacing the APS, turn off the power to the electronic air cleaner. Perform the following procedure to replace the APS:

1. Disconnect the wiring from terminals 1, 2, 3, and 4 on the APS. See Fig. 3.
2. Release the circuit board from the plastic spacers by pinching the end of the spacer and pulling board out.
3. Install the new APS on the plastic spacers. Ensure that the sensor protrudes into the airstream.
4. Connect the wiring to terminals on the APS. See Fig. 3. Wiring from the power source is connected to terminals 2 and 3. Wiring to the power board is connected to terminals 1 and 4.
5. Test the new APS (see Testing Air Proving Switch above).

Testing for High Voltage at Power Board — A high voltage meter capable of measuring up to 10,000 vdc is required to test the voltage. Perform the following procedure to test for high voltage at the electronic air cleaner power board:

1. The air cleaner should be on with the door closed. The unit fan should be running. The electronic air cleaner should be on for at least 5 minutes to allow voltage to stabilize.
2. Remove the electrical compartment cover.
3. Connect the high voltage meter ground to the power board's ground stud.
4. Check terminals HV1 and HV2 on the power board to determine if voltage is present.
5. If no voltage is present, turn the unit off and remove both cells from the air cleaner and close the access door. Turn the unit on.
   a. Check the voltage at HV1 and HV2 again.
   b. If voltage is present, the problem is with one of the cells or the copper contact on the high voltage tray.
   c. With a flashlight, look into the cabinet to check condition of the copper contacts.
   d. If the contacts are not bent, replace one cell and retest the voltage. If the cell is okay, test the other cell. If the problem is with a cell, see the troubleshooting section.
   e. Check the APS to make sure that it is functioning correctly.
   f. Check the transformer to make sure that power is being supplied to the electronic air cleaner.
6. If there is voltage present but the performance light does not come on, replace the light.
7. High voltage can be adjusted with high voltage potentiometer, if required.

⚠ WARNING

Electrical shock can cause personal injury or death. Be certain main line disconnect switch is off before replacing air cleaner components.

Replacing Performance Light — Before replacing performance light, turn off power to the electronic air cleaner at the source. Perform the following procedure:

1. Remove the electrical compartment cover.
2. Disconnect the performance light wiring connected to the LED terminals on the power board.
3. Push the light out through the front of the switch bracket.
4. Push the new light into the bracket.
5. Connect the wiring to the LED terminals on the power board. See Fig. 3.
6. Replace the electrical compartment cover.
7. Return power to electronic air cleaner. Test the light.

Replacing a Power Board — Before replacing power board, turn off power to the electronic air cleaner at the source. Perform the following procedure:

1. Remove the electrical compartment cover.
2. Disconnect the wiring from the LED, HV1, HV2, and 24 v terminals. See Fig. 3.
3. Remove the hex nut from the power board.
4. Release the power board from the three plastic board spacers by pinching the end of the spacers and pulling the board out.
5. Push the new board onto spacers. Make sure the spacers click into place to hold down the board.
6. Replace the hex nut removed in Step 3. Ensure that the star washer is in place over the steel spacer for proper grounding.
7. Reconnect the wiring to LED, HV1, HV2, and 24 v terminals on the new power board.
8. Replace the electrical compartment cover.
9. Return power to electronic air cleaner. Test the power board.

NOTE: Although the power board has been set before shipping, it may be necessary to reset the voltage to the correct load for optimum efficiency. Refer to Testing Power Board Voltage section for more information.

Testing the 24-V Transformer — To test the 24-v transformer, perform the following procedure:

1. Turn electronic air cleaner off.
2. Remove the electrical compartment cover.
3. Disconnect the leads of the 24-v transformer from the power board. See Fig. 3.
4. The electronic air cleaner should be on. The unit fan should be running. The electronic air cleaner door should be closed.
5. Measure the voltage across leads with a voltmeter. Voltage should read 24 to 27 vac.
6. If no voltage is present, check the operation of the APS.
7. Before replacing the transformer, check the resistance of the power board input. Input should read above 40 K ohm. If resistance is below 40 K ohm, the power board may be the cause of the transformer failure.
8. Reconnect leads to the power board.
9. Replace the electrical compartment cover.

Replacing the 24-V Transformer — Before replacing 24-v transformer, turn off power to the electronic air cleaner at the source. Perform the following procedure:

1. Remove the electrical compartment cover.
2. Disconnect the secondary leads from the transformer to the 24 v terminals on the power board. See Fig. 3.
3. Cut the primary leads (to the APS) close to the transformer.
4. Remove the 2 hex head nuts from the transformer studs.
5. Remove the transformer.
6. Place the new transformer over the studs and re-install the two hex head nuts to lock it into place.
7. Connect the secondary leads (white) to the 24 v terminals on the power board.
8. Wire nut the primary leads from the APS (cut in Step 3) to the primary leads from the transformer.
9. Replace the electrical compartment cover.
10. Turn on power to the electronic air cleaner and test.

Testing Power Board Voltage — The power board voltage may drop below the required level when the installation area is too damp, too cold, or if there is water leakage from a humidifier. The voltage on the power board may be too high when the installation area is too dry or too hot. By adjusting the high voltage adjust (HV ADJ) potentiometer, the voltage can be set to the optimum level. A high voltage meter capable of measuring 10,000 vdc is required. To test and adjust the voltage level, perform the following procedure:

1. Turn the electronic air cleaner off.
2. Remove the electrical compartment cover.
3. Connect the ground of the high voltage meter to the power board's ground stud.
4. Turn on the electronic air cleaner and wait 5 minutes before checking voltages to allow the cell voltages to stabilize.
5. Measure the voltages at HV1 and HV2 on the power board. See Fig. 3.
6. Adjust the HV ADJ potentiometer until the voltage reading matches the voltage in Table 2.
7. Turn off the electronic air cleaner.
8. Remove the high voltage meter.
9. Replace the electrical compartment cover.
10. Turn on electronic air cleaner.

Table 2 — Power Board Voltage Settings

UNIT	MAXIMUM PLATE VOLTAGES (K VDC)	MAXIMUM IONIZER VOLTAGE (K VDC)
P102-GM20	4.6-4.8 (HV1)	7.0-7.3 (HV2)

TESTING VOLTAGE AT CELL — To test the voltage at the cell, perform the following procedure:

1. Turn off the air cleaner power switch. Open the access door and remove prefilters from the track.
2. Close the access door and remove one of the grilles from in front of each cell.
3. Remove the electrical compartment cover.
4. Attach the high voltage meter ground to a grounded area of the cell.
5. Place the tip of the high voltage probe on the cell wire.
6. Turn the air cleaner on.
7. Wait until the voltage stabilizes then take a reading. Adjust the HV ADJ potentiometer until the voltage reading matches the voltage in Table 2. If the voltage fails to stabilize or jumps up and down by more than 100 v, there may be a bad contact in the cell or a bad contact between the cell contacts and the high voltage contacts on the contact tray.
8. Test the voltage in both cells, they should read very close to the same voltage.
9. Remove the probe. Turn the air cleaner off, replace the grilles, prefilters, and electrical compartment cover.
10. Close the access door and turn the air cleaner on.

SET APPROXIMATE VOLTAGE WITHOUT HIGH VOLTAGE METER — Use a high voltage meter if available. If one is not available, use the method below, which will only set an approximate voltage. After using this method, the voltage should be reset with a high voltage meter as soon as possible.

1. Remove the electrical compartment cover.
2. Turn the HV ADJ potentiometer fully counterclockwise. The electronic air cleaner may arc or snap at this point.

3. Turn the HV ADJ potentiometer clockwise slowly until the arcing and snapping stops.
4. Replace the electrical compartment cover.

Testing Cell for Bad Contacts — To test a cell for bad contacts, perform the following procedure:

1. Turn off the power switch.
2. Open the air cleaner access door and remove the prefilters. Close the access door.
3. Remove one of the grilles from in front of each cell.
4. Turn the air cleaner on.
5. Place a screwdriver between the cell plates. There should be an initial snap when the plates are shorted, then no sound. If a hissing or ticking occurs, then there is a bad contact either between the cell and the high voltage contact or between the contacts within the cell.
6. Test the ionizing wires by the same method, shorting the wire to the grounded extended cell plate.
7. Turn the air cleaner off. Remove the cells and check to see if the copper contacts along the bottom of the cell channel are free.
8. With an ohmmeter, check continuity between the top, outside disc contact and the first plate on the opposite side of the cell. The reading should be close to 0 ohms. If not, bend the contact to touch the plate.
9. Remove screwdrivers. Replace the cells, grilles, and prefilters.
10. Close access door.

Replacing a Tungsten Ionizing Wire — Replacement wires are cut to the correct length and have eyelets at each end for easy replacement. To replace an ionizing wire, perform the following procedure:

1. Turn off power to the electronic air cleaner.
2. Remove the cell from the air cleaner.
3. Remove all parts of the broken wire, as well as the spring and S-hook. If necessary, the cell may be used temporarily with one wire missing until a replacement is received.
4. Using needle-nose pliers, place the spring hook in the hole of the ionizing bar near the cell top.
5. Place the eyelet of the wire over the S-hook and place the S-hook into the hole on the ionizing bar on the other side of the cell. Keep the wire tight to ensure that the S-hook remains in the hole.
6. Using the needle-nose pliers, grab the end of the spring and stretch it towards the loop in the wire. Place the eyelet in the wire over the spring hook and release the spring. See Fig. 4.
7. Install the cell in the air cleaner.
8. Return power to the air cleaner.
9. Test the cell for proper operation.

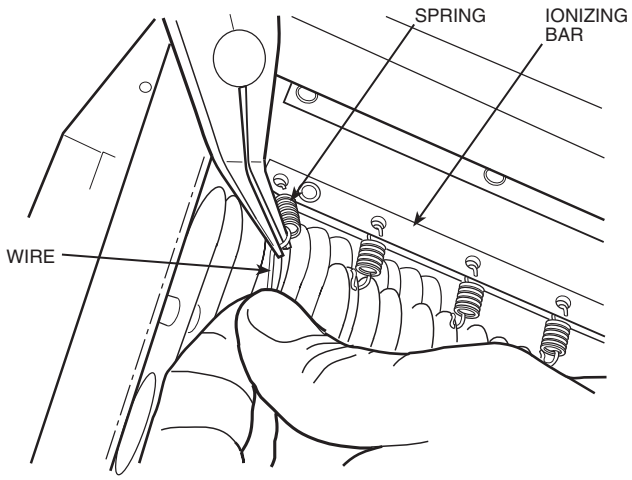


Fig. 4 — Replacing an Ionizing Wire

TROUBLESHOOTING

Refer to Table 3 for troubleshooting information.

Table 3 — Troubleshooting

PROBLEM	PROBABLE CAUSE	REMEDY
Unit Does Not Function Correctly. Power Switch is On and Performance Indicator Light is Off.	Fan is not on.	Turn furnace fan on.
	Wiring improperly connected.	Check wiring.
	Defective power switch.	Check power switch for continuity with multimeter. Replace if defective.
	Defective safety interlock.	Remove electrical cover and test safety interlock with a multimeter. Replace if defective.
	Power (120 v) is not provided to device.	Check power wiring with multimeter.
	Short in cells. Due to: 1. Broken ionizing wire(s). 2. Large particles wedged between cell plates. 3. Cells washed recently and are still wet. 4. Round end plate insulator is burnt or melted. 5. Cell plates are bent.	 1. Remove wire or wire fragments, spring and S-hook. Replace ionizing wire. 2. Shake large particles out or wash cell. 3. Allow cells to dry completely. 4. Replace end plate insulator. 5. Straighten plates with pliers.
	Defective performance indicator light.	Determine whether high voltage is present by testing power board. If present, replace indicator light.
	Defective power board.	Adjust high voltage potentiometer on power board counter-clockwise. If high voltage is not present, replace power board.
	Air proving switch sensor (APS) is burnt out.	Jumper 3 and 4 on APS, close door. If light does not come on, replace APS.
	Off board 24-v transformer is not working.	Verify output of transformer. Replace if necessary.
Cell Makes Loud Hissing Noise or Causes Radio Interference.	Internal cell contacts are not touching plates.	Test contact and repair.
	Copper contacts on high voltage tray not making good connection on cell.	With needle-nose pliers, gently pull contacts up or replace contacts.
Cells Arcing Excessively (Power Switch and Performance Indicator Light On).	Cells wet from washing.	Allow cells to dry completely.
	Particle lodged in cell or broken ionizing wire.	Wash cell. Shake particle out of cell. Replace wire, if necessary.
	Ducts were not cleaned prior to installation of electronic air cleaner.	Clean ducts.
	Cell plates are bent.	Remove cells and adjust to original spacing using needle nose pliers.
	Voltage is too high.	Adjust high voltage potentiometer on power board clockwise.
Cells Arcing Excessively At Bottom of Cell Near Copper Contacts (Power Switch and Performance Indicator Light On).	Contacts on high voltage tray are broken or bent down.	If possible, pull up contacts with needle nose pliers or remove high voltage tray and replace contacts.
Cells Not Collecting Dirt (Power Switch and Performance Indicator Light On)	Arrow on cell(s) not pointing towards back.	Reposition cells.
	Furnace fan is on “Automatic” setting (air cleaner not on continuously)	Use “Fan On” furnace fan setting for continuous fan operation.
	Not enough voltage on collecting cells.	Adjust high voltage potentiometer counterclockwise on power board.
Ozone Odor	Cell plates are bent.	Straighten with needle nose pliers.
	Loose or broken ionizing wires.	Replace wires.
	Dirty cells.	Wash cells.
	Electronic air cleaner is on when system fan is not running. Air switch not activated, or electronic air cleaner wired incorrectly.	Check operation and wiring of air switch and electronic air cleaner.
	Incoming voltage is higher than 120 v.	Adjust high voltage potentiometer clockwise on power board.
	Air cleaner is oversized for house. Not enough airflow to cover surface area of cells.	Use correct size of electronic air cleaner.
	Home is extremely dry.	Install a central humidifier, or repair existing central humidifier.
More Dust After Installation Than Before	Lint dust too heavy to remain airborne.	Keep fan running continuously. Ensure that return air grilles are not obstructed.

ELECTRONIC AIR CLEANER
LIMITED FIVE-YEAR WARRANTY

FIVE-YEAR WARRANTY — This CARRIER CORPORATION product is warranted to be free from defects in material and workmanship under normal use and maintenance for a period of five years from the date of original installation. A new or remanufactured part to replace the defective part will be provided without charge for the part itself, through a qualified servicing CARRIER CORPORATION dealer or service, PROVIDED the defective part is returned to our distributor. The replacement part assumes the unused portion of the warranty.

THIS WARRANTY DOES NOT INCLUDE ANY ADDITIONAL LABOR ALLOWANCE OR OTHER COSTS, incurred for diagnosis, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts. SUCH COSTS MAY BE COVERED BY a separate warranty provided by the installer.

LIMITATIONS OF WARRANTIES — ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

CARRIER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual including cleaning and/or replacement of filters, media or electronic cells.
2. Damage or repairs required as a consequence of faulty installation or application by others.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operations.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of CARRIER CORPORATION.
6. Parts not supplied or designated by CARRIER CORPORATION.
7. CARRIER CORPORATION products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

Model No.	Unit Serial No.
Date of Installation	Installed by
Name of Owner	Address of Installation

TOTALINE®

Gold

Your Assurance of Quality

ALL Totaline products are backed by Carrier Corporation, the world's largest manufacturer of air conditioning, heating, and refrigeration products.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

REPLACEMENT COMPONENTS DIVISION
© CARRIER CORPORATION 2005 8/05
PRINTED IN U.S.A.

LITERATURE NUMBER P102-9SI
REPLACES: P102-7SI
CATALOG NO. 570-496