

Honeywell

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**INSTALLATION AND
SERVICE HANDBOOK**

**Y492
RESIDENTIAL
ELECTRONIC
AIR CLEANER**

Marker Bros.



**For the
Installer-Electrician
and Serviceman**

To the Installer and Serviceman...

The purpose of this handbook is to provide an illustrated, step-by-step guide to the installation and servicing of the Y492 Electronic Air Cleaner.

Each of the wiring diagrams shown will satisfy most applicable regulations. However, we strongly advise the user to check all applicable requirements before following the wiring diagrams shown herein.



Minneapolis-Honeywell Regulator Company

MINNEAPOLIS 8, MINNESOTA • TORONTO 17, ONTARIO

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F37 INSTALLATION

There are practically no limitations to the location and position in which the air cleaner can be installed. Two points must be considered, however, when planning the installation.

1. Be sure to select a location in the RETURN AIR DUCT where the air cleaner will be accessible for periodic inspection and cleaning. Basic dimensions and clearance requirements are explained in Figs. 1-3 and in the step-by-step procedure which follows. For further detail, see the instructions packed with the F37.

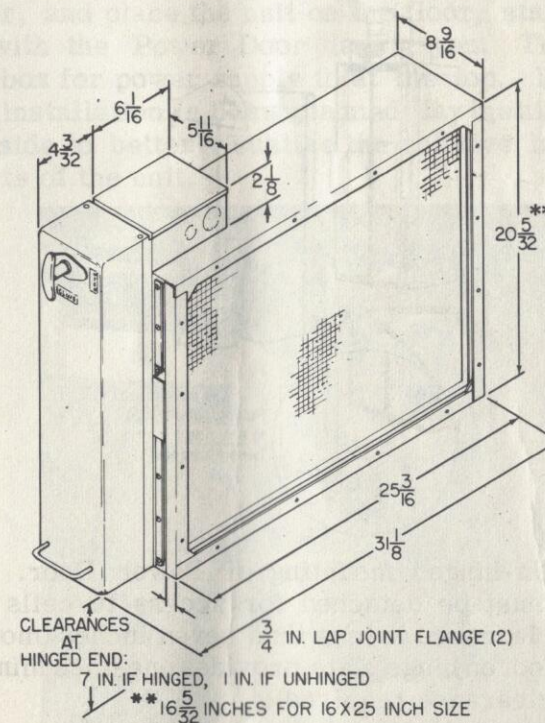


Fig. 1—Dimensions (inches) for 20 x 25-in. size and 16 x 25-in. size.

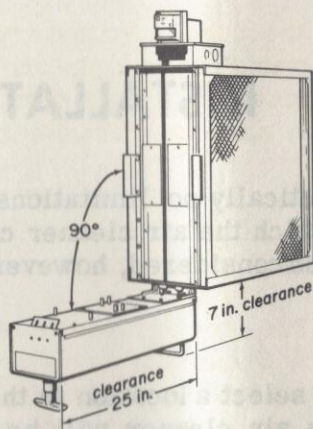


Fig. 2—Hinged mounting of Power Door. Leave hinge pin in place when clearance is 7 inches or more.

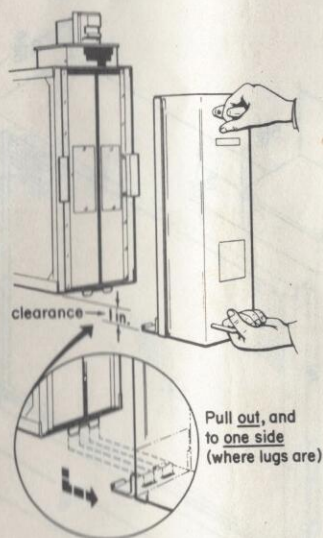


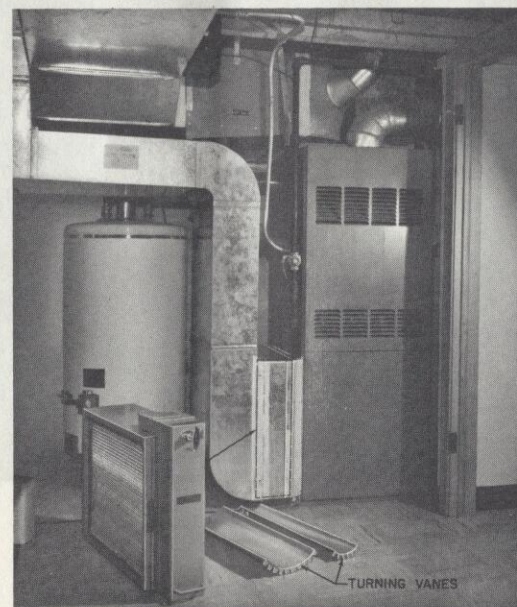
Fig. 3—Un-hinged mounting of Power Door. Door must be detached for access to cells when clearance is less than seven inches (mounting foot on hinge plate provides one-inch minimum clearance required).

2. Determine the need for transition fittings to adapt the duct size to the size of the air cleaner. Some suggested transitions and an air flow and efficiency chart are included in the instructions packed with the F37.

The following steps show an installation on an existing system with a high boy furnace. In some of the steps, procedures were necessarily patterned to the specific needs of this type of installation. Remember: the air cleaner is adaptable to any type of central forced air furnace or cooling system used in residential work—whether it be on a new or an existing installation.

STEP 1

Open the carton containing the Electronic Air Cleaner, and place the unit on the floor, standing upright with the Power Door facing you. The double outlet box for power supply is at the top. If a horizontal installation is being planned, lay the air cleaner on its side to better visualize the relative location of all parts of the unit.



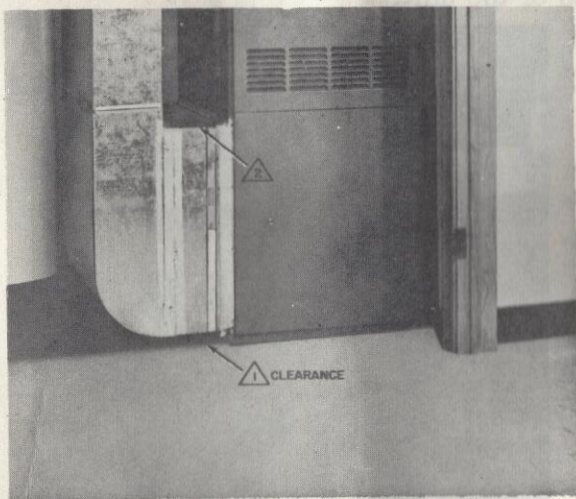
Bearing in mind the air cleaner's dimensions, clearance requirements, and accessibility, select best location for installation. Arrow points to most natural location for this installation.

Note turning vanes on floor, along side air cleaner. These were fabricated in the shop, and will be installed in 90° transition elbow that will attach to upstream side of air cleaner. See Page 3

STEP 2

When location for air cleaner installation is picked, check clearances:

Because clearance at point selected for this installation is only approximately one inch, Power Door on air cleaner is left unhinged. Twenty-five inches of clearance is needed opposite Power Door so that units in air cleaner can be removed for washing.



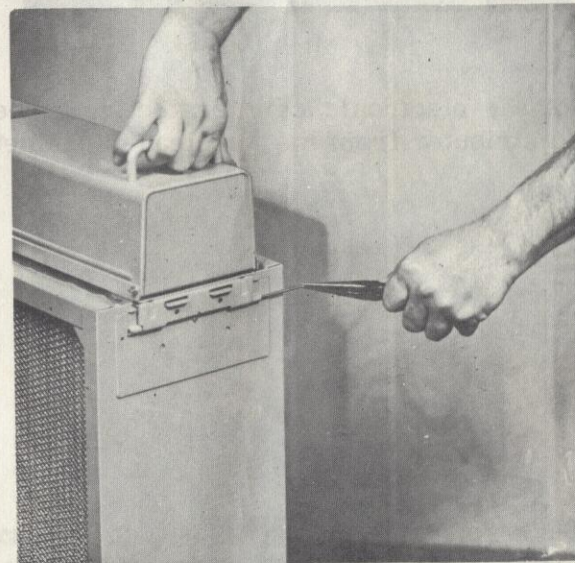
See NOTES on Page 5.

NOTES FOR STEP 2

- ⚠ If Power Door is to be permanently hinged, clearance at hinged end must be at least 7 inches.
- ⚠ Note that there is ample accessibility for wiring and servicing outlet box.

STEP 3

Stand air cleaner upright on the floor, with Power Door at the top. Remove hinge pin to Power Door as follows: if pin fits tightly, apply nail set or screwdriver against pin (opposite headed end). Drive out pin part way with hammer. Pull out pin the rest of way with pliers.



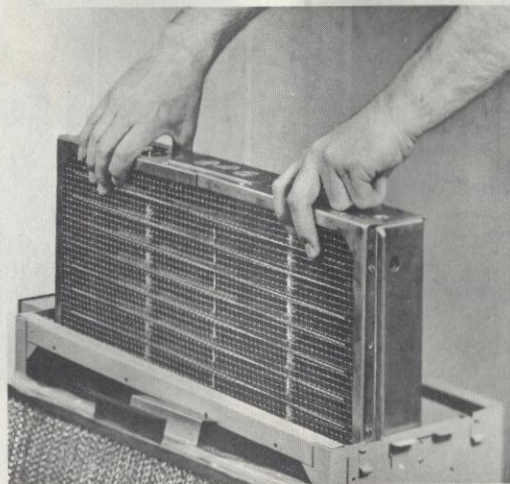
STEP 4

Using both handles on Power Door, turn rotatable handle to OPEN position, pulling out and away from the hinged end. This frees Power Door from electrical connectors at one end, and two interlocking tabs at the other end.



STEP 5

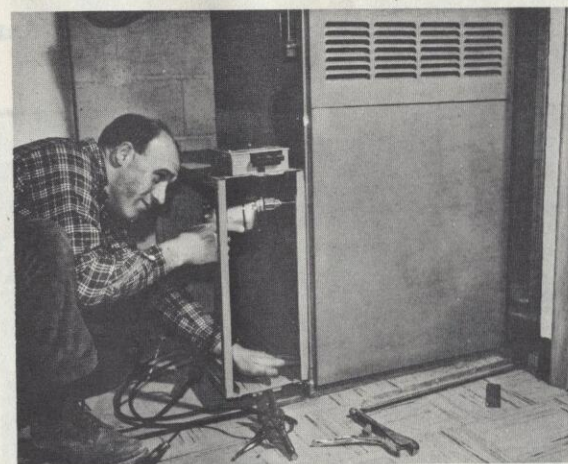
Lift out the electronic cell, protective screen and air flow distributor from the air cleaner cabinet.



STEP 6

Attach the air cleaner frame securely to the furnace inlet. It can be attached directly as shown, or a starting collar can first be fitted to the furnace inlet. A butt or slip joint can be used. Structural characteristics of the furnace and space limitations will determine which procedure to take.

Use blocks under air cleaner frame, if necessary, for rigid mounting. The blocks can also be used to assure the necessary seven-inch clearance from the hinge if a hinged mounting of the Power Door is desired (a mounting foot on the cabinet hinge plate provides the minimum one-inch clearance necessary for all installations).



STEP 7

Because this installation uses an abrupt 90° transition elbow, attached directly to the air cleaner frame, two turning vanes are installed in fitting to help dis-

tribute air equally over the full surface of the upstream side of the air cleaner.



STEP 8

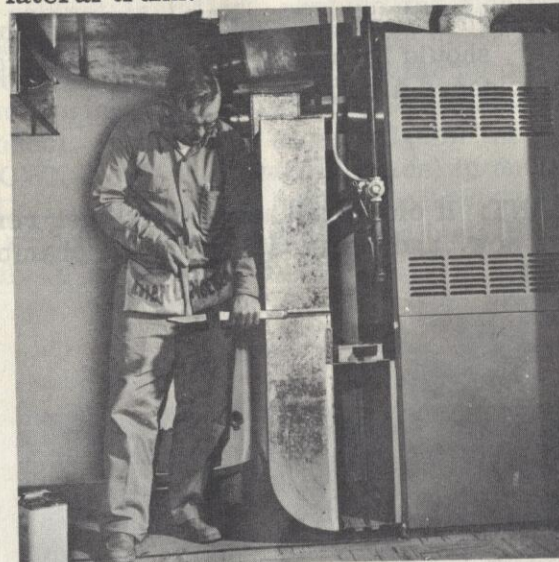
Attach elbow to upstream side of air cleaner frame. Butt or lap joint can be used.



STEP 9

Connect the vertical duct section to the elbow. If the vertical drop of the duct was less than eight inches away from the side of the furnace, shorten the lateral

trunk or attach an offset fitting to the elbow. When proper alignment has been made, connect vertical duct to lateral trunk.



STEP 10

If blocks are not already installed to support air cleaner frame, wedge in a wood block to support elbow and vertical duct.



STEP 11

All joints in return air system, downstream from air cleaner, should be sealed to prevent dust from entering the cleaned airstream.

IMPORTANT: If old filter has not yet been removed, remove it now, and clean dirt from fan chamber and return duct.



STEP 12

With cabinet installed, replace the electronic cell removed in STEP 5. (1) Insert the electronic cell in the cabinet, with electric contacts facing out (so they meet the spring-loaded contacts of Power Door when it is closed). The arrow on the edge of the cell must point **DOWNSTREAM** (toward furnace) in duct system. (2) If Collector Cell is added, follow instructions packed with the Collector Cell, and install Seal Plate assembly (if necessary).



STEP 13

Remove self-stick label (with printed blue and gold arrows) attached on inside of Power Door—see inset. Follow attached instructions for the proper placement of the arrows on air cleaner for indicating air flow direction.

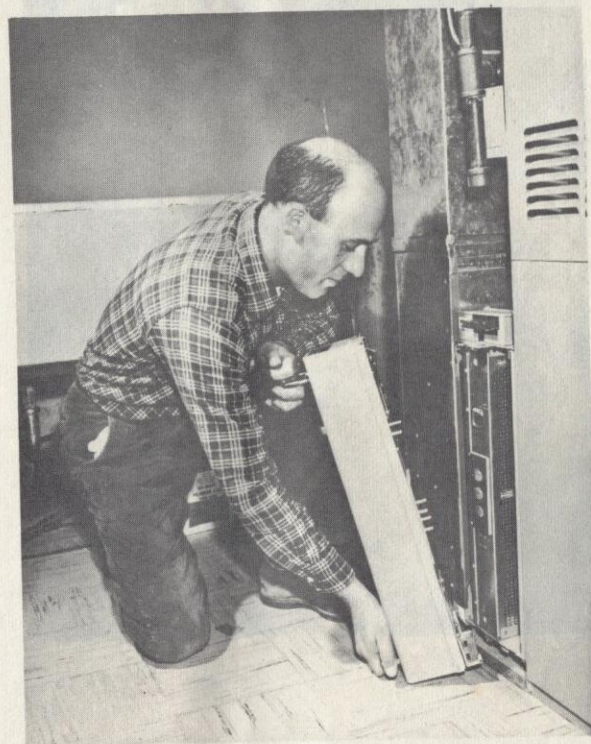
In this application, Power Door will be mounted unhinged, because clearance between cabinet and floor is only 1 or 2 inches. If clearance is 7 inches or more plan to replace hinge pin (removed in STEP 3).



STEP 14

Replace Power Door. Place slots at hinged end directly under the two lugs which extend beneath the air cleaner cabinet. The slots on the end of the Power Door must fit onto the lugs. Rotate top handle to OPEN position, push upward and inward to mount Power Door on cabinet. Rotate top handle to CLOSED position.

NOTE: If clearance is great enough, replace pin in the hinge of the Power Door.



STEP 15

With Power Door closed, slide protective screen (blue handle) into guide at UPSTREAM side of cabinet. Insert air flow distributor (gold handle) into guide at DOWNSTREAM side of cabinet. Polyethylene seals on edge of protective screen and air flow distributor should overlap on Power Door to provide a tight seal.



STEP 16

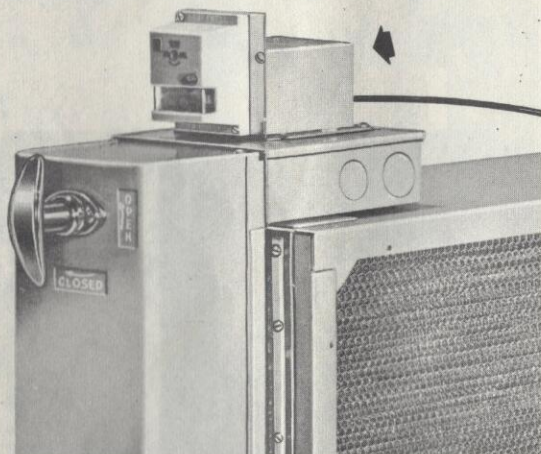
With the sheetmetal installation completed, check over the job to see that all steps have been covered. If the homeowner is present, explain the operating and servicing characteristics with which he should be familiar. If the Power Door hinge pin was not replaced be sure to tell the homeowner that he must grasp both handles when opening and removing the door. Also explain the correct position of components in the cabinet, use of the arrow stickers in determining the correct position, and replacing the door.



AT72F-S830A INSTALLATION

The AT72F Transformer and the S830A Filter-Flag* indicator mount on a 4-inch square outlet box.

If the air cleaner is installed vertically or horizontally with at least 3 1/4 inches clearance from the latch end of the cabinet, mount the AT72 and S830 directly on the air cleaner junction box. A vertical installation is shown below.



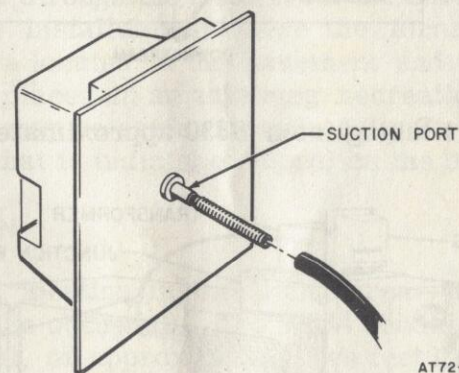
If the air cleaner is installed on an angle, or if there is not enough clearance, mount the AT72 and S830 remotely on a standard 4-inch square outlet box. The box must be sufficiently close to the furnace or air cleaner so that the length of tubing (packed with the AT72) will reach from the S830 to some point between the downstream side of the air cleaner and the fan.

THE FILTER-FLAG INDICATOR MUST ALWAYS BE MOUNTED LEVEL, IN AN UPRIGHT POSITION. The red metal warning flag is hinged and set to operate by gravity when actuated—the device must always be mounted upright, with clear plastic window at bottom.

If the outlet box (either on the air cleaner or at a remote location) is mounted horizontally, attach the S830 adaptor plate to the open end of the transformer housing with the two screws provided. The adaptor plate is not used if the outlet box is mounted vertically.

CONNECT TUBING

1. A tightly coiled wire support extends several inches from the 1/4-inch suction port, in the back of the S830. Place end of tubing over coiled wire support and attach tubing to suction port.



2. Run tubing through housing of AT72 and out proper hole in opposite end of housing.

WIRING

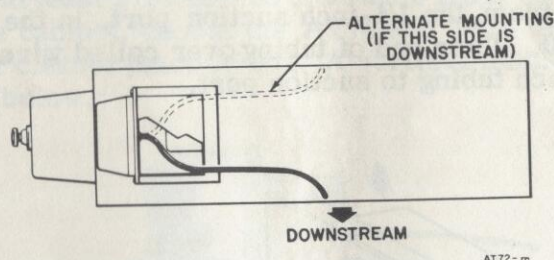
1. Attach the two black wires from the AT72 to the two terminals on the S830.

2. Connect the white wire from the AT72 to the white wire in the air cleaner junction box.

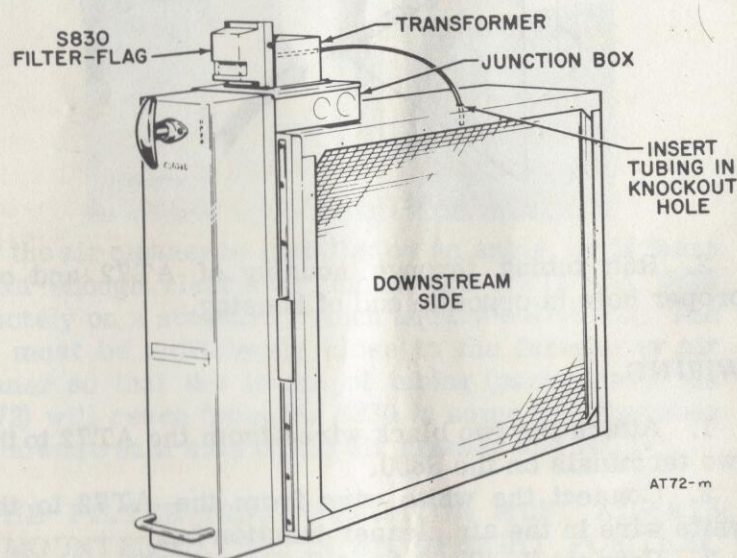
3. Connect the blue wire from the AT72 to the blue wire from the W634 Control Center (see WIRING ASSEMBLY, Page 57).

MOUNTING

1. Use two screws, provided, to attach S830 to AT72.
2. Secure S830-AT72 assembly to outlet box.
3. Knockouts are provided on both edges of air cleaner frame for insertion of 1/4-inch tubing into air system. Either remove 1/4-inch knockout on downstream side of air cleaner frame (see below), or punch 1/4-inch hole in return at some point between air-cleaner and fan.



4. Insert tubing from S830 approximately 2 inches into hole.



5. Calibrate the S830 as directed in the service section, Page 48.

W634 INSTALLATION

Standard switch box installation procedures are used to install the W634. The step-by-step procedure which starts on Page 22 shows an installation on a finished dry wall. Variations in roughing-in in new construction or in a plaster wall are illustrated on Pages 20 and 21.

To avoid problems, consider each step of the installation before preceeding. Particular situations in each job call for variations from the steps as they are shown. For example, where the central forced air system and air cleaner are installed on the same floor as the living area, in a utility room, or in the attic, wiring to the Control Center may be run overhead instead of up through the floor from the basement.

Also, in installations where the furnace and air cleaner are located in the basement and the Control Center is placed in an adjoining recreation room or hallway it may be easiest to mount the Control Center on a wall that is unfinished (open) on the back side.

LOCATION

Select a location in the living area—preferably a choice of the occupants. The W634 should be mounted at eye level, or approximately five feet high, and can be placed next to the thermostat if desired. When installing in a finished wall, avoid concealed wires, ducts, pipes, beams or studding. Locate at some point between studs.

IF FAN SWITCH IS NOT USED

Where central cooling is included in the system, the heating-cooling thermostat generally also includes a fan switch.

If the fan switch at the thermostat is used, remove the fan switch from the Control Center as follows:

- a. Pull off push-buttons and unfasten two screws holding switch to plate. Lift out switch.

b. Close switch opening with small metal cover plate and two screws (included). Hold cover plate in back of Control Center, insert screws from front.

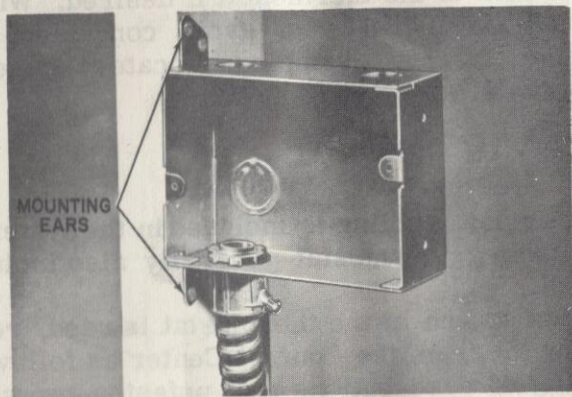
c. Remove aluminum trim from plastic face plate (snaps out). Then remove backing from printed tab ("THERMOSTAT SWITCH CONTROLS") and stick tab to indented area on face plate. Do not replace face plate and trim until installation is finished.

ROUGHING-IN ON NEW CONSTRUCTION

When installing in new construction, determine what the thickness of the plaster or wallboard is to be at the selected location. The open edge of the switch box should project from the studding so that it will be flush with the finished wall surface. It must never extend out from the finished surface. The box may be recessed up to 1/8 inch.

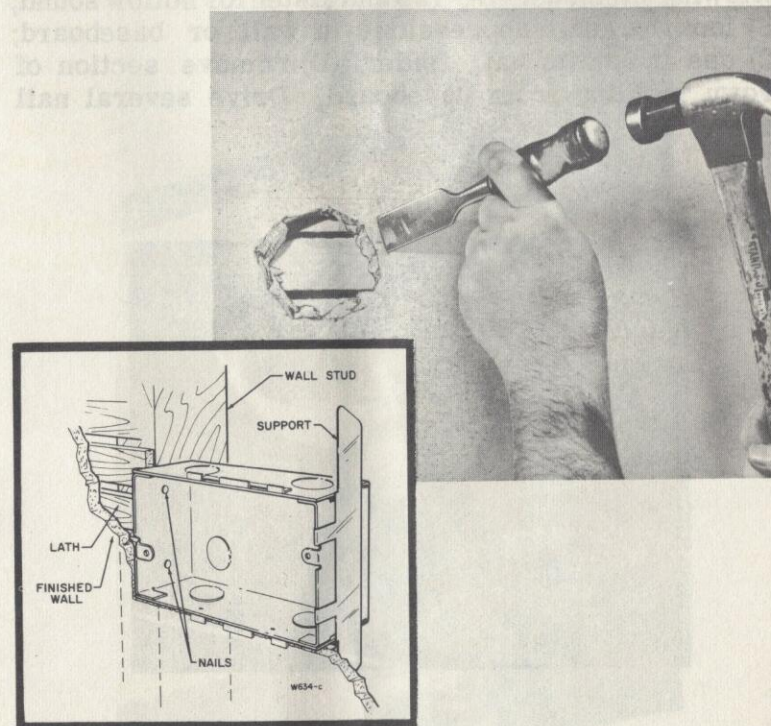
Nail or screw the mounting ears to a stud after proper position of the box is determined. Connect conduit from the air cleaner to the rough-in box and run wiring to the box. See WIRING, Page 55.

Store the Control Center mechanism and cover plate until the wall is finished and the wiring is ready to be completed (STEPS 11-13).



ROUGHING-IN ON PLASTER WALL

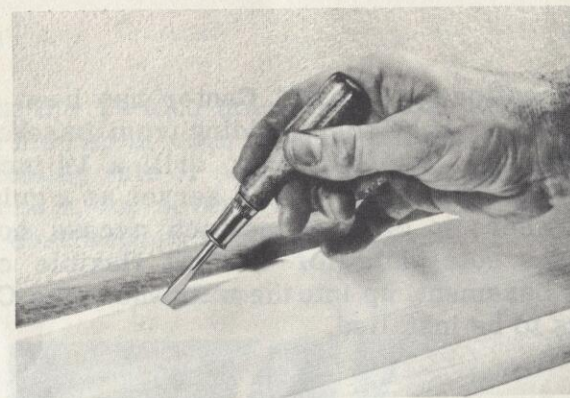
After completing STEPS 1-4 that follow, chip the plaster near the center of the marked location and find one full lath. Place the rough-in box on the wall where it is to be mounted so that the full lath will be at the center of the opening. Check with a level, then draw a light line around the box, adding 1/8 inch to one side to provide clearance for the box supports. NOTE: For more rigid installation, plan the opening so that one side is next to a wall stud. The box can then be nailed to the stud (see inset). The other side of the box is then secured with a box support.



Carefully chip out the plaster inside the area marked for box installation, keeping close to the scribed line. Saw on all four sides of the opening. Do not chisel or break out lath; avoid breaking the edges of the opening, and keep the base of the opening level. Break off the mounting ears on the rough-in box with pliers and proceed with STEP 7.

STEP 1

Locate the wall studs, using one or more of the following methods: (A) rap and listen for hollow sound; (B) look for nail depressions in wall or baseboard; (C) use magnetic nail finder; (D) remove section of crown molding from baseboard. Drive several nail holes.



STEP 2

When location for Control Center has been determined, remove base shoe molding from baseboard at point selected. At a 45° angle, drill a 1/4 inch hole through to the basement. This serves as a guide for locating where to drill a one-inch access hole, up through the sole plate (for running flexible conduit from the basement, up into the wall where the Control Center is to be installed.



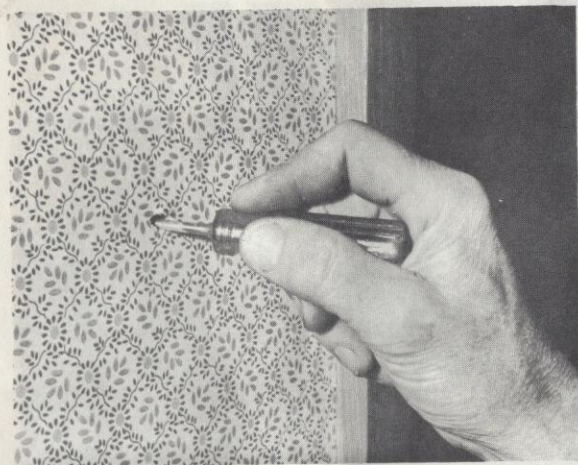
STEP 3

Using the 1/4 inch hole as a guide, drill a 1 inch access hole up through the sole plate of the wall. Using a folding rule or stiff wire, probe up through the access hole, for several feet to make sure that there are no obstructions within the wall.

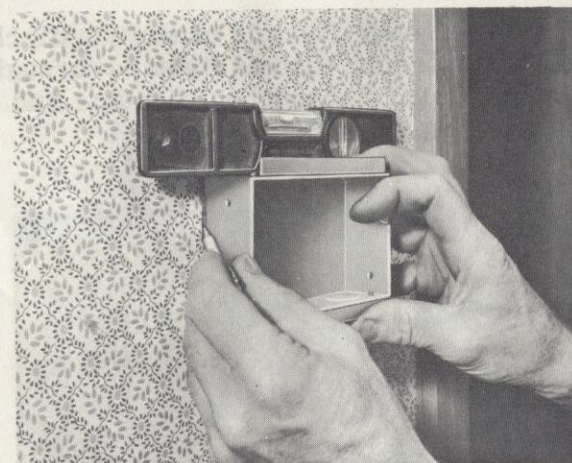


STEP 4

At the point where the Control Center is to be mounted, punch a small hole with a screwdriver. Probe the small starting hole with the screwdriver to determine if there is anything to obstruct wiring or mounting of the rough-in box.

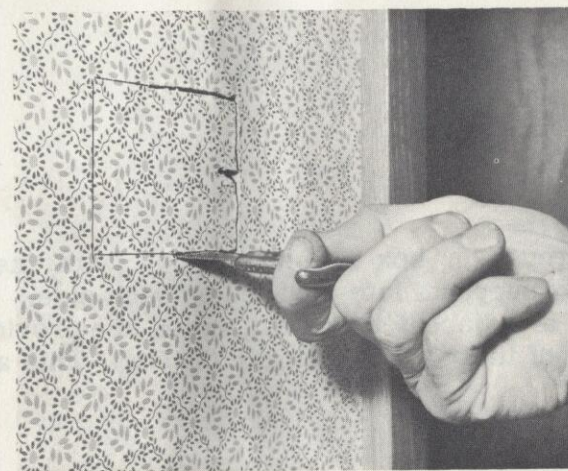


next to a stud so that one side can be nailed to the stud. The other side can be secured with a box support.



STEP 6

Cut to the scribed line as shown, using a keyhole saw or hacksaw blade.



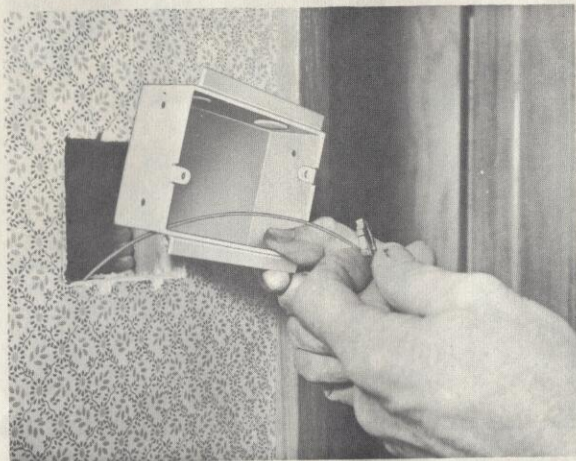
STEP 5

Attach mounting flanges (included) to top and bottom of rough-in box and break off mounting ears, on side of box, with pliers.

Level the box on the wall at the location chosen. Scribe a light line around the box, allowing an extra $\frac{1}{8}$ inch on one side to provide clearance for box supports. For an extra solid mounting, cut the opening

STEP 7

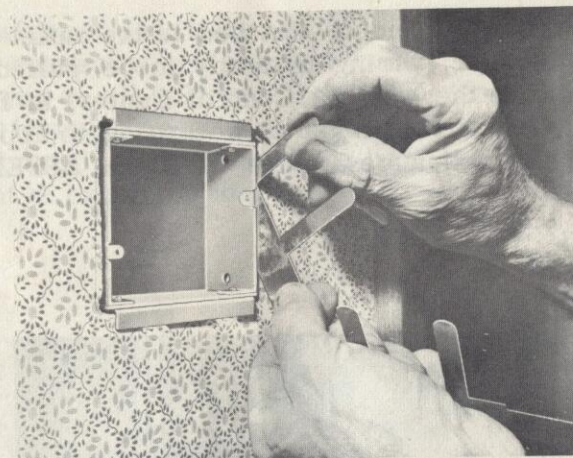
Run fishtape through flexible conduit. Attach connector to end of conduit. Extend fishtape through conduit opening. String locknut on fishtape and place rough-in box in wall opening.



STEP 8

With rough-in box recessed flush with the wall, place box supports into position on each side. If wall opening is adjacent to a stud, holes are provided on one side of the box for nailing to the stud. This affords

a more rigid mounting. Secure box at opposite side by a box support.



STEP 9

Press switch box firmly into the wall opening, while bending box support tabs tightly to hold box rigidly in position. Insert a box support at each side, (unless alternate mounting suggested in STEP 8 is used).



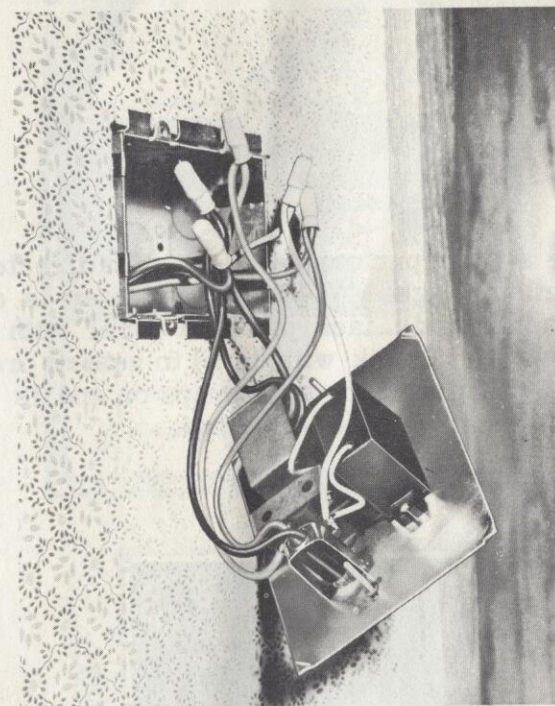
STEP 10

With thinwall conduit attached to the outlet box on the air cleaner, wiring is ready to be pulled. Run wiring inside the wall (to Control Center) in flexible conduit. All wiring must be according to applicable codes and ordinances. See **WIRING ASSEMBLY**, Page 57.



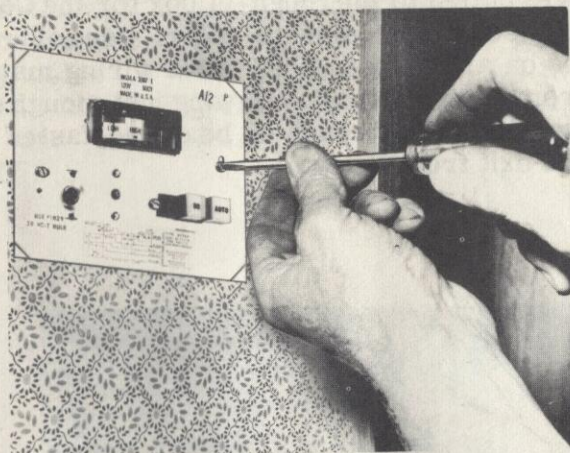
STEP 11

With wires pulled to the rough-in box for the **Control Center**, connect wires color-to-color. Use solderless connectors on all splices. Pull extra wiring material back out from inside the wall, allowing just enough slack to avoid tension on the rough-in box, and fasten near the point of exit from the wall.



STEP 12

Attach the Control Center panel to the rough-in box with two screws provided.



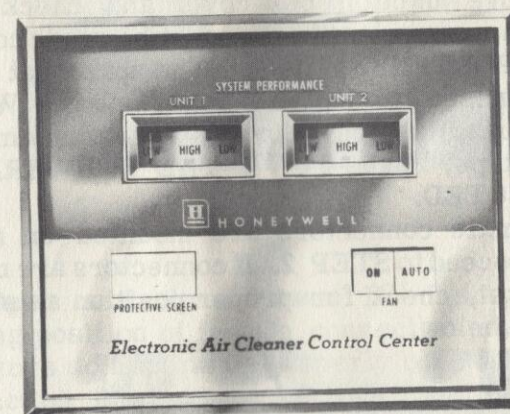
STEP 13

Calibrate system performance meter as directed in service section, Pages 47-48. When meter is calibrated, attach plastic face plate to panel with two screws provided. Check with level to assure proper alignment. The aluminum trim snaps on and is held in place by a tension clip at each end.



W634B CONTROL CENTER

The W634B Control Center is used with two F37 air cleaners in a single heating and/or cooling system. Each of the two meters in the W634B is calibrated in the same manner as the single meter in the W634A. A connection diagram for the W634B appears on Page 58. In all other respects, the W634B is installed the same as the W634A.



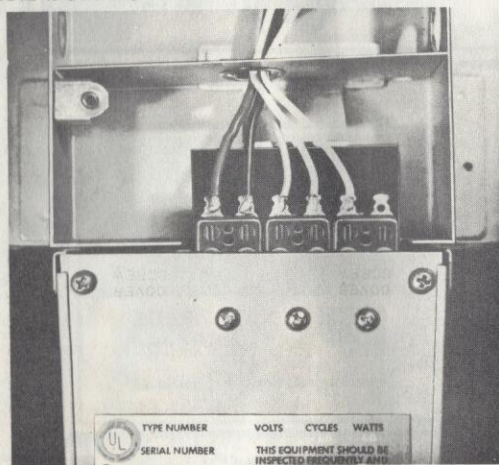
Y492 SERVICE

The following steps provide a detailed service guide for the Y492 Residential Electronic Air Cleaner. A condensed summary of these steps appears on a detachable flap on the back cover. Make a thorough check of all field wiring before proceeding.

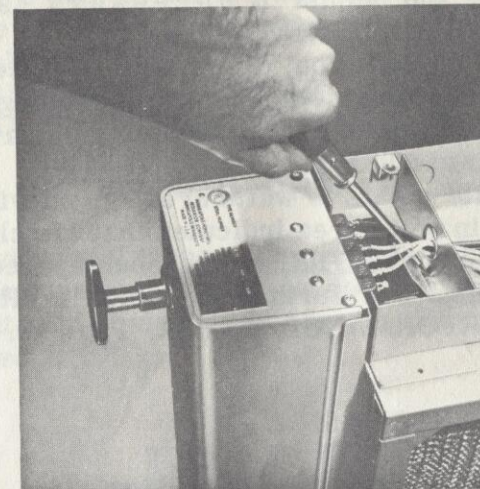
STEP 1 CHECK CONNECTORS AND WIRING

With system fan off, open and close Power Door. If fan operates, proceed to STEP 2. If fan does not operate, proceed as follows:

- a. Disconnect power.
- b. Remove junction box cover and check wiring connections—connections must be made color-to-color. **IMPORTANT:** Check to be sure that the red wire is connected to the fan circuit (and the W634 fan switch, if used) as shown in the wiring assembly and wiring hookups, Pages 57-77. **THE RED WIRE MUST BE CONNECTED.**
- c. If female connectors are mounted on straight bracket, proceed to STEP 2. If connectors are mounted on Z bracket, check for proper position as shown in illustration below.



- d. If shallow depressions on connectors are not in line with leading edge of Power Door cover, use screwdriver to move connectors into proper position.



- e. Open and close Power Door several times, checking position of female connectors each time. If connectors do not line up properly each time, replace the junction box and connectors (see PARTS LIST, Page 78).

- f. Put the junction box cover back on and connect power.

STEP 2 CHECK W634 CALIBRATION

Make sure that the potentiometer setting on the W634 Control Center has been properly adjusted. **NOTE: THIS ADJUSTMENT MUST BE MADE ONLY WHEN THE CELL IS CLEAN AND DRY (see W634 CALIBRATION, Page 47.**

STEP 3 CHECK LIGHT AND METER

a. If Protective Screen light is on, remove and clean Protective Screen (blue handle). Reset S830 Filter-Flag, and adjust if necessary (see S830 SETTING AND ADJUSTING, Page 48).

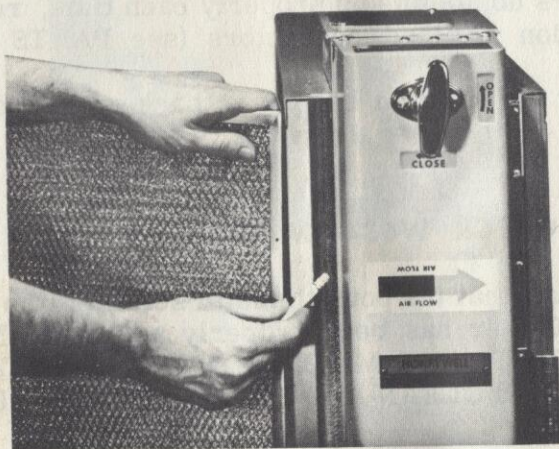
b. Turn system fan on, off, on again—meter needle must drop to zero point and return to reading.

c. If needle points to red area or fluctuates continuously, go to STEP 5.

d. If needle points to white area, go on with STEP 4. Reading in white area indicates that air cleaner is operating properly—STEP 4 is a double check. (All meter readings are further explained in READING SYSTEM PERFORMANCE METER, Page 49.)

STEP 4 CHECK CELLS

Turn on fan. Remove Protective Screen and pound vigorously on return ductwork or blow cigarette ashes or dust in through opening to make air cleaner arc. Arcing (snapping or cracking sound) indicates that unit is operating properly.



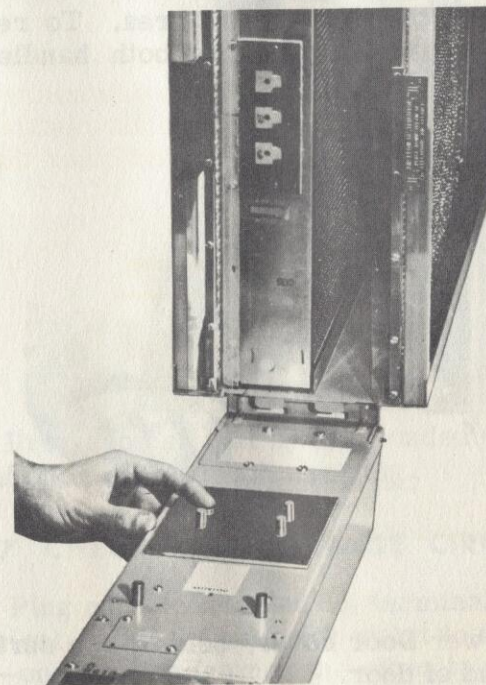
NOTE: If air cleaner has optional extra collector section (on downstream side of air cleaner cabinet) remove it and use above procedure to make electronic cell arc. Then remove electronic cell and return optional collector to cabinet. The optional collector should arc without blowing dust into it. This is normal when the collector is operating without the electronic cell in place.

BE SURE TO RESET TIMER EACH TIME DOOR IS OPENED. See RESETTIMING TIMER, Page 52.

STEP 5 INSPECT COMPONENTS

Open door and inspect components carefully.

a. Be sure that spring-loaded contact buttons are all about same height and under tension (push each one in to check).



b. Optional collector cell (if any) must be on downstream side of cabinet. Air flow arrows (stamped on edge of cells) must be pointing downstream, and electric contacts on cells must be facing Power Door.

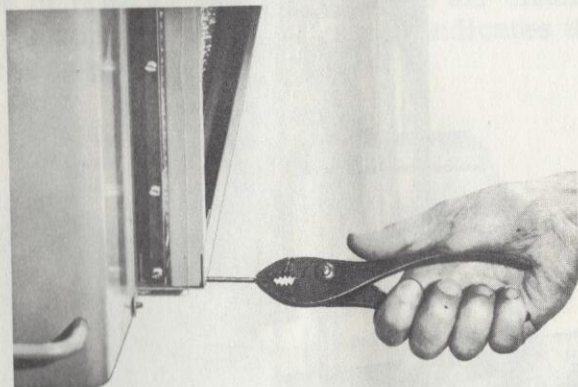
c. Be sure that cell(s) is clean, dry and free of foreign objects.

Look for broken ionizing wires or bent collecting plates.

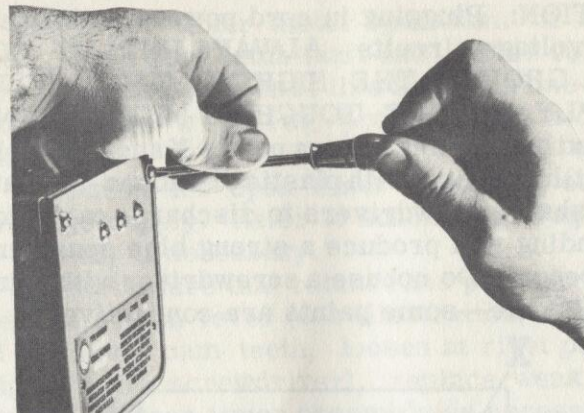
Service or replace components as necessary. See **REPLACING BROKEN IONIZING WIRES**, Page 53, for cell repairs. Refer to Homeowner Manual for washing, drying, and positioning instructions.

STEP 6 PREPARE TO TROUBLESHOOT

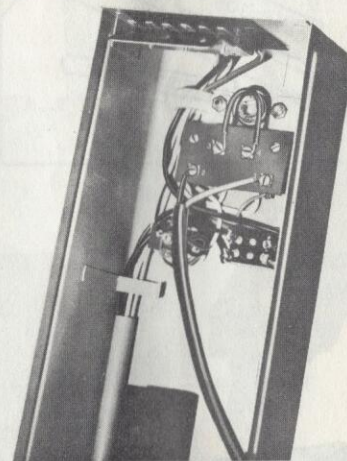
NOTE: Troubleshooting may be done at the air cleaner if there is adequate room to work. Generally it is easier to remove the Power Door and take it to a work bench or other convenient area. To remove, pull hinge pin, open door (holding both handles) and unhook end opposite latch.



a. Open Power Door cover, held by two screws at latch handle end of door.



b. Connect two-wire, plug-in line-voltage cord at terminals 1 and 2 on small terminal board inside cover, and jumper terminals 3 and 4 with a short (1 to 1-1/2 inch) insulated wire.



c. Prop door so that spring-loaded contacts on inside of door do not touch anything.

STEP 7 CHECK LINE-VOLTAGE CIRCUITS

a. Plug cord (connected to terminals 1 and 2) into electrical outlet. Check for short to frame with test light—one lead on frame, the other to ground. Lamp lights if there is a short to the cabinet.

CAUTION: Plugging in cord powers both line and high-voltage circuits. **ALWAYS UNPLUG CORD AND GROUND THE HIGH-VOLTAGE POWER SUPPLY BEFORE TOUCHING COMPONENTS.** Ground by shorting across points X and Y (See Fig. 4 and illustration) with plastic or rubber-insulated, long-shank screwdrivers to discharge capacitors. Grounding will produce a strong blue spark and a loud report. Do not use a screwdriver with painted wood handle—some paints are conductive.

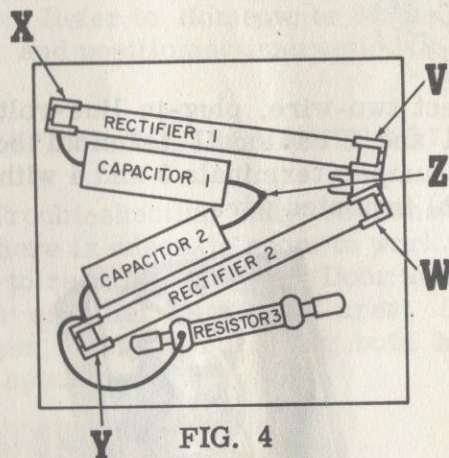
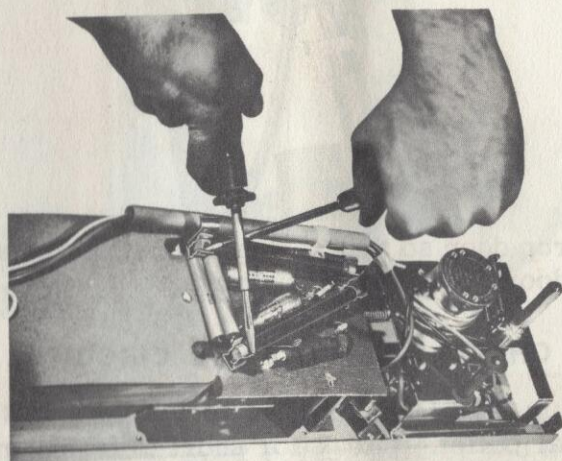


FIG. 4

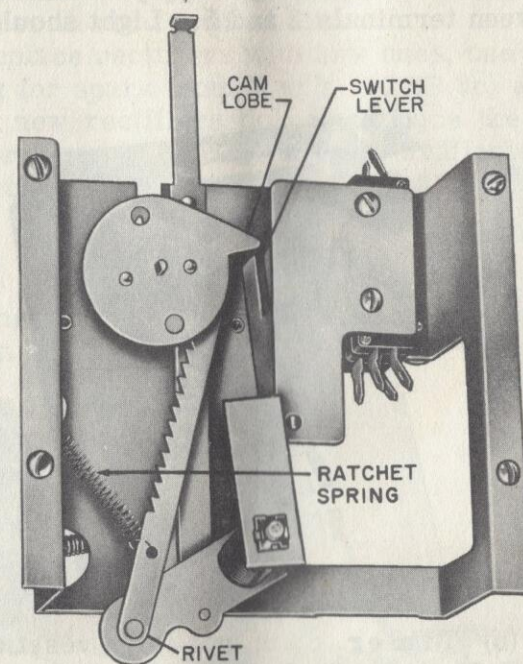


b. Listen for timer motor operation. If it is not operating, turn door latch shaft until motor comes on.

If timer motor operates at this time, the line-voltage components are working properly. If it does not operate:

1. Check for open timer switch(es) or faulty line-voltage supply. Refer to schematic, Page 56, to trace circuit, if necessary.

2. Make sure that ratchet has pushed cam lobe past end of switch lever (see illustration). If ratchet is not engaging cam teeth, loosen at rivet point (pry up slightly with screwdriver), replace weak ratchet spring, or replace timer assembly as necessary (see PARTS LIST, Page 78).



STEP 8 CHECK HIGH-VOLTAGE POWER SUPPLY

a. Reset timer switches as directed on Page 52 (Power Door Cover Open).

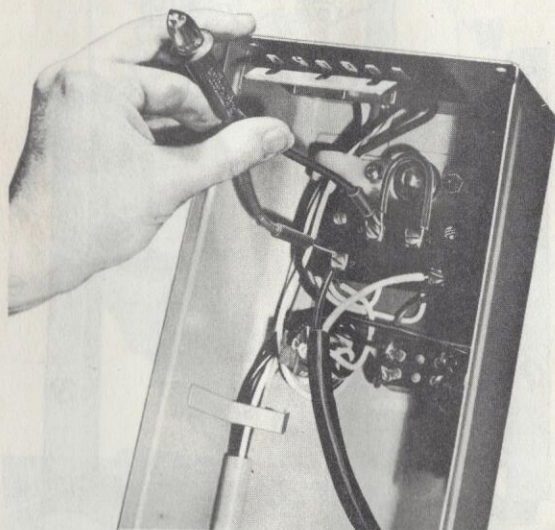
b. Check for spark across secondary terminals on

high-voltage transformer.

CHECKING FOR SPARK

When drawing a spark to check components, use two screwdrivers as shown in STEP 7. Touch a screwdriver to one of the points, then slowly extend the other screwdriver to the second point (screwdrivers crossed and touching). The spark should occur before the screwdriver touches the second point.

1. Moderate, yellow spark indicates transformer is operating properly.
2. No spark indicates:
 - (a) No line-voltage supply. Check with test light between terminals 2 and 3. Light should glow.



(b) Timer cam not fully reset or timer switch is defective. Recheck cam or jumper all terminals on timer switch.

(c) Defect in high-voltage transformer or transformer capacitor. Remove transformer cover and jumper capacitor terminals. Check for spark

across transformer secondary. Spark indicates defective capacitor. No spark indicates defective transformer.

Replace defective part(s) as necessary.

c. Refer to CAUTION, STEP 7 (see Fig. 4 and illustration). Check for spark across points X and Y.

1. Strong blue spark and loud report indicate power supply is operating properly. Proceed to STEP 11.

2. Weak spark or no spark indicates malfunction in rectifier-capacitor circuit. Proceed to STEP 9.

STEP 9 CHECK RECTIFIERS

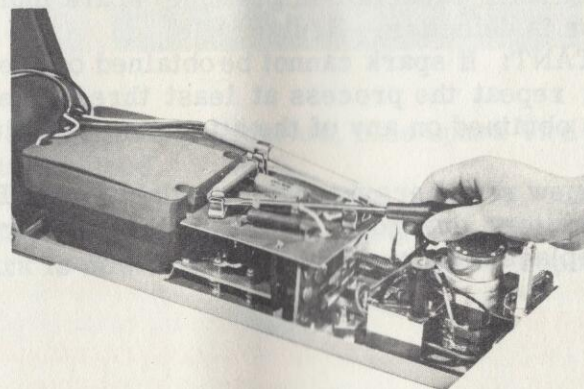
a. Rectifiers must be in proper position—red end of rectifier in red terminal clip.

b. Replace rectifiers with new ones, one at a time, checking for spark from X to Y (STEP 8c) each time.

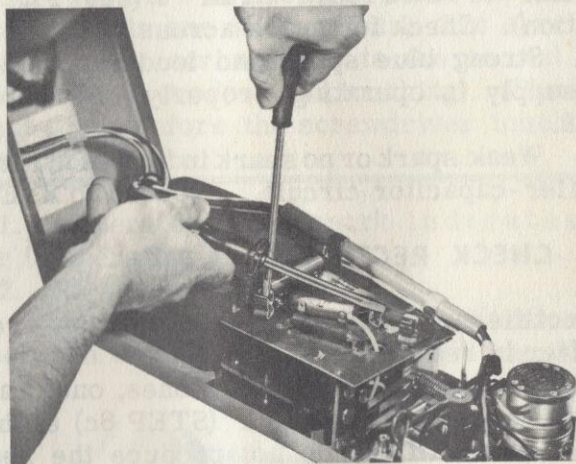
c. If new rectifiers do not produce the required spark (or if new rectifiers are not available) remove both rectifiers and proceed to STEP 10.

STEP 10 CHECK CAPACITORS

a. Short across points X to V to charge Capacitor 1 (see Fig. 4).



- b. Check for small spark between points X and Z.



1. Spark indicates Capacitor 1 is good.
2. No spark indicates capacitor is defective.

Replace.

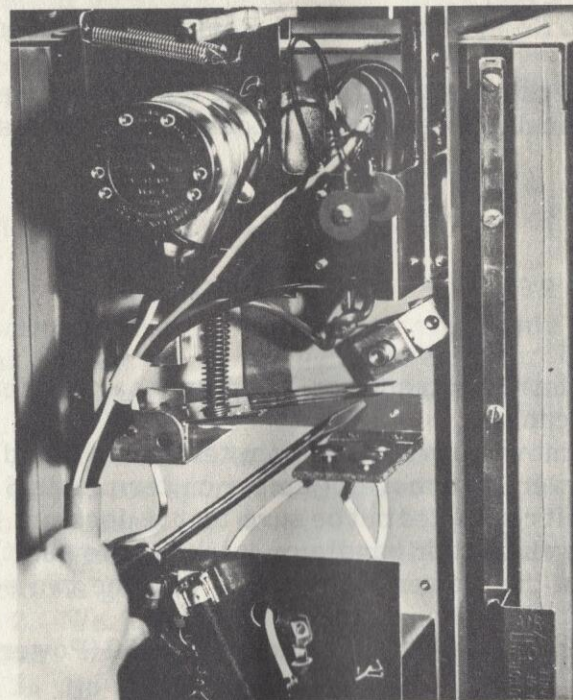
- c. Short across points W to Y to charge Capacitor 2.
- d. Check for small spark between points Y and Z, which indicates capacitor is good. No spark indicates capacitor is defective. Replace.

IMPORTANT: If spark cannot be obtained on the first attempt, repeat the process at least three times. If spark is obtained on any of the attempts, capacitor is good.

- e. If new rectifiers were not available for STEP 9 and capacitors are good, one or both rectifiers are bad. Replace as necessary.

STEP 11 CHECK RESISTOR 3

Refer to illustration below. Check for spark from ionizer contact (point I on schematic) to bare metal on door.



- a. Intermittent, moderate, blue spark indicates resistor is good.

- b. No spark indicates open resistor. Check by shorting resistor while repeating the above process. If spark is now drawn, resistor is open, replace.

STEP 12 CHECK RESISTORS 1 AND 2

a. Check for spark from collector contact (C1 on schematic and wiring assembly) to bare metal on door.

1. Weak, steady, hissing spark indicates resistor is good.

2. No spark indicates Resistor 1 is open, replace.

b. Check for spark from point C2 to bare metal on door (checking Resistor 2). Look for above results.

STEP 13 REPLACE POWER DOOR

a. Return electronic cell and optional collector (if used) to cabinet.

b. Remove power cord from terminals 1 and 2 and close Power Door cover (jumper on terminals 3 and 4 may be left connected but be sure that it does not interfere with the latch handle or latch handle shaft). Do not fasten the Power Door cover with the two screws at this time.

c. Reset timer as directed on Page 52 (Power Door Cover Closed).

STEP 14 CHECK IONIZER SECTION

Check for short in ionizer section. Close Power Door—all components must be in operating position for this check.

a. Open Power Door cover (pull straight out on handle without turning).

b. Reconnect power cord to terminals 1 and 2 and plug in.

c. Refer to STEP 11. Check for spark from point I to bare metal on door.

1. Moderate, intermittent spark indicates ionizer is good.

2. If no spark is obtained, there may be a short to ground in the ionizer section of the electronic cell. Inspect and repair or replace as necessary (see REPLACING BROKEN IONIZING WIRES, Page 53).

STEP 15 CHECK COLLECTOR SECTION

Check collector section of electronic cell (and optional collector, if used). Close Power Door—all components must be in operating position for this check.

a. Follow STEP 14a and b, above.

b. Check for spark from collector terminal, point C1, to bare metal on door.

1. Moderate, intermittent blue spark indicates collector is good.

2. Weak, steady hissing spark indicates open collector, or no collector on this side of air cleaner.

3. No spark indicates shorted collector.

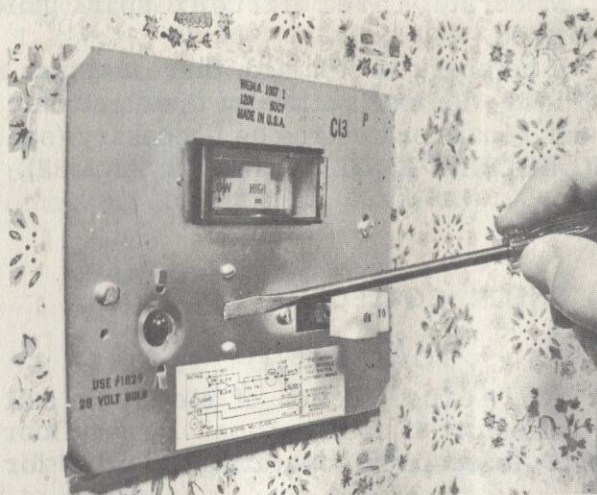
c. Repeat checks at point C2.

W634 CALIBRATION

IMPORTANT: Electronic cell(s) must be clean and dry before Control Center is calibrated. Calibrate as follows:

a. Turn on the air cleaner and fan (needle moves toward center of meter scale when air cleaner is operating).

b. When needle is steady, turn calibration screw (either clockwise or counterclockwise) until needle is over the center of the bar under HIGH.



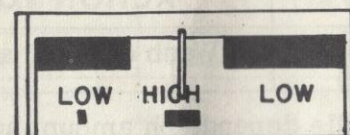
S830 SETTING AND ADJUSTING

When the Protective Screen becomes clogged with dirt, the system blower creates a negative, or suction, pressure in the duct because it cannot pull enough air through the air cleaner. The Filter-Flag Indicator has been adjusted by the installer to indicate an average clogged condition. If this adjustment is not satisfactory, change it any time to have the light come on more often (when the Protective Screen is less clogged) or less often (when more clogged) as desired. To have the indication more often, turn the adjusting screw (labelled "CHANGE FILTER") on the front of the Filter-Flag Indicator counterclockwise $\curvearrowright$ $1/4$ to $1/2$ turn and leave it until the next time the indicator light comes on. To have the indication less often,

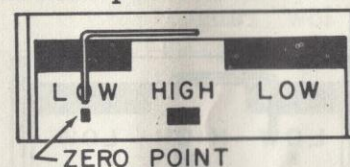
turn the adjusting screw $1/4$ to $1/2$ turn clockwise $\curvearrowleft$. If needed, repeat the adjustment next time the light comes on.

READING SYSTEM PERFORMANCE METER

① Needle steady and near center of gage. INDICATES normal operation at maximum efficiency.

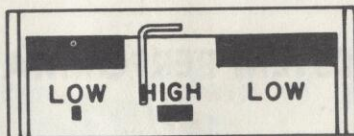


② Needle at zero point.



INDICATES	ACTION TO TAKE
a. System off	None. This is a normal shut-off. Fan is off, thus air cleaner is off, because thermostat is not calling for heating or cooling.
b. Timer operating.	None. This is normal after washing: built-in timer keeps air cleaner off and fan on for three hours to dry electronic cell.
c. Electrical failure.	Look for blown fuse in electric branch circuit to furnace. If timer is not operating and fan is on, but air cleaner still does not operate, see SERVICE, Page 34.

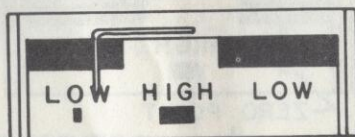
- ③ Needle moves out of "high" range toward "low" range.



INDICATES	ACTION TO TAKE
Cell is dirty.	Wash cell and allow to drain.

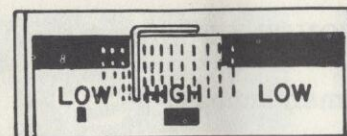
(Position of needle depends on amount and kind of dirt on the cell.)

- ④ Needle in "low" range.



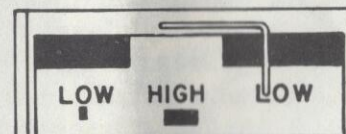
INDICATES	ACTION TO TAKE
a. Electronic cell is dirty.	Wash electronic cell and allow to drain.
b. Electronic cell is still wet from washing.	Open and close Power Door to start another drying period. Avoid this in future by allowing more time for cell to drain after washing.
c. Air cleaner is damaged or broken ionizing wire is touching collecting plates.	See SERVICE, Page 34 or REPLACING BROKEN IONIZING WIRES, Page 53.

- ⑤ Needle fluctuating. If momentary, no significance. If continuous, see following:



INDICATES	ACTION TO TAKE
a. Cell is dirty.	Wash cell and allow to drain.
b. Cell is not completely dry.	See 4b, Page 50.
c. Cell is damaged.	See REPLACING BROKEN IONIZING WIRES, Page 53.

- ⑥ Needle in right side "low" range.

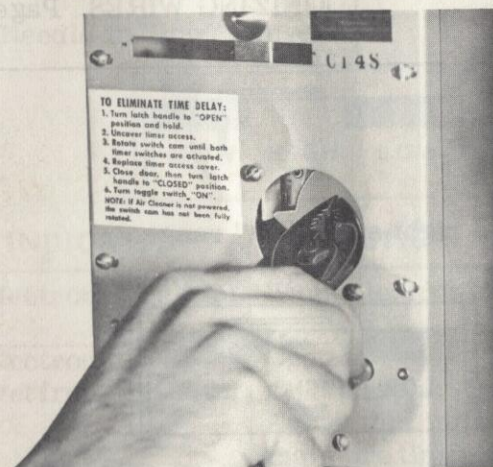


INDICATES	ACTION TO TAKE
Meter out of calibration.	See W634 CALIBRATION, Page 47.

RESETTING TIMER

POWER DOOR COVER CLOSED:

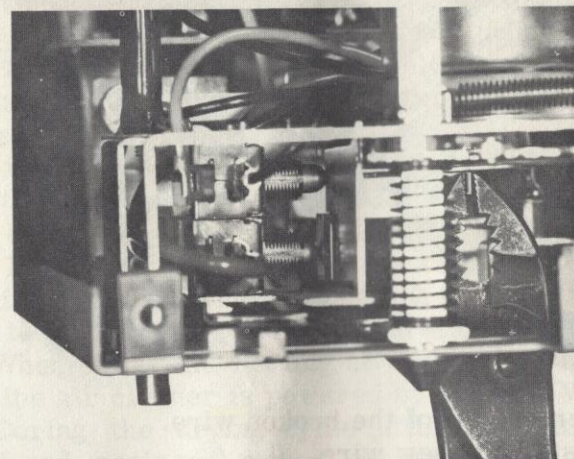
1. Uncover timer access.
2. Turn latch handle to "OPEN" position and HOLD.
3. Rotate cam with pliers until cam lobe reaches end of switch lever—rotate slowly to avoid cam lobe slipping past end of lever.
4. Close door and turn handle to "CLOSED" position.



POWER DOOR COVER OPEN:

1. Uncover timer access.
2. Rotate cam with pliers until cam lobe reaches

end of switch lever—rotate slowly to avoid cam lobe slipping past end of lever.



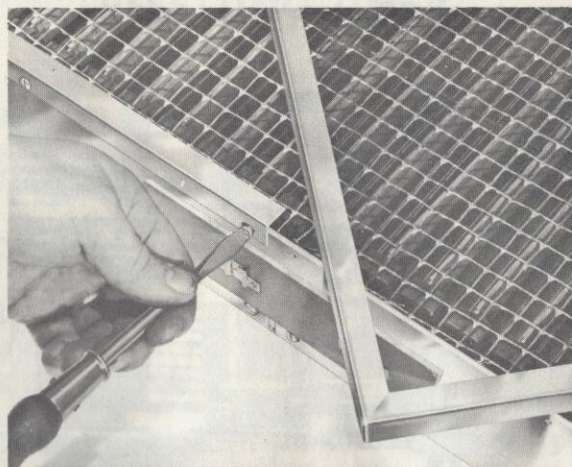
REPLACING BROKEN IONIZING WIRES

The fine wire electrodes in the charging section of the electronic cell may break or become damaged. Inspect the cell carefully from the upstream side after washing to make sure that none of the wires is broken or out of position. During operation, a broken or deformed wire generally causes a short to ground, possibly with visible arcing or sparking. This condition, or any other short in the charging section, is indicated on the Control Center meter when the needle moves into the LOW area.

Wires should always be replaced as soon as possible; a spare wire or two should be kept on hand for this purpose. However, as an emergency measure, remove all parts of the broken wire and temporarily use the cell one wire short until it can be replaced as directed below. See PARTS LIST, Page 78, for Part No. of wire.

1. Remove the fourteen screws around the upstream

edge of the cell, and take off the two angle frames and screen.



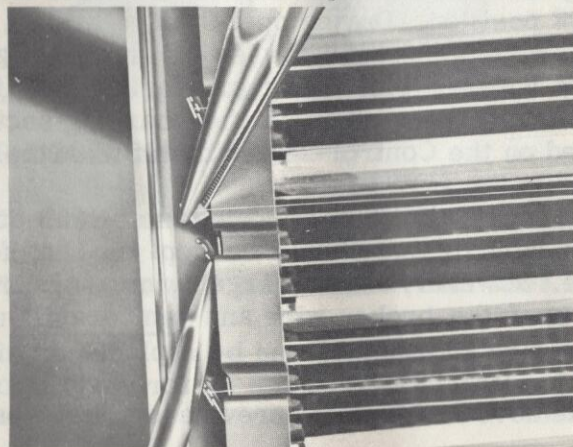
2. Remove all of the broken wire.

3. Install the new wire.

a. Slip one end of wire into slot in tension member on frame. Place a small block of wood between the frame and tension member to hold wire in place while proceeding to Step 3b.

b. Compress tension member on opposite side and slip other end of wire into slot. NOTE: Pliers may be used if necessary, but be careful not to break or deform the tension member.

4. Reassemble cell and replace in cabinet.



WIRING

All wiring to the air cleaner and to the Control Center is 120v, 60 cycle ac only.

All wiring must conform to applicable codes and ordinances in such matters as disconnecting means and overload protection.

The wiring assemblies (Pages 57 and 58) show the connections between the F37, W634, AT72F, and S830.

For every air cleaner installation, three wires—White, Black, and Red—connect the air cleaner system to the fan system. These three wires must be connected to provide the following operation:

a. When either the heating or cooling fan is operating, the air cleaner is powered by Red and White.

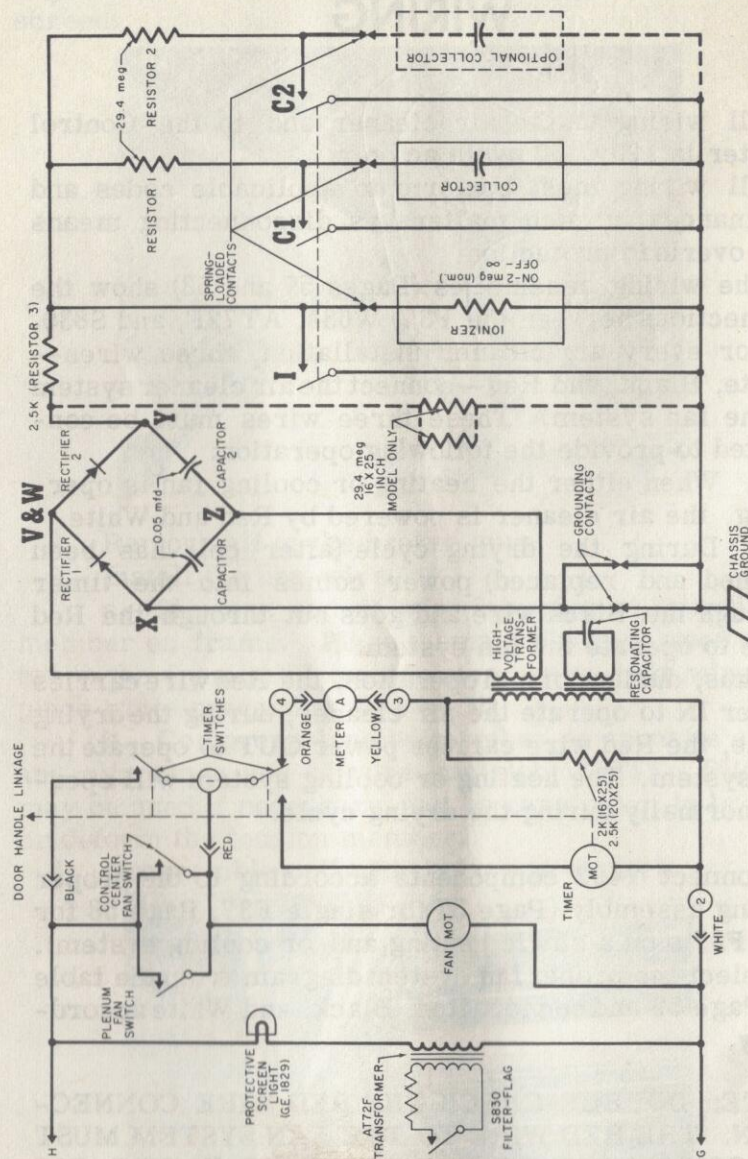
b. During the drying cycle (after cell has been washed and replaced) power comes into the timer through the Black wire and goes out through the Red wire to operate the fan system.

Thus, during normal operation, the Red wire carries power IN to operate the air cleaner; during the drying cycle, the Red wire carries power OUT to operate the fan system. The heating or cooling system will operate normally during the drying cycle.

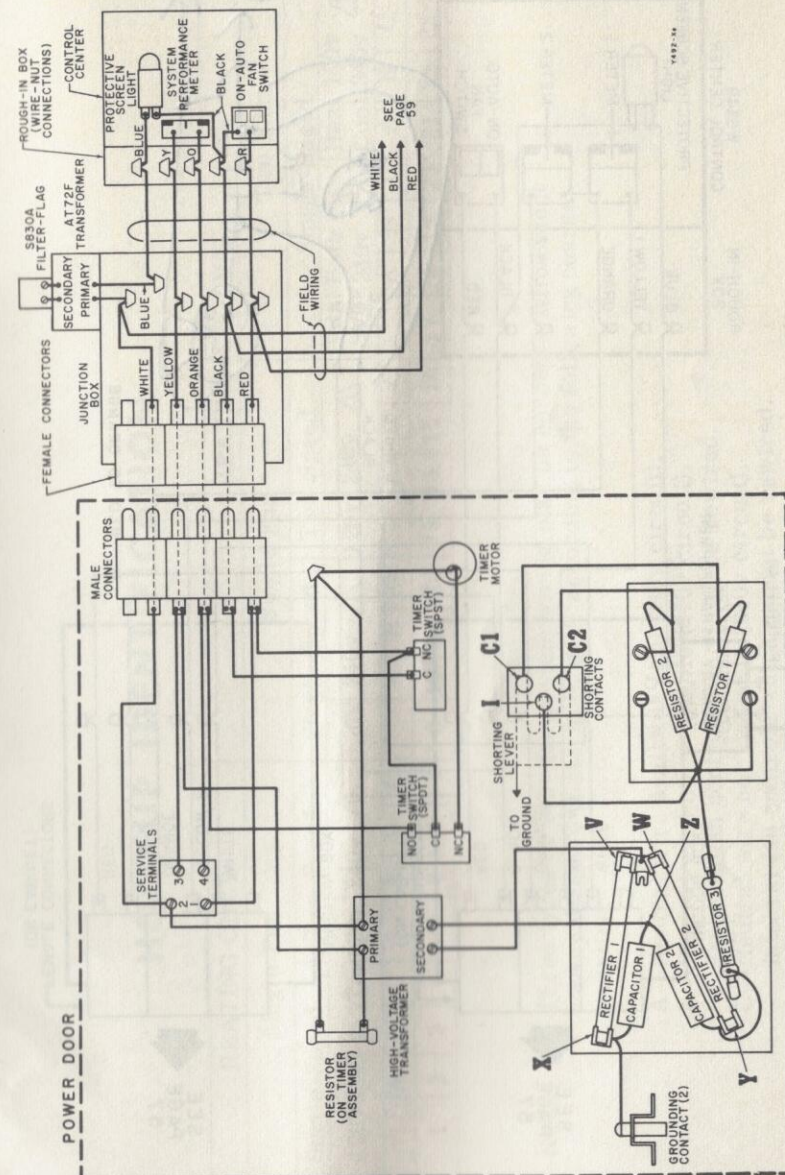
Connect Y492 components according to the proper wiring assembly (Page 57 for single F37, Page 58 for two F37's on a single heating and/or cooling system).

Select the proper fan system diagram from the table on Page 59 and connect Red, Black, and White accordingly.

NOTE: DOUBLE-CHECK THE RED WIRE CONNECTION. THE RED WIRE TO THE FAN SYSTEM MUST BE CONNECTED TO THE RED WIRE IN THE F37 JUNCTION BOX.

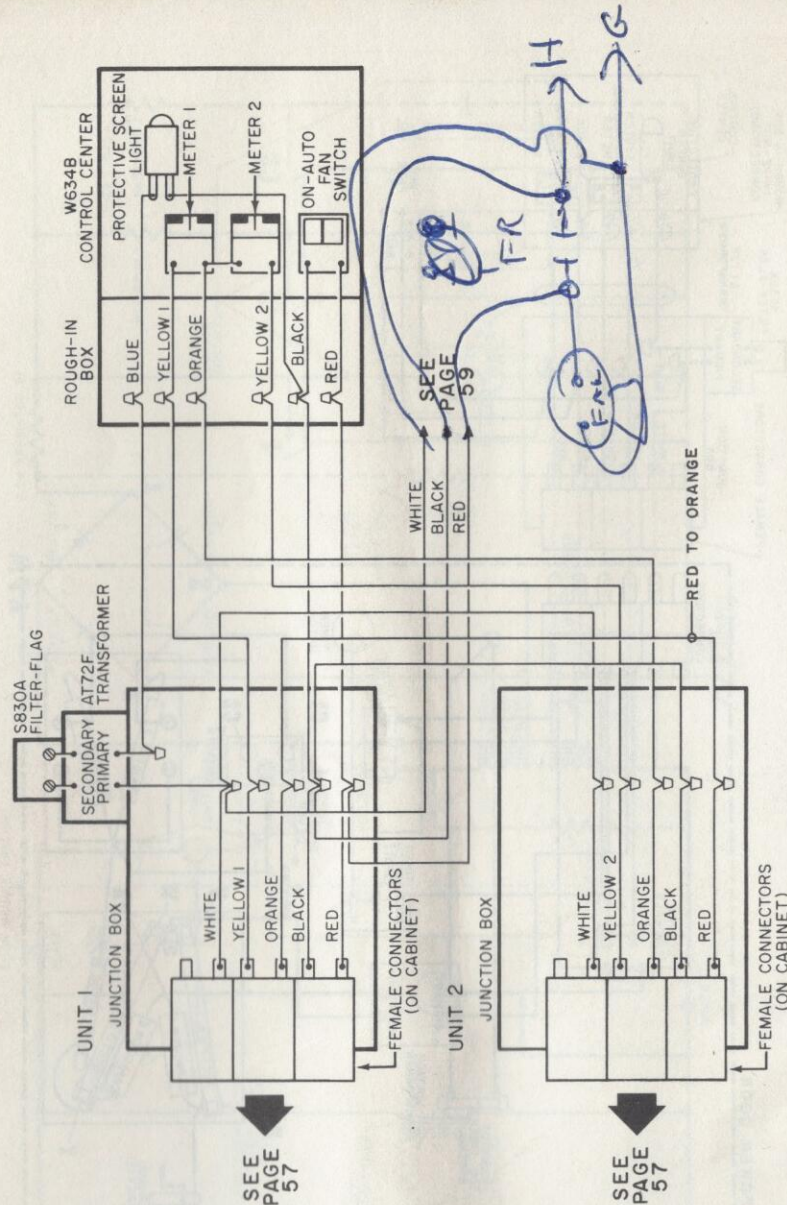


Y492 SCHEMATIC



Y492 WIRING ASSEMBLY (SINGLE F37)

Y492 WIRING ASSEMBLY (TWO F37'S IN SINGLE FAN SYSTEM)

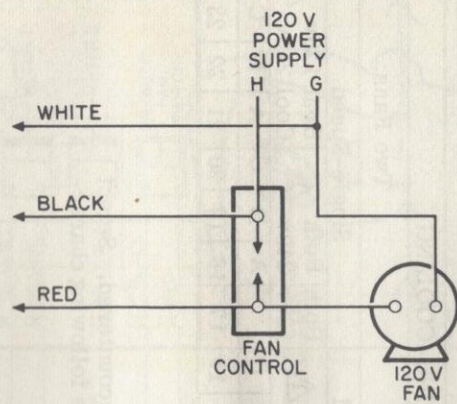


HOOKUP IDENTIFICATION

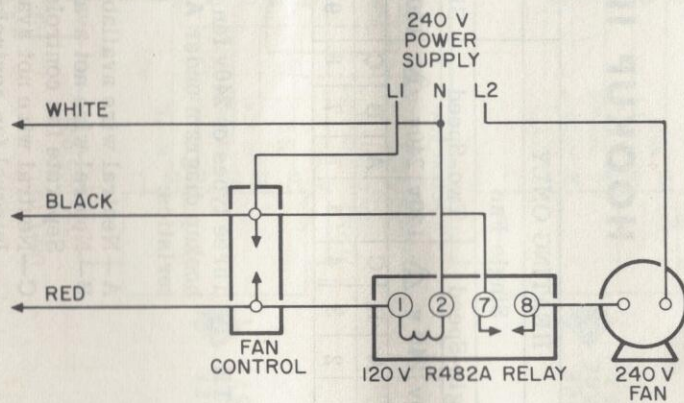
System	HEATING ONLY												HEATING-COOLING											
	Single Fan												Single Fan											
	Single-Speed				Two-Speed				Single-Speed				Single-Speed				Two-Speed				Single-Speed			
No. of Fans	120v				240 v				120v				120v				120v				Both 120v			
Fan Speed	A B C				A B C				A B C				A B C				A B C				Both 120v			
Power Supply	A B C				A B C				A B C				A B C				A B C				Both 120v			
See Note	A B C				A B C				A B C				A B C				A B C				Both 120v			
Diag. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

NOTE Three types of 240v fan system wiring may be encountered. Select hookup diagram under A, B, or C according to the following characteristics:

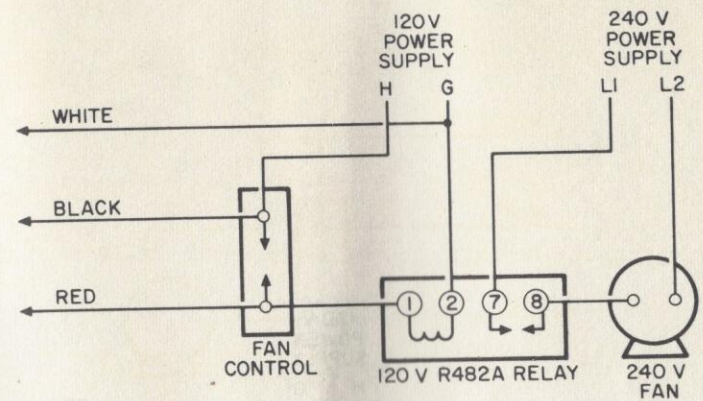
- A—Neutral wire available (120/240v circuit).
- B—Neutral wire not available (240v circuit). Separate fan controls which can be rewired.
- C—Neutral wire not available (240v circuit). Integral fan controls which cannot be rewired.



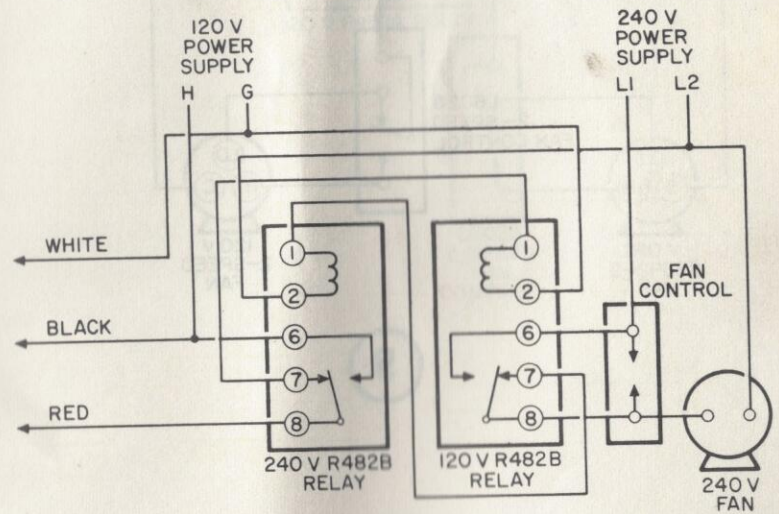
1



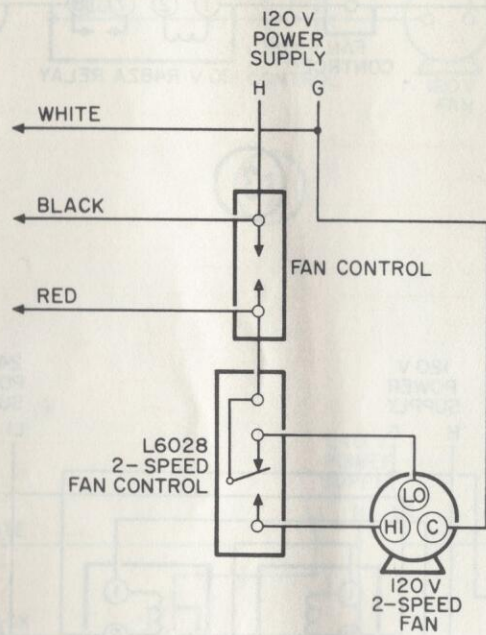
2



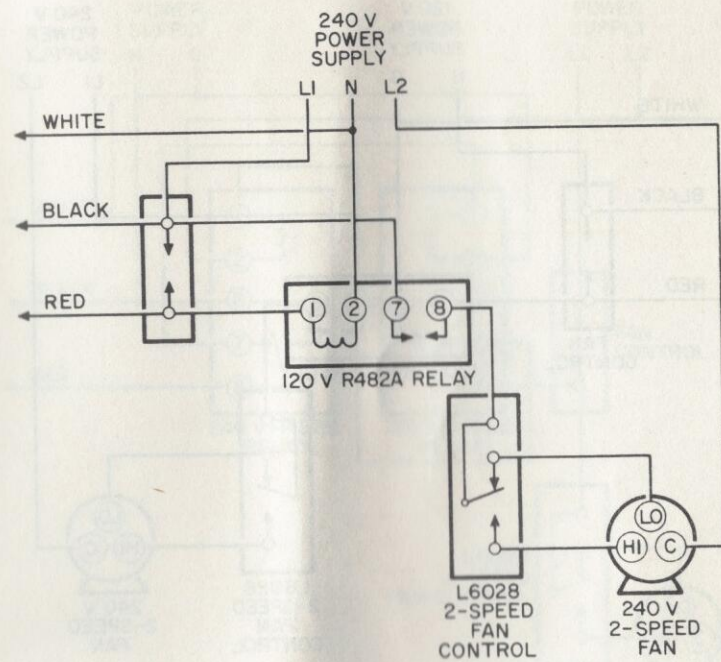
3



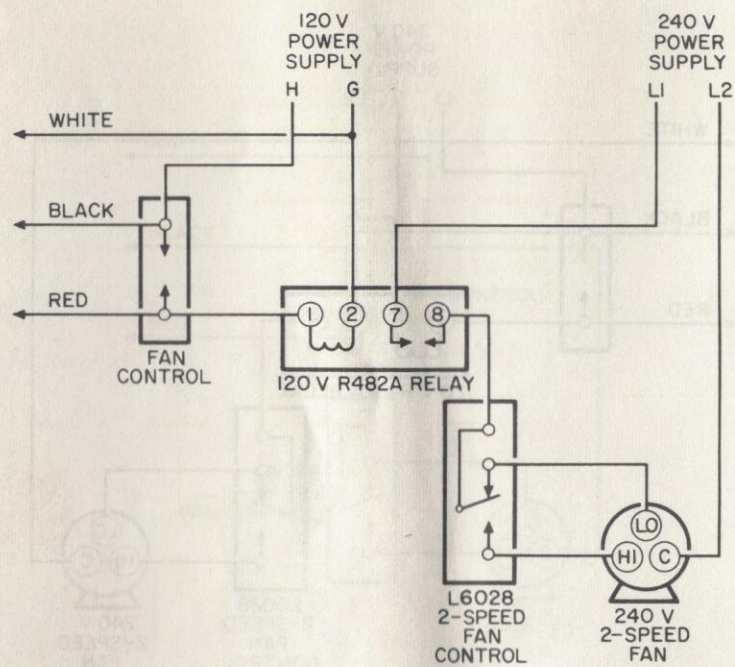
4



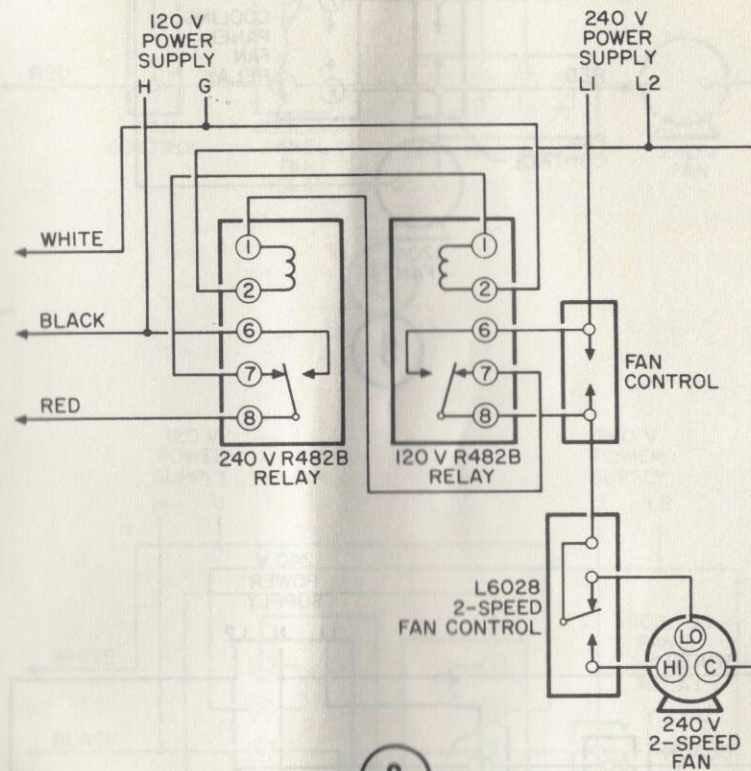
5



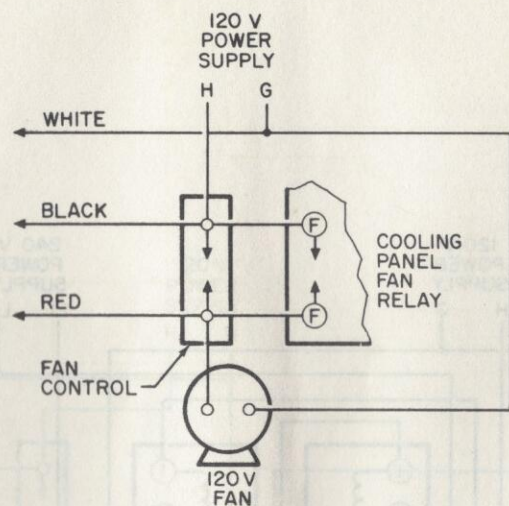
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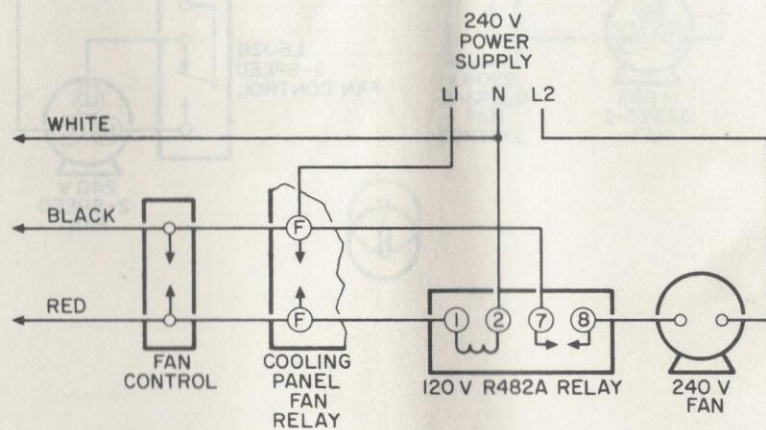
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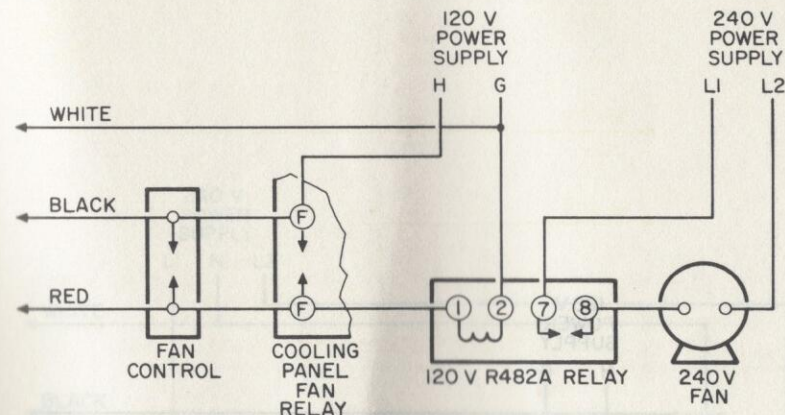
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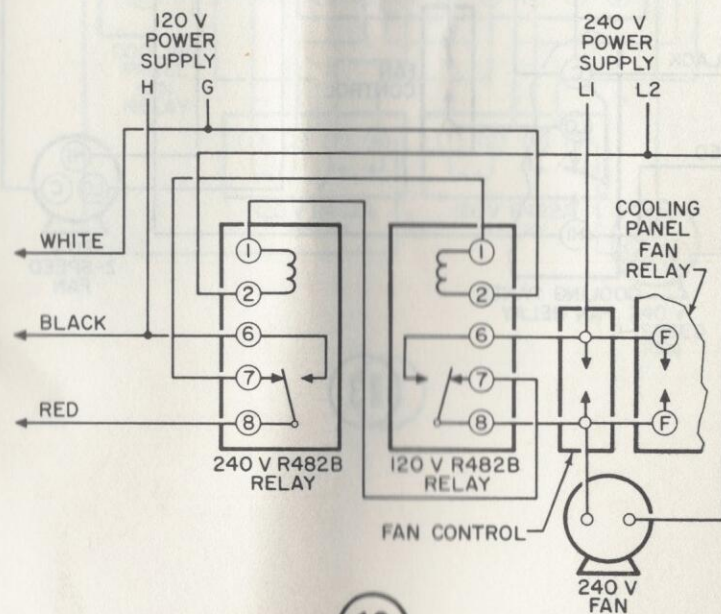
9



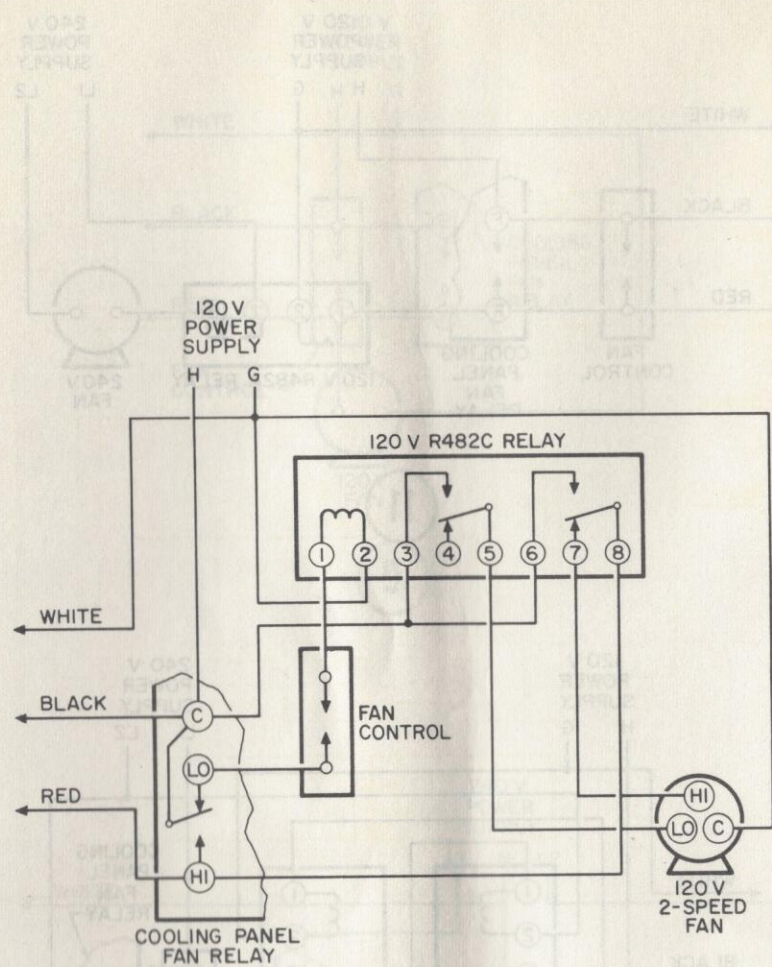
10



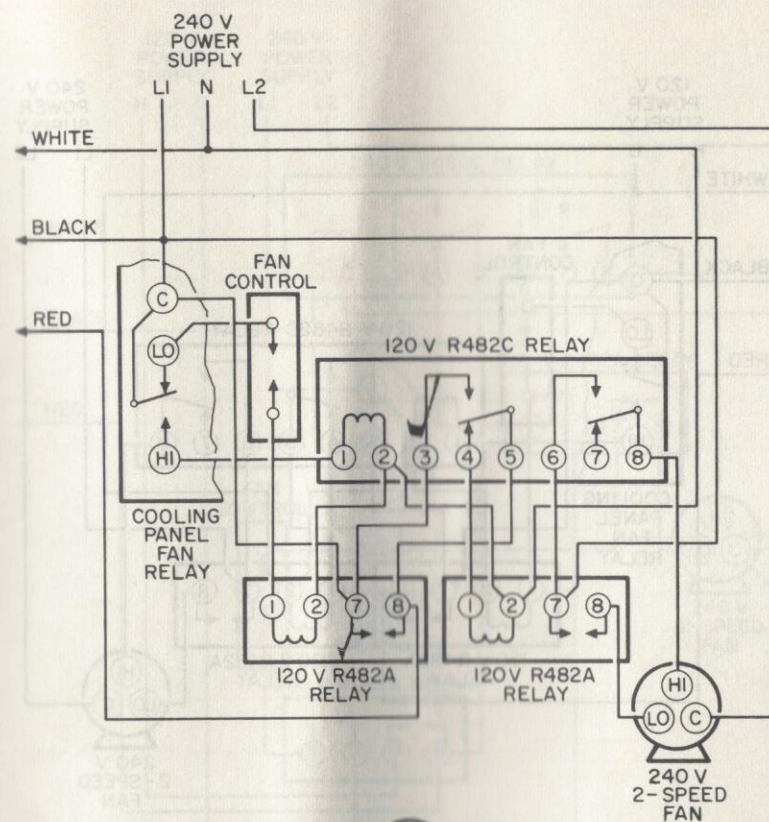
11



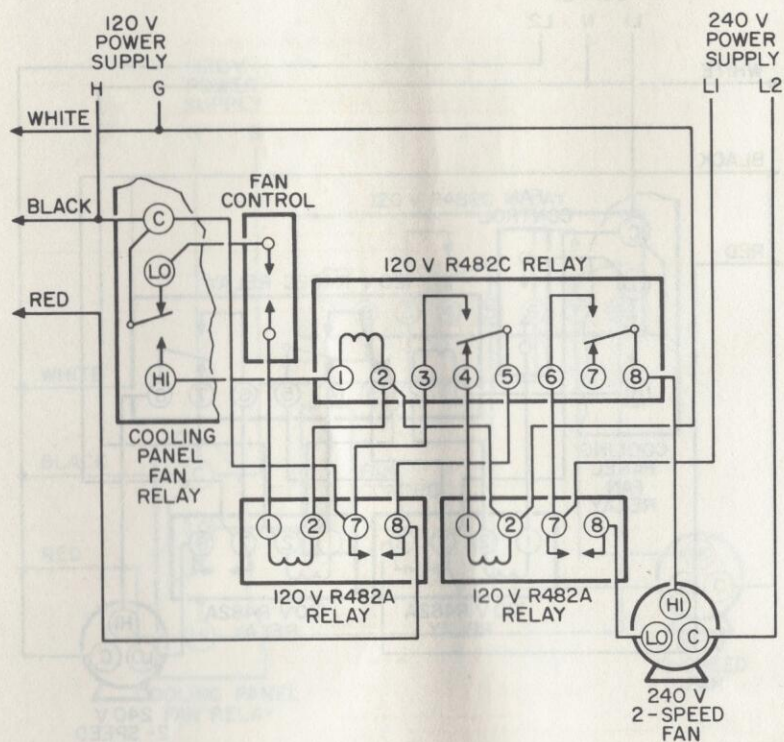
12



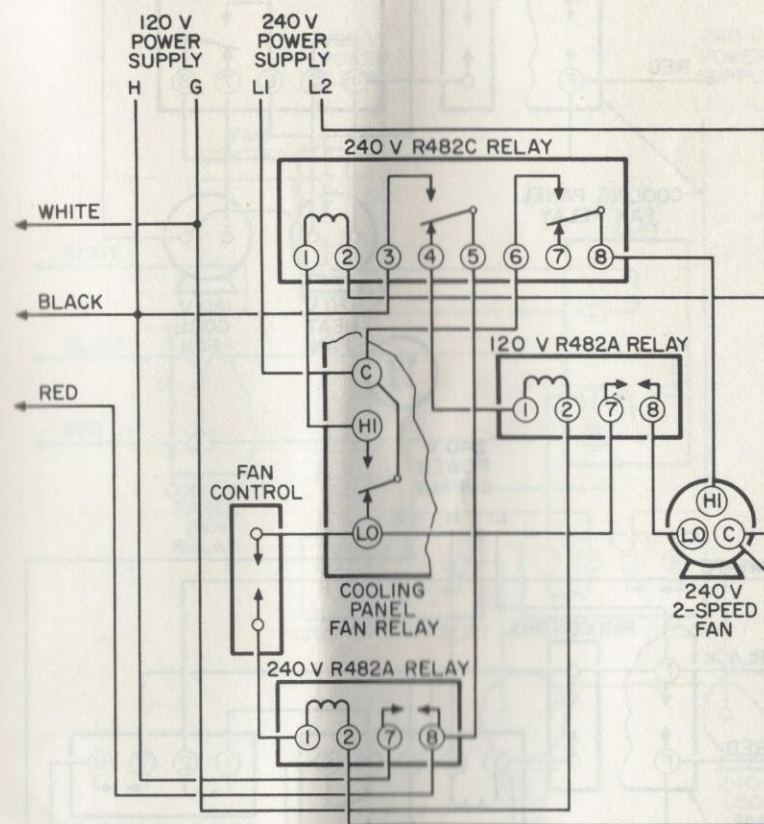
13



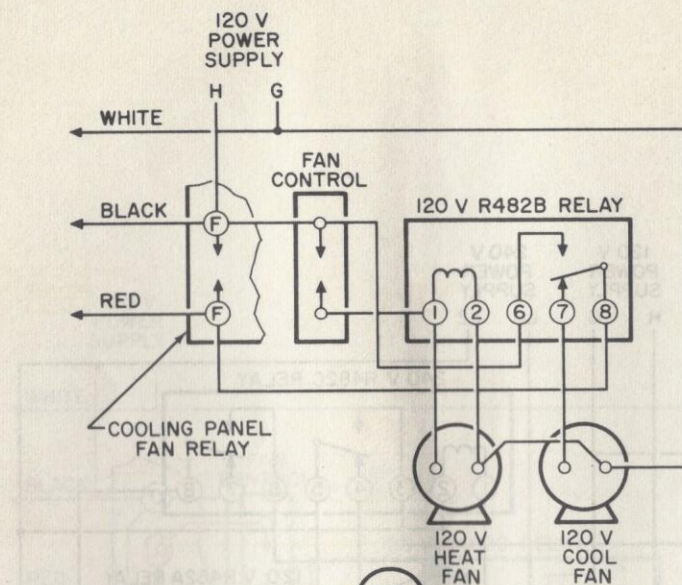
14



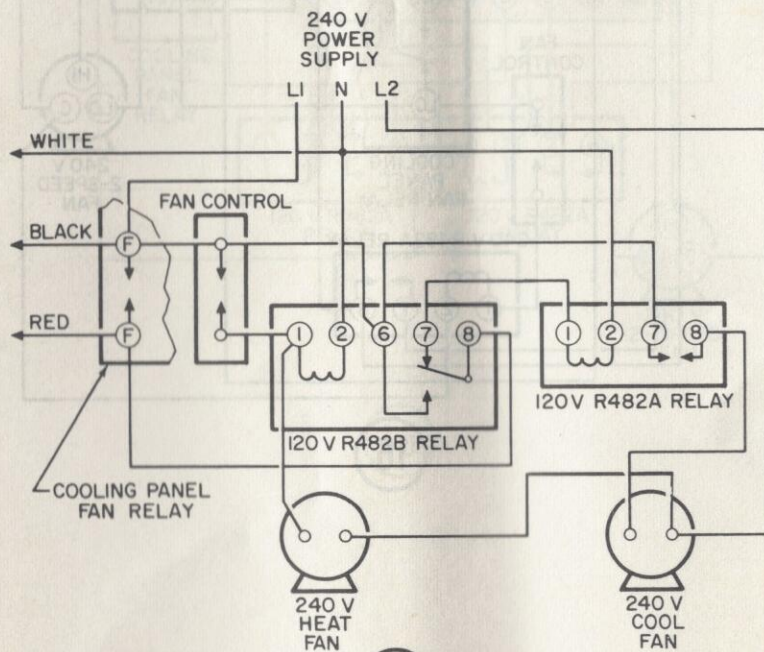
15



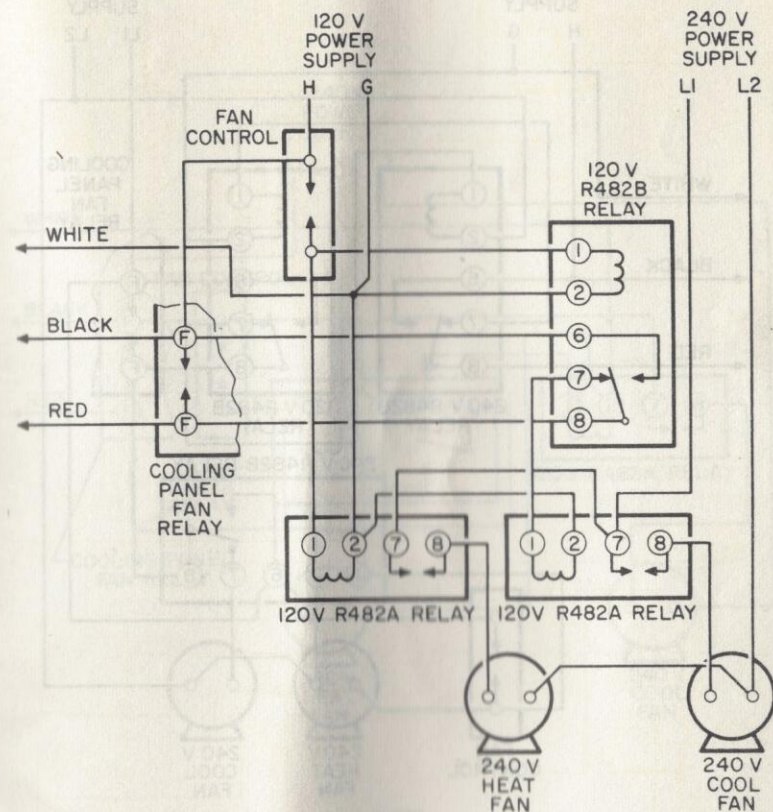
16



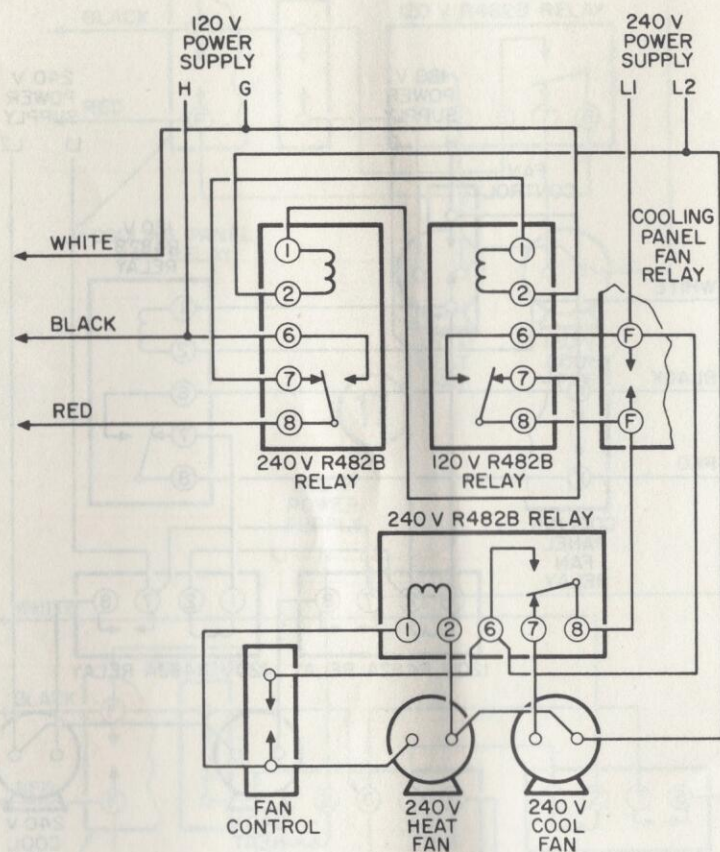
17



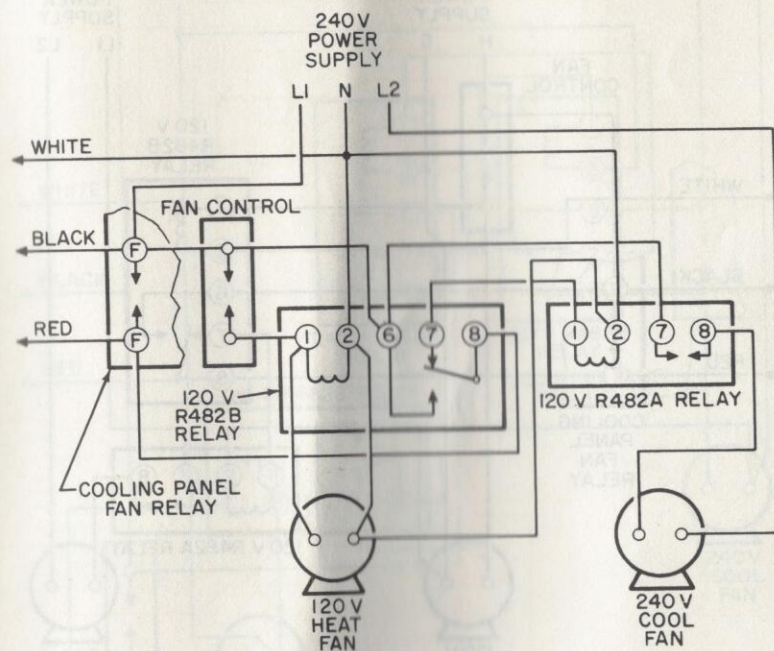
18



19



20



21

PARTS LIST

NOTE: All wiring has been deleted from these drawings for clarity. All screws, nuts, and washers are standard hardware items obtainable locally.

DRAWING NUMBER	PART NUMBER		DESCRIPTION
	16 x 25	20 x 25	
1	117839AAA	117840AAA	Complete Power Door Assembly
2	117787A	117789A	Air Flow Distributor
3	FC36A1009	FC36A1017	Electronic Cell
4	117786A	117788A	Protective Screen
5	117104	117104	Female Connector (3)
6	S830A1005	S830A1005	Filter-Flag Indicator
7	AT72F1004	AT72F1004	Low-Voltage Transformer
8	117785A	117784A	Boot (Cabinet)
9	117781	117781	Filter Guide (2)
10	117766C	117766C	Junction Box (Includes No. 5 (3); no cover)

PARTS NOT SHOWN

FC35A Optional Collector Section

FC35A1001 for 16-inch model

FC35A1019 for 20-inch model

Seal Plate (included with FC35) to close opening left by removal of air flow distributor.

119849A for 16-inch model

119849A for 20-inch model

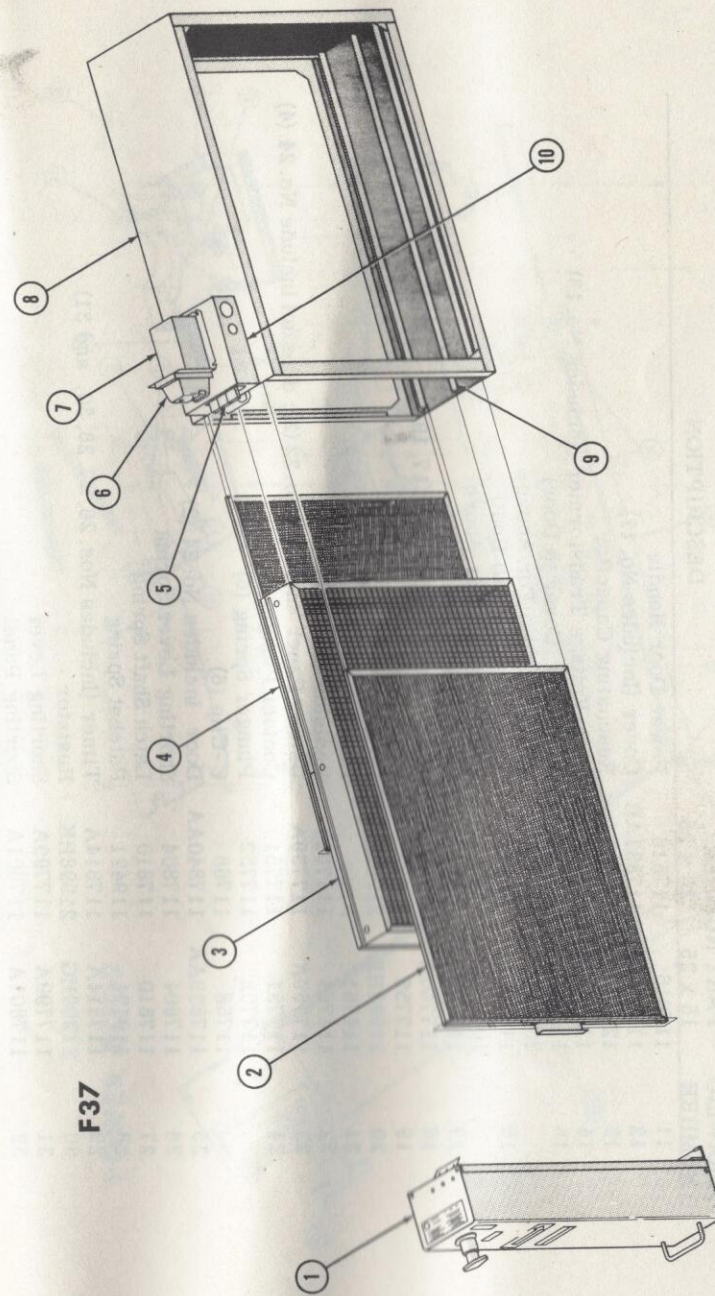
Ionizing Wire for FC36A Electronic Cell.

114764A for 16-inch model

114764B for 20-inch model

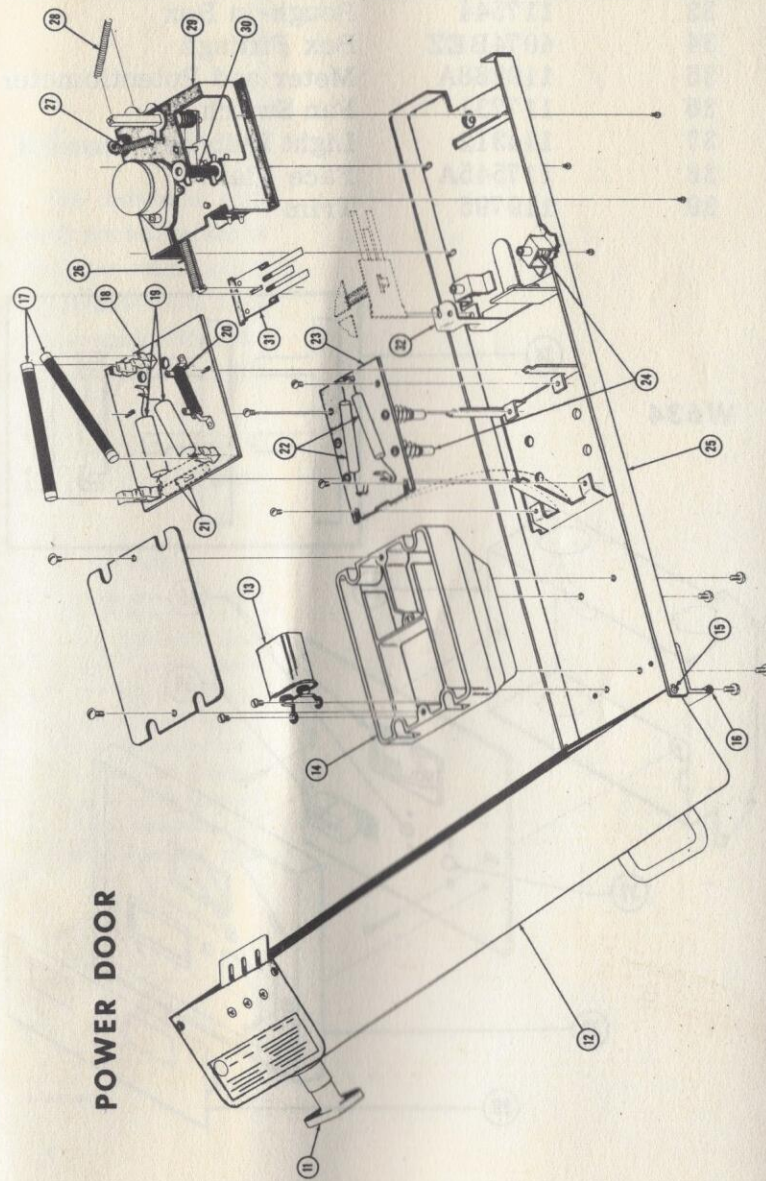
21138E Retainer Clip Assembly to hold cells in place when F37 is mounted with Power Door facing down.

F37

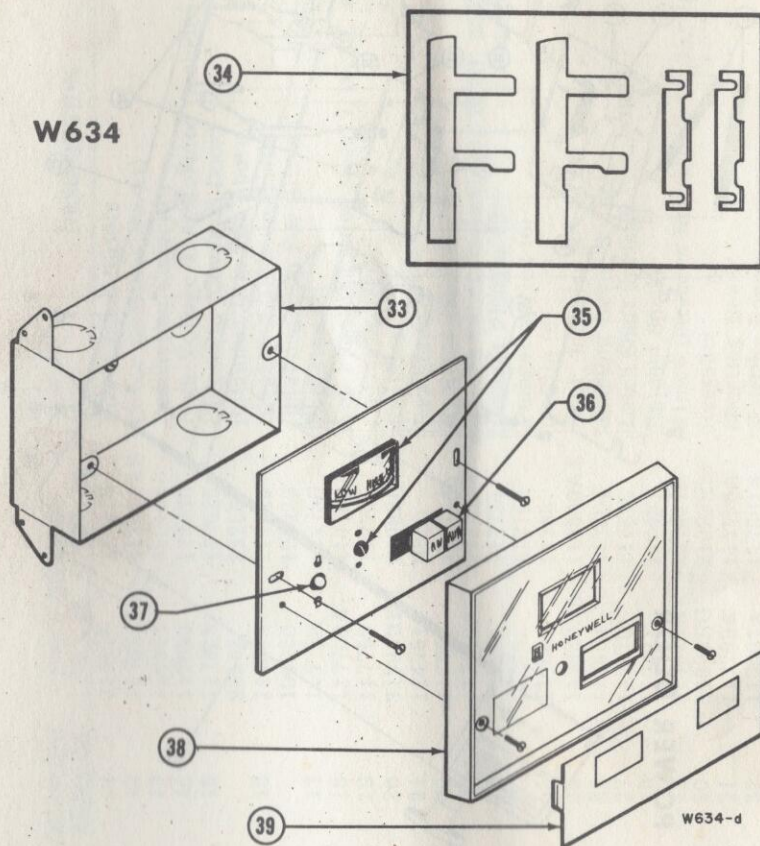


DRAWING NUMBER	PART NUMBER		DESCRIPTION
	16 x 25	20 x 25	
11	117816	117816	Power Door Handle
12	117831AA	117831AB	Cover (Includes No. 11)
13	120401	120401	Resonating Capacitor
14	117836	117836	High-Voltage Transformer (Includes No. 13)
15	117825	117825	Hinge Pin (Cover to Door)
	23258	23258	Retaining Clip For Above
16	117815	117815	Hinge Pin (Door to Boot)
	104020	104020	Retaining Clip For Above
17	117756	117756	Rectifier (2)
18	117760A	117760A	Top Panel (Includes Nos. 17, 19, 20, and 21)
19	117755	117755	Capacitor (2)
20	21998HK	21998HK	Resistor
21	114761	None	Resistor (2)
22	114761	114761	Resistor (2)
23	117759A	117759A	Bottom Panel Includes No. 22 (2); does not include No. 24 (4)
24	117751	117751	Contact Plunger (6)
	117752	117752	Plunger Spring (6)
	11768	11768	C-Clip (6)
25	117839AA	117840AA	Door Includes No. 24 (2)
26	117804	117804	Shorting Lever Spring
27	117810	117810	Latch Shaft Spring
28	119421	119421	Ratchet Spring
29	117814A	117814A	Timer (Includes Nos. 26, 27, 28, 30, and 31)
30	21998HG	21998HK	Resistor
31	117799A	117799A	Shorting Lever
32	117801A	117801A	Shorting Panel

POWER DOOR



DRAWING NUMBER	PART NUMBER	DESCRIPTION
33	117544	Rough-in Box
34	4074BEZ	Box Fittings
35	119288A	Meter and Potentiometer
36	117731	Fan Switch
37	114312	Light Bulb
38	117545A	Face Plate
39	119795	Trim



Reference Publications:

The individual components shown in this handbook are not explained in detail. The following publications are supplied with the components or may be obtained individually on request to your nearest Minneapolis-Honeywell Branch office or Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

*(In Canada—Vanderhoof Ave., Leaside,
Toronto 17, Ontario)*

TITLE	Form Number
F37A Residential Electronic Air Cleaner	95-5240
W634A Control Center	95-5139
W634B Control Center	95-5286
AT72F Transformer	95-5172
S830A Filter-Flag Indicator	95-2758
FC35A Collector Cell	95-5223
Y492 Service Guide	70-9602
Homeowner's Manual	50-9011
21138E Retainer Clip Assembly	95-5477
120589A Wash Stand	95-5837

CONDENSED PROCEDURE OF STEPS 1 THROUGH 15

- 1 Check interlock connectors and wiring.
- 2 Be sure W634 is properly calibrated.
- 3 Check Protective Screen light and meter needle.
- 4 Make cell arc (also optional collector, if used).
- 5 Inspect components—contact buttons, air-flow arrows, and condition of cells, ionizing wires and collection plates.
- 6 Remove Power Door and connect power cord and jumper.
- 7 Check for short to frame; be sure timer operates.
- 8 Check high-voltage transformer. Check for spark from X to Y—strong blue spark, loud report.
- 9 Check rectifiers—strong report.
- 10 Check capacitors—small spark.
- 11 Check Resistor 3—intermittent, moderate, blue spark.
- 12 Check Resistors 1 and 2—weak, steady, hissing spark.
- 13 Replace Power Door, return cell(s) to cabinet.
- 14 Check ionizer section—moderate, intermittent spark.
- 15 Check collector circuit—moderate, intermittent, blue spark.

