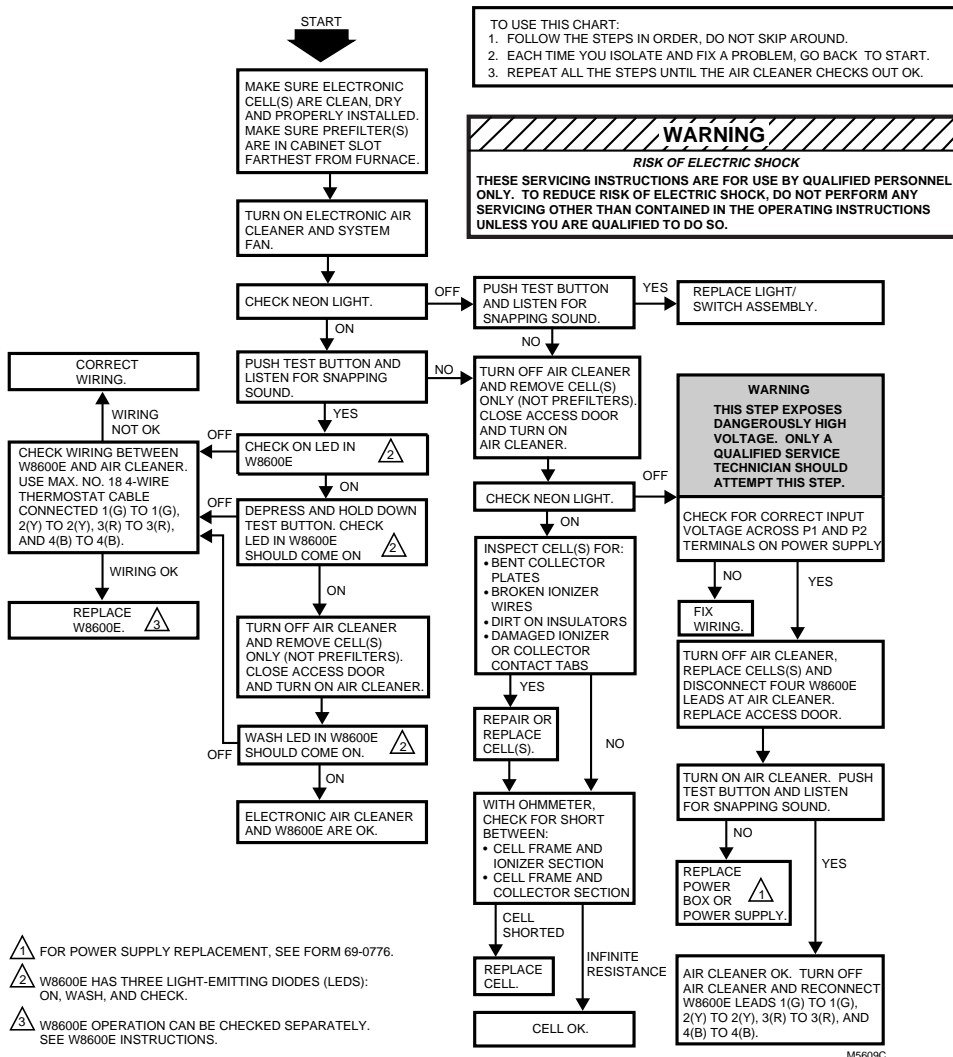


Troubleshooting F50F Air Cleaners with a W8600E Solid State Performance Indicator and Air Flow Switch



ELECTRICAL TROUBLESHOOTING

⚠ WARNING

ELECTRIC SHOCK HAZARD. CAN CAUSE PERSONAL INJURY OR EQUIPMENT DAMAGE.

The following procedures expose hazardous live parts. Disconnect from power between checks and proceed carefully. The instructions are for use by only qualified personnel.

TOOLS AND EQUIPMENT

Troubleshooting the electronic air cleaner requires:

- Needle nose pliers for stringing ionizer wires and inserting edge connectors. Test meter.

NEON LIGHT (On Power Box)

The neon light is powered through the power supply and is on when the power supply output voltage is normal.

TEST BUTTON

When pushed, the *test button* shorts from collector voltage to ground. The resulting arcing sound indicates that high voltage is being supplied to the collector. The solid state power supply controls current flow to the collector. On air cleaners with a W8600E, the CHECK LED will come on when the *test button* is held down.

CHECK LED (Air Cleaners with W8600E)

The CHECK LED is on the W8600E. It lights to indicate the following problems: excessive dirt loading (beyond that required to activate the WASH LED), partial shorting of the collector, continuous ionizer or collector arcing, power-supply failure, excessive ionizer current, or any condition causing a major reduction in high voltage.

POWER BOX

⚠ WARNING

ELECTRIC SHOCK HAZARD. CAN CAUSE PERSONAL INJURY.

Always turn off power and remove access door before removing power supply or its cover.

The solid state power supply within the power supply box can be replaced. When troubleshooting indicates a power *supply* or solid state performance indicator problem replace the entire power box or replace the power supply within the box. See Installation Instructions form 69-0776. See Fig. 21 for power box removal.

TROUBLESHOOTING PROCEDURE

The electronic air cleaner troubleshooting charts show how to quickly isolate a problem in the air cleaner. Although a meter is needed for some steps, the primary diagnostic tools are the neon light test button.

OPERATION

Large particles (lint, hair) are caught by the prefilter. As the dirty air passes through the intense high voltage electric field surrounding the ionizer wires, all particles are given an electrical charge. The air then moves through the collector part of the cell where alternate parallel plates are charged positively and negatively, creating a uniform electrostatic field. The charged particles are attracted to and collect on the plates having the opposite electrical charge. The air leaving the air cleaner has fewer particles. Each time the air circulates through the F50F, more particles are removed.

CHECKOUT

INSPECT THE INSTALLATION

Make sure:

- Turning vanes and transitions, as needed, are properly installed.
- Sheet metal joints between air cleaner and furnace are sealed.
- All sheet metal connections are complete.
- Original furnace filter has been removed and the blower compartment cleaned.
- If an atomizing humidifier is installed upstream from the air cleaner, a disposable furnace filter is installed between the humidifier and the air cleaner.
- Outside air, if used, is mixed with return air or heated, as necessary, before it can reach the air cleaner.
- The airflow arrows on the electronic cell point downstream.
- The prefilter is on the upstream side of the cell.
- The cell handle faces outward.
- The electronic cell and prefilter are clean and dry.
- That W8600E (if included) wiring connections are properly made.

CHECK AIR CLEANER OPERATION

With all components in place, turn on the air cleaner switch and energize the system blower. Check the following points of operation:

1. The neon light next to the on-off switch is on. If a W8600E is part of the installation, also check the wall panel and make sure the ON LED is lit. The W8600E CHECK LED will come on if there is a problem with the high voltage power supply.
2. Turn off the system blower. The neon light should go off after a few seconds. The neon light shows that the air cleaner is energized and the high voltage power supply is working properly.
3. Turn on the system blower. With the air cleaner energized, push the test button. A snapping sound indicates that the collector voltage is present on the cell. The W8600E CHECK LED will come on when the test button is held down.
4. With a multispeed blower, repeat steps 1-3 for each fan speed.
5. If operation is not as described, refer to the Troubleshooting section.

REPLACING IONIZER WIRES

Broken or bent ionizer wires can cause an electrical short to ground, often resulting in visible arcing or sparking. Do not use cell(s) until broken wires are removed. Cells can be used temporarily with one wire missing, but replace the wire as soon as possible.

Replacement wires are supplied cut to length with eyelets on both ends 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. See Fig. 1. 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.
3. Check the cell for short circuits 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. See Fig. 2.

FIG. 1—Washing cell(s) in container.

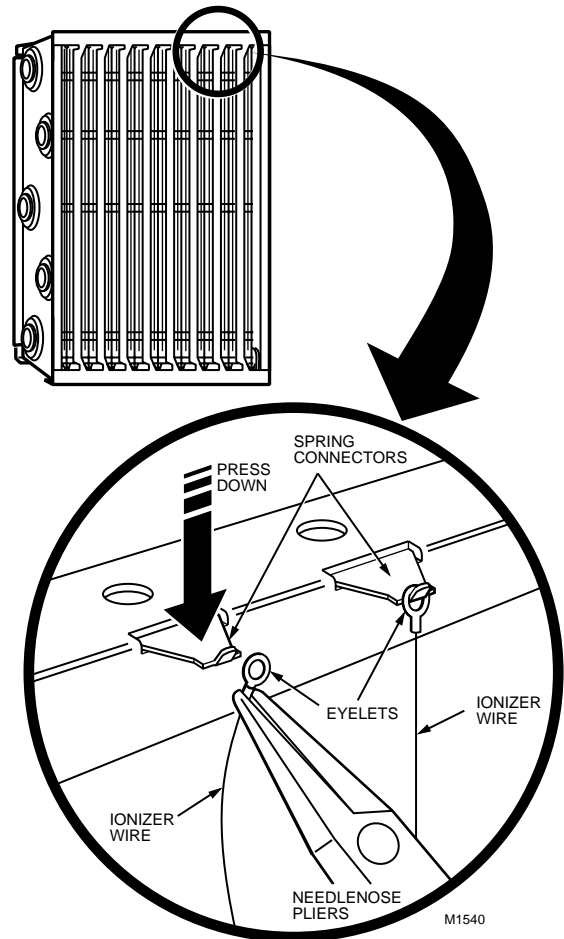


FIG. 2—Use ohmmeter to check electronic cells for short circuits.

