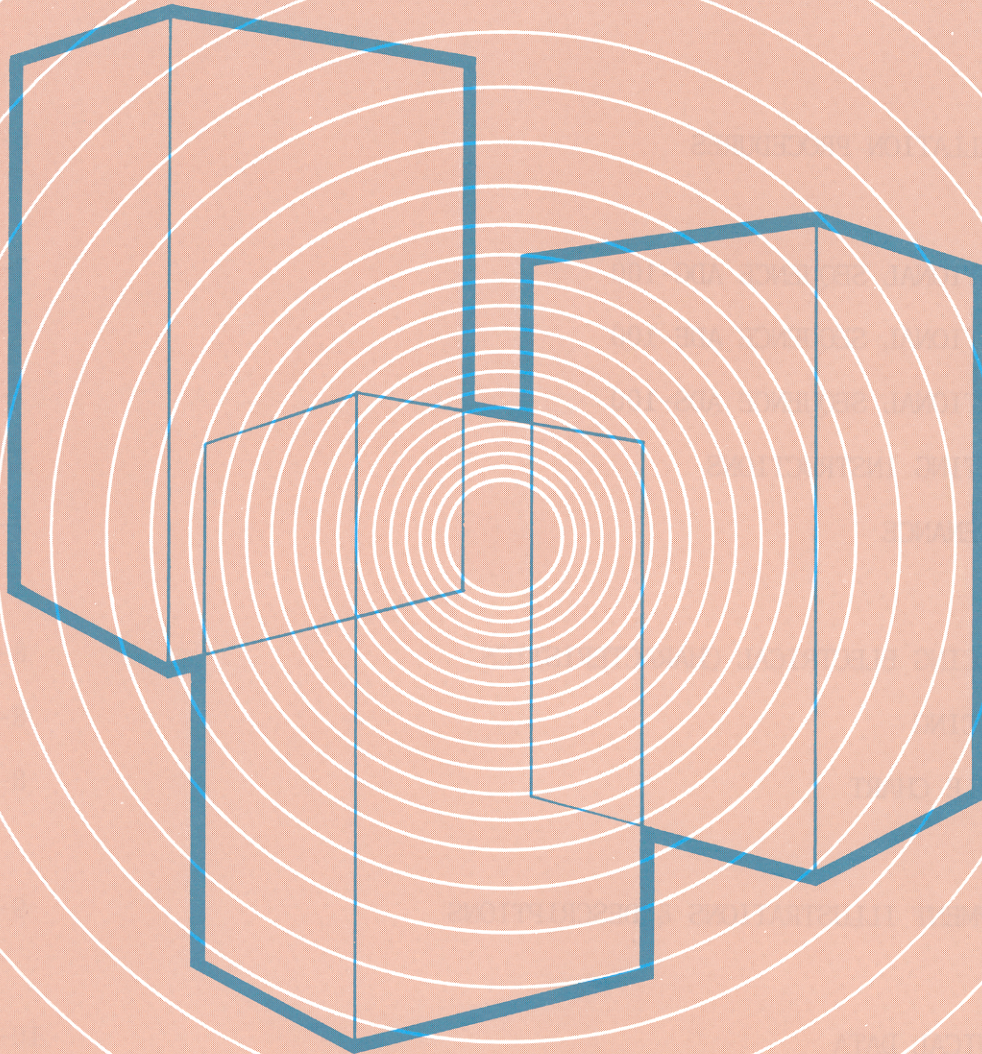


**GAS  
ELECTRIC  
STEAM**

**MODEL  
AD-100**



**A COMPLETE LINE OF CLOTHES DRYING TUMBLERS**



**AMERICAN**  
**AMERICAN DRYER CORPORATION**

88 CURRANT ROAD, FALL RIVER, MA 02720-4781

TELEPHONE: (617) 678-9000 / CABLE: AMDRY / TELEX: 927520 AMDRY FRIV

**INSTALLATION / SERVICE / PARTS**



**IMPORTANT.** THE PURCHASER SHOULD CONSULT THE LOCAL GAS SUPPLIER FOR PROPER INSTRUCTIONS TO BE FOLLOWED IN THE EVENT GAS IS SMELLED BY THE USER. THESE INSTRUCTIONS SHOULD BE PLACARDED AND POSTED IN A PROMINENT LOCATION.

KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

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**CAUTION - FOR YOUR SAFETY**  
**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE**  
**VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY**  
**OTHER APPLIANCE**

## SECTION VI

### INSTALLATION

Except where conditions do not allow, the dryer should be handled in an upright position at all times. The console may be removed from the base after uncrating (See Figure 3 and 4, Page 10-5) if headroom is limited. Installation should be performed by competent technicians in accordance with local and state codes. In the absence of these codes, installation must conform to applicable American National Standards: ANSI Z223.1-1974 (National Fuel Gas Code) or ANSI C1-1978 (National Electric Code).

**UNCRATING.** Remove slatted crating, sidewall sills, protective cover, and all packing materials. Remove front and rear skid runners (2 bolts. . .each runner).

**LOCATION OF DRYER.** Move the dryer into position. (Allow two feet of clearance to rear wall for ease of installation and possible future servicing. Level the dryer by using metal shims under the 4 support plates (See Figure 4, Page 10-5). Shims should not be less than 4 inch squares.)

**DRYER ENCLOSURE.** Adjacent structures should be made of non-combustible materials. A minimum clearance of 5 inches is suggested between dryers or adjacent sidewall structures. Head clearance should not be less than 15 inches, except along the front of the console which may be closed in if desired. (Allowance must be made for opening the control door.) Minimum clearances of 0 inches are permitted from floor, sides, and rear of dryer, and 6 inches from top of dryer to nearest combustible surfaces.

**EXHAUST DUCT AND FRESH AIR SUPPLY.** Exhaust duct requirements are discussed on Page 10-2.

Air supply must be given careful consideration to assure proper performance of each dryer. An unrestricted source of air to provide for 1700 to 2100 cfm is proper for all models except the super steam dryer which requires a 3000 cfm free air supply. It is suggested that an air entrance of 3 to 4 square feet be provided for each dryer requiring 1700 cfm supply air and an entrance of 5-6 square feet for each super steam model. Allowance should be made for remote locations of air entrances or constricting passageways, and also for register/louvre restrictions. Further allowance should be made where dryers are located at excessive altitudes or predominantly low pressure areas. Additional detailed information is provided on Page 10-3.

**ELECTRICAL POWER CONNECTORS.** Steam and gas dryers are provided with 3 leads (3Ø power) extending out of the side of the console (upper) junction box located at the rear left of the dryer. These leads are #16 AWG wires. The supply wiring should be #14 AWG minimum.

Check data plate located on the upper rear for proper machine voltage and amperage requirements.

Wire splicing and conduits should be in accordance with local or state regulations and all work should be performed by properly licensed and competent electricians.

In the absence of such codes, all electrical construction and workmanship must conform to the applicable requirements of the National Electric Code (ANSI C1-1978).

Line power source requirements are shown on the motor controls diagram located on the inner side of the Reset (L.H. side) panel. Care must be taken to assure that the impeller rotates in the direction of the arrow shown on the label located on the impeller motor. Each dryer must be externally fused. NOTE: There are no internal fused circuits on gas or steam dryers.

Actual voltage and current should be measured to insure proper operation of the dryer.

(Motors are protected from overload but continuous operation of the motors at above normal temperatures due to low voltage supply will greatly reduce their operating life.)

**GROUNDING**, A ground (earth) connection must be provided and installed in accordance with local and state codes. In the absence of these codes, grounding must conform to applicable requirements of the National Electric Code (ANSI C1-1978). A grounding lug is provided within the console (upper) junction box for this purpose.

**ELECTRIC DRYERS**, All electric dryers are 3Ø and provided with a 3 pole terminal block for connecting the 3 proper size power cables, and a grounding lug identified for that purpose.

Supply cables must be of copper and all 3 cables should be passed through one large conduit. All electrical work should be performed by qualified electricians in accordance with electric codes of the locale. In the absence of local electrical construction codes, all electrical power, connections, including conduits, fuse or circuit breakers, housings, wiring, wire terminations, insulation, etc. must conform to applicable requirements of the National Electric Code (ANSI C1-1978).

**GAS CONNECTORS**, All gas dryers are provided with a 3/4" inlet pipe extending to the upper rear of the dryer. (See Figure 41, Page 9-14) Proper size of gas supply piping should be determined by the local gas supplier and all piping connections should be performed by qualified technicians in accordance with codes of the locale. In the absence of local codes, the gas supply installation must conform to the applicable requirements of the National Fuel Gas Code (ANSI Z223.1-1974).

Access to the gas valve is via the control door at the front of the dryer and is provided with a tap for regulating the gas pressure (natural or mixed gas). The pressure is regulated to 4" water column pressure at the factory. (No Pressure regulation is provided for dryers equipped to operate with liquid petroleum gases. Your gas supplier must regulate the pressure of the gas supply. The dryer should be operated at 10 1/2" W.C. pressure.) Add an external shut off for servicing ease.



**STEAM CONNECTIONS**, Both supply and return steam connections are located at the rear of the heating coil unit (See Figure 1, Page 10-4) and are 1" NPTF and 1/2" NPTF respectively. Steam dryers are equipped for operation at 125 psig maximum. The dryer may be operated at reduced pressures as low as 15 psig (with correspondingly reduced drying rate). Low pressure operation requires large supply lines. Properly sized steam supply mains, condensate returns, and controls are essential to satisfactory performance. All steam connections should be performed by qualified technicians in accordance with local codes, and operation and system maintenance should be provided by properly licensed and competent personnel. Connections between steam supply and coil must be provided with flexible hoses or couplings to eliminate piping strains.\* Clean lint and dirt from between coil fins regularly for maximum air flow.

**DRYING:** WARNING: Dry only articles that have been washed in water. Articles with flammable or explosive soil must be thoroughly and carefully washed. Drying can release volatile vapors which may result in fire or explosion. Drying time depends upon the size of load being dried, the amount of moisture left in the clothes by washer-extractor (extraction) type and mass of clothes, air flow, and adequate heat. "Browning" of cloth is usually due to insufficient rinsing. Do not dry plastic or rubberized articles in tumblers. Damage to clothes can result from improper operation or installation, or material not suited to tumbler drying.

**LINT SCREEN:** CAUTION: Keep lint compartment clean.

### **GENERAL MAINTENANCE AND SERVICES**

**JANITORIAL:** Clothes drying tumblers produce lint and the area around each dryer should be kept clean. Besides the usual frequent cleaning of the lint compartment, lint should also be removed from between the basket and the wrappers; from up and behind the front panel in the lint compartment area; gathered from around the loading door switch and thermostat connections and wiring; from the burner area; and from within the motor and operator controls enclosures. Lint should also be removed from the air vents of the motor frames, and from inside the electrical junction boxes on the rear of the dryer. Exhaust ducts and make-up air inlets should be examined periodically, and freed of lint at elbows and grills. Care should be taken not to pile articles near make-up air vents, exhaust duct exits, over the top or at the back of the dryer. These good housekeeping suggestions should be performed at least three or four times a year, and more frequently as conditions may indicate.

**BELT CARE:** Motor and drive belts should be examined and a belt conditioner applied. Cracked or seriously frayed belts should be replaced. Always replace both belts. Tighten loose belts when necessary and check belt alignment

\*FAILURE TO PROVIDE FLEXIBLE FITTINGS AND OTHER STEAM SUPPLY & CONDENSATE RETURN LINE COMPONENTS (PG. 10-7) WILL VOID THE WARRANTEE COVERAGE ON YOUR HEAT EXCHANGERS .

**LUBRICATION:** Motor bearings are sealed and do not require lubrication service. Tumbler and idler bearings equipped with grease fittings should be lubricated twice annually with a general purpose lithium base grease. Do not over grease. Rotate shaft and add grease slowly until it begins to show at the seals. Do not use animal or vegetable base lubricants.

**GAS CONNECTIONS:** Non-permanent gas connections (unions, flared tube fittings, pilot line connections, gas manifold orifices, etc.) should be checked two or three times annually for leakage that might be caused by vibration. Use a mild soap solution. Do not use a flame at any time to check for leaks.

**ELECTRICAL CONNECTIONS:** Electric service and grounding connections should be examined for looseness a week after initial installation, again after 3 or 4 weeks of operation, and thereafter two or three times annually.



SECTION VII  
OPERATIONAL SEQUENCE MODEL ADG-100

PRESTART CONDITIONS,

- A. Depress manual reset thermostat (Illus. #5, page 9-7).
- B. Close lint door, main door, and control door.
- C.
  - 1. Auto only dryer - display shows F D.
    - a. Load fabric by depressing corresponding button (i.e. 1 thru 9).
    - b. Load dryness by pressing corresponding button (i. e. 1 (less dry) to 9 (more dry) ).
    - c. Depress "Enter/Start" button.
  - 2. Auto-Manual dryer - display shows fill.
    - Auto selected - see above.
    - Manual selected.
      - a. Load drying time by depressing corresponding buttons (i.e. 1 min. thru 99 min.).
      - b. Depress "Enter/Start" button.
      - c. Load cooling time by depressing corresponding buttons (i.e. 1 min. thru 99 min.).
      - d. Depress "Enter/Start" button.
      - e. Load fabric by depressing corresponding button (i.e. 1 thru 9).
      - f. Depress "Enter/Start" button.

OPERATION

Depressing the "Enter/Start" button as a final entry of the prestart condition, forwards a command signal from the computer chip energizing the motor control relay(s), and starts the motors. At the same time, a signal is also sent energizing the coil on the heat circuit relay. The valve is then energized after the air-switch has been closed.

On the operating panel, the LED display shows that the dryer is operating in the drying mode, and also the drying time entered. The air switch closes soon after the motor is started. The glo-bar is ignited, and the primary valve is opened. Gas does not flow because of the normally closed flame switch (I.R. sensor switch) prevents the secondary valve from opening. In about 10 - 15 seconds the glo-bar is fully heated (from a "cold" 70°F. start). Its radiation heats up the Bi-metallic flame switch, and the switch opens (25 - 40 seconds later depending on its sensitivity and room temperature) permitting the gas to flow through the secondary valve. The glo-bar is essentially extinguished, but in this short period remains hot enough to ignite the gas. The gas flame radiates enough heat to keep the I.R. flame switch open until the micro processor heat circuit relay opens to shut off the gas.

When both the flame switch and heat circuit relay reclose, the secondary valve closes and the ignition cycle is restarted. The temperature of the hot air will continue to drop while either the heat circuit relay or the flame switch remains open. After both are closed, the air temperature continues to fall until the glo-bar is sufficiently reheated and radiates enough heat to reopen the flame switch since the glo-bar and flame switch are much warmer than they were at the start of the first ignition cycle, the time to recycle is reduced to 25-30 seconds total.

When the temperature at the temperature transducer has risen to the cut off temperature corresponding to the heat value entered during prestart, the gas valve solenoid is de-energized, the valve closes, and the flame is extinguished. After 15 seconds, the gas valve solenoid is re-energized and ignition is reestablished by the glo-bar system. This cycle continues until the programmed drying time has expired. This will then de-energize the P.C. mounted gas valve solenoid and shuts off gas flow to the burner. The motor relay(s) remain energized allowing the blower and tumbler to rotate without heat.

On the operating panel, the LED display shows the dryer has entered the cooling cycle, and will continue to run for the duration of cooling time entered in the prestart condition, or approximately 5 minutes in the automatic mode.

When the cooling time has expired, the motor relay(s) are de-energized. The display on the operators panel shows "CCOO" (Cycle Complete - Zero Time Remaining).

Opening the door at the end of the cycle will remove "CCOO" from display and "FILL" or F D will return. If the door is opened during the cycle, the machine will turn off completely. The cycle may be continued by closing the door and pressing the "ENTER/START" button.

The motors are protected by an internal overload thermostat. If the blower motor overheats, it will stop. The gas flame will be extinguished within a few seconds when the air switch opens. If the air flow switch fails to open, the high limit thermostat will be heated by the standing burner flame and open to de-energize the gas valve solenoid, and shut off the gas flow to the burner.

The temperature transducer is protected against failure by the micro-computer system. Should the transducer fail, be removed from its holder, or be subject to short or broken wire, the P. C. mounted relay will become de-energized and shut power to the gas valve and motor relays. Should this system fail, the manual reset thermostat will open when its higher temperature (approx. 225<sup>o</sup>) is reached. It will remain open until manually reset.



## OPERATIONAL SEQUENCE MODEL ADE-100

### PRESTART CONDITIONS,

Same as ADG-100

### OPERATION

Depressing the "Enter/Start" button as a final entry of the prestart condition, forwards a command signal on the P.C. board. This permits the motor relay contactors to be energized and starts the motors. At the same time, a signal is also sent energizing the coil on the heat circuit relay. The air flow switch closes soon after the blower motor is started and the coil of the oven contactors are energized to supply power to the oven elements.

When the temperature at the temperature transducer has risen to the cutoff temperature corresponding to the heat valve entered during the prestart, the heat circuit relay on the control panel opens, the oven contactor coils are de-energized and the oven contactors open to shut off power to the oven elements. After 15 seconds, or approximately 100F, the oven contactor coils are re-energized and power is returned to the oven elements. This cycle continues until the drying time selected or the level of dryness selected has expired.

On the operating panel, the LED display shows the dryer has entered the cooling cycle, and will continue to run for the duration of cooling time entered in the prestart condition, or approximately 5 minutes in the automatic mode.

When the cooling time has expired, the P.C. mounted motor relay is de-energized thus de-energizing the motor contactor relay. The display on the operators panel shows "CCOO" (Cycle Complete - Zero Time Remaining).

Opening the door at the end of the cycle will remove "CCOO" from the display and return "FILL" or F D . If the door is opened during the cycle, the machine will turn off completely. The cycle may be continued by closing the door and re-pushing the "Enter/Start" button.

The motor is protected by an internal overload thermostat. If the motor overheats, it will stop. The power to the oven will be shut off within a few seconds when the air switch opens. The dryer can be restarted after the overload motor has sufficiently cooled. If the air switch fails to open, the high limit thermostat will be heated by the elements and open to de-energize the oven contactor coils and shut off power to the elements.

The temperature transducer is protected against failure by the micro-computer system. Should the transducer fail, be removed from its holder, or be subject to short or broken wire, the P.C. mounted relays will become de-energized and shut power to the gas valve and motor relay. Should this system fail, the manual reset thermostat will open when its higher temperature is reached. It will remain open until manually reset.

## OPERATIONAL SEQUENCE MODEL ADS-100

### PRESTART CONDITIONS,

Same as ADG-100

### OPERATION

Depressing the "Enter/Start" button as a final entry of the prestart condition forwards a command signal from the computer chip energizing the motor control relay(s), and starts the motors. At the same time, a signal is also sent energizing the coil of the heat circuit relay, and the coil on the steam valve solenoid is energized to open the valve to let steam flow to the heat exchangers.

When temperature at the temperature transducer has risen to the cut off temperature corresponding to the heat valve entered during the prestart, the heat circuit relay on the control panel opens, the steam valve closes and shuts off steam to the heat exchangers. After 15 seconds, or approximately 100°F, the steam valve is energized to open the valve to let the steam flow to the heat exchanger. This cycle continues until the drying time selected or the level of dryness selected has expired.

On the operating panel, the LED display shows the dryer has entered the cooling cycle, and will continue to run for the duration of the cooling time entered in the prestart condition, or approximately 5 minutes in the automatic mode.

When the cooling time has expired, the motor relay(s) are de-energized. The display on the operators panel shows "CCOO" (Cycle Complete - Zero Time Remaining).

Opening the door at the end of the cycle will remove "CCOO" from the display and return "FILL" of F D. If the door is opened during the cycle, the machine will turn off completely. The cycle may be continued by closing the door and pressing the "Enter/Start" button.

The motors are protected by an internal overload thermostat. If the motor(s) overheat they will stop. The steam valve remains open, but without air circulation, the heat is not passed to the load. The dryer can be re-started after the motor has sufficiently cooled.

The temperature transducer is protected against failure by the microcomputer system. Should the transducer fail, be removed from its holder, or be subject to short or broken wire, the P.C. mounted relays will become de-energized, and shut power to the gas valve and motor relays. Should this system fail, the manual reset thermostat will open when its higher temperature is reached. It will remain open until manually reset.



## OPERATING INSTRUCTIONS

All dryers are thoroughly tested and inspected before leaving our plant. However, a pre-operational test should be taken before the dryer is used. It is possible that adjustments have changed in transit.

### IMPORTANT

The tumbler of the dryer is treated with a protective coating. We suggest tumbling old clothes using a mild detergent to remove this coating.

Reversing Timer Control: Adjust dip switches to assure that the tumbler stops completely between reversing cycles and remains stopped for at least two seconds.

### HOW TO OPERATE THE DRYER

- A. Read the danger warning label affixed to the main door.
- B. Put the clothes in the dryer making certain that the weight of the clothes does not exceed one hundred pounds when dry.
- C. Make certain that the main door is closed all the way; otherwise, the dryer will not start.
  1. If Auto only dryer, display reads F D .
    - a. Load fabric by depressing corresponding button (i.e. 1-9).
    - b. Load dryers by depressing corresponding button (i.e. 1 (less dry) - 9 (more dry) ).
    - c. Depress "Enter/Start" button.
  2. If Auto/Manual dryer, display shows "FILL".

Auto selected - see above

Manual selected as follows:

    - a. Load drying time by depressing corresponding buttons (i.e. 1 minute - 99 minutes).
    - b. Depress "Enter/Start" button.
    - c. Load cooling time by depressing corresponding buttons (i.e. 1 minute - 99 minutes).
    - d. Depress "Enter/Start" button.
    - e. Load fabric by depressing corresponding button (i.e. 1-9).
    - f. Depress "Enter/Start" button.
    - g. The dryer will now start. The LED display will show cycle and drying time. When the drying cycle is complete the controller will change to cooling time, indicated by the first two LED digets displaying CL, and will display total elapsed time from start.
    - h. When the machine stops, remove the garments immediately. Then hang or fold to reduce wrinkling.
    - i. If for some reason the tumbler or any other piece of equipment on this dryer does not function properly, consult the Trouble Chart in Section VIII of this manual.

## MAINTENANCE

### CLEANING

Be sure the snap action thermostat is kept free from lint accumulation. Clean the lint from the bottom of the lint chamber and from the lint screen a minimum of once a week. These cleaning suggestions are important for efficient operation.

### BELT ADJUSTMENT

Should be done periodically.

### LUBRICATION

The bearings are prelubricated with the proper amount of high quality grease. Though greasing interval depends on quality of grease and operating conditions of the bearings, we suggest you grease the bearings monthly. See the instructions printed on the motor back plate for lubrication.

### DOOR SWITCH

Periodically check door switch, located behind lower front panel for lint buildup. Switch body can be cleaned by opening lint door and reaching up behind front panel. Shut electrical power to dryer OFF before cleaning switch.



SECTION VIII  
SERVICING  
ELECTRICAL CHARACTERISTICS

Note: This section refers to the characteristics and features of the Phase I and Phase II computer controls. Phase I Systems were equipped on dryers manufactured prior to June 1, 1982, and have six dip switches located on the rear of the board. Phase II Systems are equipped on dryers manufactured after June 1, 1982, and have eight dip switches.

TEMPERATURE TRANSDUCER. (Temperature sensor) Temperature is measured by a thermal transducer. Accuracy is  $+10^{\circ}$  F the value set at the dip switches for coin operated or via the keyboard on standard machines.

DOOR SWITCH. The door switch is a special double pole switch. One set of contacts (gold color) must be connected to the yellow wires leading to it. The other set of contacts are silver color and must be connected to the gray colored wires only.

DISPLAY LED The display is a four digit, seven segment red LED display. On the Phase I Display, the first decimal point on the left indicates the heat circuit is on. The second point indicates the motor circuit is operating. On reversing dryers, the third decimal point light indicates the tumbler is rotating in the forward direction.

On the Phase II Display, the first decimal point on the right indicates the motor circuit is operating. The second decimal point indicates the heat circuit is on. The third and fourth decimal points are for reversing dryers. The third dot indicates the tumbler is rotating in the reverse direction. The fourth dot indicates the tumbler rotating forward.

DIP SWITCH ASSEMBLY The dip switch assembly on the Phase I System is a six position SPST switch mounted on the rear of the controller. It is used to set the following.

	OPEN	CLOSED
No. 1	--	Reverse/No Reverse Selectability
No. 2	--	Add 4 Seconds Rev. Tumbler Stop Time
No. 3	--	Add 8 Seconds Rev. Tumbler Stop Time
No. 4	--	Temperature Display
No. 5	Auto/Manual	Auto Only
No. 6	50 HZ	60 HZ

The dip switch assembly on the Phase II System is an eight position SPST switch mounted on the rear of the controller. It is used to set the following.

	OPEN	CLOSED
No. 1	--	Reverse/No Reverse Selectability
No. 2	Add 4 Seconds Rev. Stop	--
No. 3	Add 8 Seconds Rev. Stop	--
No. 4	--	Display Temperature
No. 5	Auto/Manual	Auto Only
No. 6	Display Degrees F <sup>o</sup>	Display Degrees C <sup>o</sup>
No. 7	1 Reverse Per Minute	2 Reverses Per Minute
No. 8	Auto Dryness X 3	Auto Dryness X 1

50 OR 60 HZ. Phase I - For 50 HZ, open dip switch #6. For 60 HZ, close switch #6.  
Phase II - No dip switch change is required.

REVERSING DRYERS Dryers equipped with reversing action are available in two forms. The first is a continuous reversing, the other offers the operator the choice of whether reversing action is desired or not. On the reversing selectable dryer, the letters "SR " appear in the display as the final data entry step. If reversing action is desired, pressing "ENTER/START" starts the dryer in the reversing mode; pressing "O" starts dryer operating in a forward rotation only.

The tumbler stop time between rotation is preset at the factory. However, the tumbler should come to a complete stop (with a full load of clothes) between rotating directional changes. If it does not, additional stop time is required. This is accomplished through dip switches #2 and #3. When using the Phase I System, with both switches in the open position, six seconds of stop time is provided. Closing either switch, or both, provides additional time for a combination of 6, 10, 14, or 18 second stop time. When using Phase II, Switch Nos. 2 and 3 in the closed position, 6 second stop time is provided. Opening either switch, or both, provides additional stop time.

Pin No. 9 is for the forward rotation contactor.  
Pin No. 8 is for the reverse rotation contactor.  
Pine No. 15 is for the impelling contactor.

REVERSES PER MINUTE (Phase II Only) On dryers equipped with reversing action, the computer can be set for the number of reverses per minute desired. By opening dip switch number 7, the dryer will change tumbler direction once per minute. Closing switch number 7, reverses the direction twice per minute.

REVERSING SELECTABILITY For reversing dryers with "Reverse/No Reverse" selectability, display shows "SR\_\_" (Select Reversing Action) as the final command during data entry.

- A. Press "Enter/Start" if reversing action is desired; or
- B. Press "O" for nonreversing. Machine will start the cycle.

Opening Dip Switch Number 1, places the dryer in the reversing selectability mode.

AUTO CYCLE RANGE TRIPLER. (Phase II Only) In the event that a dryness level greater than 9 is required, opening Dip Switch Number 8 triples the dryness level range, increasing the range total to 27.

TEMPERATURE DISPLAY The displaying of operating temperature in the dryer through the LEDS is available to the service technician. Program dryer into a normal drying cycle and start. While the dryer is running, close Dip Switch Number 4. Operating temperature can now be viewed through the display. On Phase II Computer panels, the temperature can be viewed in either Farenheit or Centigrade. Dip Switch Number 6 in the open position displays temperature in Farenheit, closed displays temperature in centigrade.

### DISPLAY CODES

- FILL - Empty machine prior to data entry (AUTO/MANUAL dryer)
- F\_\_D\_\_ - Display prior to data entry when auto cycle is selected or indicates empty machine for auto only machine.
- Ld - Load drying time (MANUAL mode)
- Lc - Load cooling time (MANUAL mode)
- F - Fabric selection (MANUAL mode)
- Sr - Select reversing (reversing dryers with REVERSE/NO REVERSE selectability)
- Dr - Machine is operating in drying mode.
- C1 - Machine is operating in cool down mode.
- CC - Cycle complete, dryer has finished a complete cycle and shut off.
- DSFL - Dryer Sensor Circuit Failure. Most likely caused by loose wiring connection at sensor bracket (Page 9-7, Figure 4).
  
- DOOR - Door Switch Circuit Failure. Check wiring connections to door switch. It also is displayed if attempt is made to start dryer with door open.



## SECTION VIII

### SERVICING

GENERAL: All electrical service should be made with POWER-OFF. Any service tests requiring POWER-ON should be made only by fully qualified electricians.

MAIN DOOR SWITCH: This switch interrupts all power to the dryer when door is opened. It is located in the lower right hand corner of the front panel. (page 9-4, Figure 13).

#### TO REPLACE OR ADJUST:

- a. Turn power off.
- b. Open lint door to gain access to switch behind front panel.
- c. Open main door and loosen hex nut holding switch to front panel.
- d. Disconnect leads to switch.
- e. Replace by reversing the procedure.

TUMBLER MOTOR RELAY: This relay controls the power to operate the tumbler motor. It is located in the enclosure at the rear of the dryer. (Page 9-12, Figure 4). Two relays operate alternately to reverse the motor rotation on dryers equipped with this option.

#### TO REPLACE:

- a. Turn power off.
- b. Remove screws holding reset panel to dryer and remove panel.
- c. Disconnect harness from relay panel and remove bolts holding relay panel to rear wall of enclosure.
- d. Remove relay panel.
- e. Disconnect leads to relay and remove relay from panel.
- f. Replace by reversing the procedure. Connect wiring to relay as shown on schematic located inside the enclosure.

BLOWER MOTOR RELAY: This relay controls the power to operate the blower motor. It is located in the enclosure at the rear of the dryer (Page 9-12, Figure 9, and Page 9-13, Figure 6).

#### TO REPLACE:

- a. Turn power off.
- b. Remove screws holding reset panel to dryer and remove panel.
- c. Disconnect harness from relay panel and remove bolts holding relay panel to rear wall of enclosure.
- d. Remove relay panel.
- e. Disconnect leads to relay and remove relay from panel.
- f. Replace by reversing the procedure. Connect wiring to relay as shown on schematic located inside the enclosure.

MAIN DOOR: (Page 9-4, Figure 10)

1. To replace main door
  - a. Remove screws holding main door to the main door hinge block.
  - b. Replace with new door.
2. To replace door glass gasket (optional)
  - a. Press narrow slot of door gasket on to edge of door panel, cut out starting at the bottom.
3. To replace main door glass
  - a. Start at the seam of door gasket at bottom of door, and spread the gasket with a blunt blade made of plexiglass or wood, and insert the edge of the glass. Work around the gasket with the tool just ahead of the glass.
4. To replace door handle magnets
  - a. Remove flat head bolt from side of door handle.
  - b. Remove and replace magnets.

MANUAL RESET THERMOSTAT: This thermostat will open the heating unit circuit if an excessive temperature occurs. The motors will run, but dryer will not heat. A short cool-down period may be necessary before the push button can be reset. Corrective action should be taken before attempting to restart the dryer. The manual reset is located in the box housing adjacent to the lint trap in the lint chamber. (Page 9-7, Figure 5).

TO REPLACE MANUAL RESET:

- a. Turn power off.
- b. Loosen screws securing bracket to dryer.
- c. Remove bracket.
- d. Remove screws securing manual reset to bracket.
- e. Remove wires to manual reset.
- f. Replace manual reset, reverse procedure for installing.

TO REPLACE TUMBLER OR TUMBLER SUPPORT:

1. Remove lint door (Page 9-5, Figure 1)
  - a. Open lint door and lift out of slots in base.
2. Open control door (Page 9-3, Figure 1)
  - a. Remove screws and swing door up.
  - b. Disconnect control door support rod from its holder, and insert rod end into hole in control door stiffener.

3. Remove front panel (Page 9-4, Figure 1)
    - a. Disconnect wires from main door switch.
    - b. Remove front panel screws and grommets.
    - c. Pull bottom edge of panel away from dryer and remove panel.
  4. Remove backguard (Page 9-21, Figure 1)
    - a. Remove nuts and washers from rear of dryer. Remove backguard.
  5. Remove pulley from tumbler shaft (Page 9-8, Figure 15)
    - a. Remove belts from pulley.
    - b. Remove bolts holding pulley to bushing. Thread bolts into unused hole, and tighten to free pulley from bushing. Remove set bolts.
    - c. Remove pulley and key from shaft.
    - d. Tighten bolts evenly when replacing pulley and bushing.
  6. Remove tumbler assembly and tumbler shaft bearing support (Page 9-6, Figure 3).
    - a. Loosen set screws on both bearings.(Page 9-8, Figure 5)
    - b. If tumbler cannot be removed easily, hold a block of wood against end of shaft and strike with a mallet to move shaft past burrs made by set screws. DO NOT STRIKE END OF SHAFT WITH MALLET DIRECTLY.
  7. Remove tumbler from tumbler support (Page 9-6, Figure 3)
    - a. Remove screw from center tumbler back wall. (Page 9-6, Figure 4)
    - b. Remove tie rods holding tumbler to the tumbler support. Retain shims for reassembly.
    - c. To replace, reverse the procedure.
- NOTE: Reinstall shims as necessary to align tumbler axis with support shaft.

#### TO REPLACE PULLEYS:

1. Tumbler pulley (Page 9-8, Figure 15)
  - a. Replace pulley by reversing removal procedure (Paragraph 5 above).
2. Motor and idler pulleys (Page 9-9, Figures 16 & 18; Page 9-10, Figure 11).
  - a. Replace pulleys by reversing removal procedure (steps shows in Paragraph 5 above).

#### TO REPLACE BEARING:

1. Tumbler bearings (Page 9-8, Figure 5)
  - a. Remove belts and tumbler pulley.



- b. Loosen bearing at set screws.
- c. Back off lateral alignment screws (Figure 9).
- d. Remove bolts from pillow block(s).
- e. Remove bearing(s).
- f. Reverse the removal procedure for re-installing (Align tumbler horizontally with dryer wrapper cavity before fully tightening the rear bearing bolts using the lateral alignment screws. Align tumbler vertically as required using the vertical alignment screws after fully tightening all bearing bolts).

2. Idler shaft bearings (Page 9-9, Figure 5)

Forward bearing (Nearest rear panel)

- a. Remove belts.
- b. Loosen set screws on both bearings.
- c. Remove bolts from pillow block.
- d. Pull idler shaft (with pulleys and forward bearing attached) to rear through rear idler bearing.
- e. Remove end retaining ring and remove bearing from end of idler shaft.
- f. Replace by reversing the procedure.
- g. Align idler pulley with tumbler pulley above before tightening bolts.

Rear bearing (Nearest pulleys)

- a. Remove bolts.
- b. Loosen set screws on both bearings.
- c. Remove bolts from both pillow blocks.
- d. Remove retaining rings and remove both bearings from idler shaft.
- e. Replace by reversing the procedure.
- f. Align idler pulleys with tumbler pulley above before tightening bolts.

**MOTORS:** Causes of possible overheating: overloading tumbler, air circulation around motor, drive belts too taut, lint blocking motor vents, bearing failure, or low voltage supply (Page 9-10, Figure 13 and Page 9-11, Figure 15).

1. To replace drive motor

- a. Turn power off.
- b. Remove drive belts.
- c. Disconnect wiring harness from motor.
- d. Remove bolts holding motor to mount and replace with new motor. Do not tighten bolts.
- e. Remove pulley from old motor and install on new motor.
- f. Align motor pulley with idler pulley and align motor shaft with idler shaft and tighten bolts.
- g. Replace belts and adjust belt tension by loosening motor bracket mounting bolts and forcing bracket downwards. Tighten bolts.

2. To replace impeller motor

- a. Turn power off.
- b. Disconnect motor harness from motor.
- c. Remove nuts and washers holding the motor mount to the rear of the dryer and pull motor mount away.
- d. Remove the two L.H. nuts on the motor shaft retaining the impeller and work the impeller free from the motor shaft by means of a gear puller to prevent damage to the motor shaft.
- e. Remove bolts holding motor to motor mount and replace with new motor.
- f. Align motor with impeller face in plane with the motor mount at no less than 3/16" clearance.
- g. Reinstall the motor mount, and reconnect motor harness.

IMPELLER: The impeller is fastened to the motor shaft and should need no replacement for the life of the dryer, (Page 9-11, Figure 10).

V-BELTS: The V-belts should have a tension that permits approximately 1/2" of displacement under a normal thumb pressure exerted at mid span. If too loose, belts will slip; if too tight, belts will cause undue wear of the bearings. Misaligned pulleys will cause excessive belt wear. Belts should be periodically cleaned and treated with a proper conditioner for increased life.

1. Belt tension adjustment - Tumbler to idler (See page 9-9).

- a. Back off nuts (No. 14) on idler adjustment bolts.
- b. Tighten belts by turning both bolts (No. 11) evenly clockwise. (Turn counter-clockwise to loosen belts).
- c. Check vertical plane of idler pulleys for parallel alignment with tumbler pulleys and retighten bottom nuts.

2. Belt tension adjustment - Idler to motor (See page 9-10).

- a. Loosen nuts (No. 18) on bolts holding motor mount to dryer frame.
- b. Raise or lower the motor mount for proper belt tension.
- c. Check motor shaft and pulley for parallel alignment with idler shaft and pulleys.
- d. Retighten bolts.

ALIGNMENT OF TUMBLER:

1. Vertical alignment of tumbler (Page 9-8)

- a. Loosen top bolts (No. 9) on sides of bearing mount.
- b. Back off the lock nuts (No. 7) on the adjustment bolts (No. 6).
- c. Tighten the adjustment bolts evenly to raise the basket. (Back off the bolts to lower basket)
- c. Retighten the lock nuts and retighten bolts on sides of bearing mount.

2. Lateral alignment of tumbler (Page 9-8)
  - a. Loosen bolts (No. 1) holding rearmost bearing pillow block to bearing mount.
  - b. Back off lock nuts (No. 12) on the two adjustment bolts (No. 9) on the side of the bearing mount.
  - c. Simultaneously tighten and loosen the adjustment bolts to center basket in the wrapper cavity.
  - d. Tighten lock nuts on adjustment bolts and bolts holding the bearing pillow block to bearing mount.

**HIGH LIMIT SNAP ACTION THERMOSTAT:** This thermostat serves as a back up to the sail switch to close the gas valve should the sail switch fail to open in the event of a reduced air flow through the burner. It is located on the left side of the burner box on gas dryers, and on the right side of the oven on electric dryers.

1. To replace
  - a. Turn off power.
  - b. Disconnect wire leads.
  - c. Remove mounting screws and remove thermostat.
  - d. Replace by reversing the procedure.

**SAIL SWITCH:** The sail switch is located on the right side of the burner on gas and electric models. When the dryer is operating with proper air flow, the sail is drawn in to permit gas or electric power to flow. If an improper air flow occurs the sail will release and the gas or electric power will be turned off.

1. To replace
  - a. Turn power off.
  - b. Remove screws holding sail switch box to oven or burner.
  - c. Disconnect leads from sail switch.
  - d. Remove screws holding sail switch mounting bracket to sail switch box.
  - e. Remove screws holding sail switch to sail switch mounting bracket.
  - f. Replace and reverse the removal procedure.
2. To adjust
  - a. Bend actuator arm as required while listening for switch to close with sail against burner box wall and open when sail hangs freely.

**CAUTION:** Be sure switch opens to shut off gas with loading door open and the machine operating. (Depress and hold door switch to operate machine)

**MAIN GAS VALVE SOLENOID:** The solenoid is actuated by the micro-processor to turn gas on or off. The solenoid may not necessarily be defective if main burners do not light. If it is suspected of being defective, check it with



a circuit test lamp or connect it directly to the line voltage terminals L1 and L2 on the EQSO board. (Page 9-2, Figure 13) If the solenoid fails to operate on line voltage, check wiring circuit.

1. To replace
  - a. Turn power and gas off.
  - b. Disconnect leads from terminal board and remove from valve and controls enclosure.
  - c. Remove screws holding solenoid to valve body.
  - d. Install new solenoid per manufacturer's instructions provided with kit. Reverse removal procedures.

**PRESSURE REGULATOR:** The gas pressure regulator is an integral part of the gas valve. It is normally set at 4 inches of water column at the factory. It can be adjusted by removing the cap from the post, and inserting a screw driver. Clockwise rotation will raise the pressure and vice-versa. It should not be adjusted to less than 3 inches nor above 4 1/2 inches of water column. A common U tube manometer or pressure gauge (P/N 122804 should be used when making adjustments. Remove the plug on the side of the valve body and attach the manometer tube equipped with a 1/8 NPT tube fitting).

**GLO BAR BURNER ASSEMBLY:** The burner should need no attention during the life of the dryer. If the dryer is converted to L.P. gas, the main burner orifices must be changed. See table for proper orifice sizes.

1. To replace main burner orifices
  - a. Turn power and gas off.
  - b. Remove screws molding gas valve and manifold assembly to burner box.
  - c. Unscrew (4) burner orifices.
  - d. Replace by reversing the procedure.

**ELECTRIC HEATING ELEMENTS:** Eighteen heating elements consisting of twelve 3000 watt and six 4000 watt output develop 60 kilowatts at 208/240 volts or 416/480 volts. They are rack mounted in five adjacent bays with three or four elements in each bay to provide a near even distribution of heat to the tumbler. The elements can be individually replaced. Defective elements should be replaced only with an element of identical voltage and wattage rating. (Page 9-16, Figure 12)

1. To replace
  - a. Turn power off.
  - b. Remove screws from terminal housing cover and remove cover.
  - c. Remove electrical connecting hardware and insulation from screw terminals of element.
  - d. Remove access cover screws and remove cover.
  - e. Withdraw element from side rail supports.
  - f. Replace element and reverse the procedure.

OVEN RELAY CONTACTOR(S): The contactor(s) control the power supply to the elements. They are located in the power distribution box (Page 9-18, Figure 6).

1. To replace contactors

- a. Remove screws from distribution box cover and remove cover.
- b. Loosen cable connector screws and remove cables.
- c. Remove wire leads from auxiliary power connections and relay coil.
- d. Remove hardware holding contactor and ground lug to wall.
- e. Replace by reversing the procedure.

AUTOMATIC STEAM VALVE: This valve controls the flow of steam to the heat exchangers (Page 9-20, Figure 8).

TO REPLACE SOLENOID:

- a. Remove operator's control panel and disconnect solenoid wire leads from terminal board.
- b. Remove snap ring from valve solenoid cover and remove solenoid housing from valve.
- c. Separate solenoid by pulling wire leads out of BX conduit until wire splices are exposed.
- d. Cut and remove solenoid with its leads and splices.
- e. Strip wire ends and resplice to new solenoid leads.
- f. Replace by reversing the procedure.

HEAT EXCHANGER: Two heat exchangers are side mounted to a central plenum. They are identical in construction, interchangeable, and easily replaced or repaired. Care should be exercised to avoid stressing the copper construction during installation. Flexible couplings should be provided at inlet and outlets, especially for machines equipped with the reversing tumbler option. Additional installation details are shown on Page 10-7. Together they deliver 356,000 btu/hr. when operating at high pressure (125 p.s.i.) or 235,000 btu/hr. operated at low pressure (15 p.s.i.). The steam supply required is 408 lbs/hr. at high pressure, or 234 lbs/hr. at low pressure. The approximate temperature of the air entering the tumbler is 285°F at high pressure or 200°F at low pressure. The super steam heat exchangers are of similar construction. Together they deliver 535,000 btu/hr. when operated at high pressure (125 p.s.i.) or 335,000 btu/hr. operated at low pressure (15 p.s.i.). Corresponding steam supply requirements and tumbler entrance air temperatures are 616 lbs/hr. and 265°F at high pressure, or 358 lbs/hr. and 197°F at low pressure. The standard model is equipped with a 1 HP motor drive blower and requires an air supply of 1,500 cubic feet per minute. The super steam model is equipped with a 3 HP motor and requires an air supply of 2,500 cubic feet per minute.

1. To replace heat exchanger

- a. Shut off steam supply.
- b. Start dryer to relieve inlet steam pressure.
- c. Turn power off.

- d. Remove inlet manifold plug.
- e. Disconnect inlet and outlet unions to defective unit.
- f. Remove attaching hardware to plenum.
- g. Remove heat exchanger.
- h. Disassemble inlet and outlet nipples and uniforms from heat exchanger and reinstall on new heat exchanger.
- i. Replace by reversing procedure. Make sure steam coils tilt down to the rear of the dryer.

Use 6% silver solder to repair minor leaks at fittings or U tube joints. Leaks in walls of tubes should not be repaired, especially on heat exchangers to be operated at high pressure. Repairs should be made only by qualified technicians.

COMPUTER BOARD: (Page 9-2, figure 4) This unit is used to control all operating functions of the dryer. The computer is capable of diagnosing problems. (See trouble chart)

1. To replace computer board
  - a. Remove green ground wire from rear of computer board.
  - b. Unplug wiring harness.
  - c. Remove flat ribbon connector from keyboard by gently pulling ribbon from socket mounted on computer board.
  - d. Remove four mounting nuts.
  - e. Install new board in reverse procedure.

TO REPLACE TEMPERATURE SENSOR: (Page 9-7, figure 6)

- a. Turn off power.
- b. Gently lift temperature sensor from white nylon socket.
- c. Insert new sensor into socket housing, being certain pin location of sensor matches socket.

## TROUBLE CHART

This trouble chart will help to isolate the most probable component(s) associated with the difficulty described. The experienced technician realizes, however, that a loose connection or broken or shorted wire may be at fault where electrical components are concerned...not necessarily the suspect component itself.

ELECTRICAL PARTS SHOULD ALWAYS BE CHECKED FOR FAILURE BEFORE BEING RETURNED TO FACTORY.

This chart should not be misconstrued as a devise for use by an untrained person toward making repairs. Only properly licensed technicians should service the equipment.

Observe all safety precautions displayed on the equipment or specified in this manual before and while making repairs.

### TROUBLE

### PROBABLE CAUSE AND REMEDY

- |  |  |
|--|--|
| A. The dryer won't start.  | 1. Open fuse box or circuit breaker switch, or blown fuses.<br>2. Improper power supply voltage.   |
| B. The tumbler motor runs, but the tumbler won't revolve. The heating unit is operating. | 1. Broken, damaged or loose V-belts.<br>2. Belts are contaminated (oil, grease, etc.)  |
| C. The dryer starts, but the heating unit is not operating.                              | 1. The manual reset thermostat has tripped or is defective.<br>2. The lint door is open.<br>3. The sail switch is out of adjustment or is defective.<br>4. A defective control relay.<br>5. A defective relay contactor coil (416/480V electric dryers).<br>6. A defective hi-limit thermostat.<br>7. A defective gas or steam valve solenoid. |
| D. The dryer operates, but is taking too long to dry load.                               | 1. An inadequate exhaust system.<br>2. Insufficient make up air openings.<br>3. One of the relay contactor coils is defective (208/240V electric dryers).<br>4. Housekeeping. Clean lint drawer and check exhaust ducts for blockage.<br>5. Make up air openings are closed.<br>6. Extractors are not performing properly.                     |



## TROUBLE

## PROBABLE CAUSE AND REMEDY

- |   |  |
|---|--|
| E. The dryer won't stop.                                | 7. An exceptionally cold/humid or low barometric pressure atmosphere.    |
| F. The tumbler is not reversing.                        | 8. The supply gas may have a low heating value. Check with gas supplier. |
| G. One of the motors keeps overheating.                 | 1. Defective motor contactor.  |
|   | 1. Defective micro processor.  |
|   | 2. Defective reversing contactor coil.                                   |
| H. An excessive noise or vibration in the dryer.        | 1. Either an exceptionally low or high voltage supply.                   |
|   | 2. Motor bearing failure.  |
|   | 3. Motor overload control is defective.                                  |
|   | 4. An idler bearing or tumbler drive bearing failure.                    |
|   | 5. Motor air vents are blocked with lint.                                |
|   | 6. Defective motor.  |
|   | 7. Insufficient make up air.   |
| I. The dryer is cycling on the high limit switch.       | 1. The tumbler is out of adjustment.                                     |
|   | 2. The V-belts are too loose or too tight.                               |
|   | 3. Loose tumbler rod.  |
|   | 4. Tumbler bearing or idler bearing failure.                             |
|   | 5. Tumbler adjustment bolts are loose.                                   |
|   | 6. Loose motor mount.  |
|   | 7. Loose hardware.   |
| J. The impeller motor or the drive motor won't operate. | 1. Blower motor failure.   |
|   | 2. An insufficient air supply.   |
|   | 3. Lint trap (basket) needs cleaning.                                    |
|   | 4. Insufficient exhaust system size or duct restriction.                 |
|   | 5. Lint door open.   |
| K. Dryer does not start-display door shows "door".      | 1. The motor relay coil is defective.                                    |
|   | 2. A defective motor.  |
|   | 1. Door switch failed-check for continuity with button depressed.        |
|   | 2. Check gray colored wires.   |
|   | 3. Check connectors.   |
|   | 4. Replace door switch   |

## TROUBLE

- L. Display shows "DSFL".
- M. Dryer does not respond to command at keyboard.
- N. Dryer runs, but heat indicating light in L.E.D. does not come on.
- O. Dryer motor starts, but gas valve and glo-bar do not operate.
- P. Dryer motor starts, gas valve's primary coil operates, but glo-bar does not heat up.
- Q. Dryer motor starts, gas valve and glo-bar operate, but gas does not come on.
- R. All components are operating, but gas is not ignited.

## PROBABLE CAUSE AND REMEDY

1. Dryer sensor failed-check if sensor is missing from holder.
  2. Check wires leading to sensor from connector to connector.
  3. Replace temperature sensor.
1. Disconnect power.
  2. Check flexible cable from keyboard to micro control unit.
  3. In automatic mode, the problem may be due to a faulty sensor circuit. Refer to L above.
1. Computer defective.
1. Manual reset thermostat is open reset.
  2. Sail switch is open - readjust.
  3. Hi-limit switch open - remove connectors and shunt. MAKE TEST. Replace switch and reconnect wiring. BE SURE TO RECONNECT WIRES TO SWITCH IF SWITCH IS NOT DEFECTIVE.
  4. No voltage supply to gas valve - open connection. Trace circuit with volt or ohm meter. Repair connection or wire.
1. Broken glo-bar - replace.
  2. Faulty wire connection to either glocoil or IR sensor.
1. Flame switch defective - replace.
  2. Gas valve defective - replace.
  3. Very low pressure - contact local utility.
1. Improper position of glo-bar adjust.
  2. Low gas pressure - check manifold pressure.
  3. Adverse air disturbance around front of burner could cause failure of ignition - determine cause of draft, eliminate it.

## I M P O R T A N T

When ordering parts, specify Dryer Model Number and Serial Number in addition to the Part Number so we can fill your order accurately and promptly.

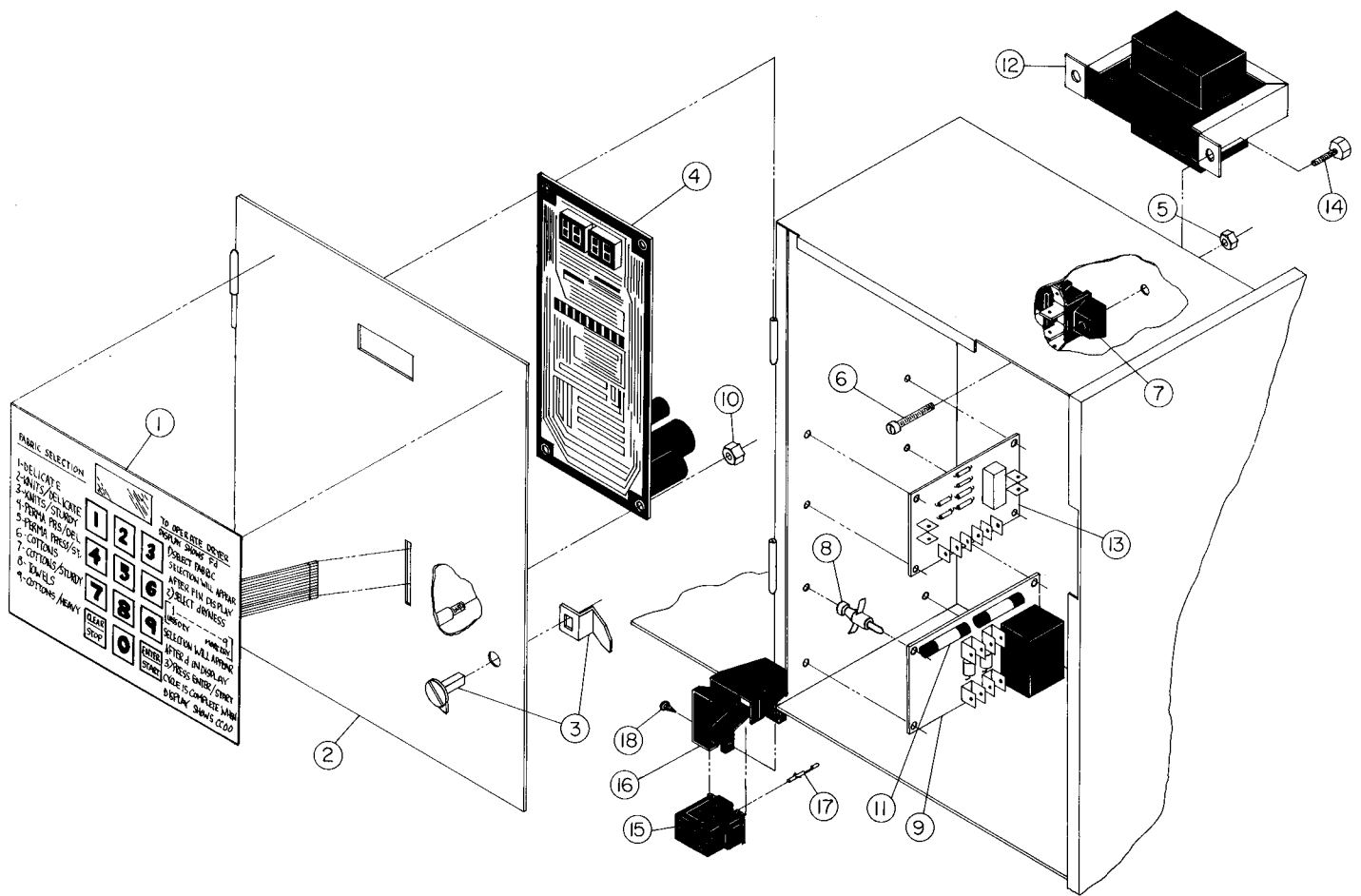
### SECTION IX

#### EQUIPMENT ILLUSTRATIONS & DESCRIPTIONS

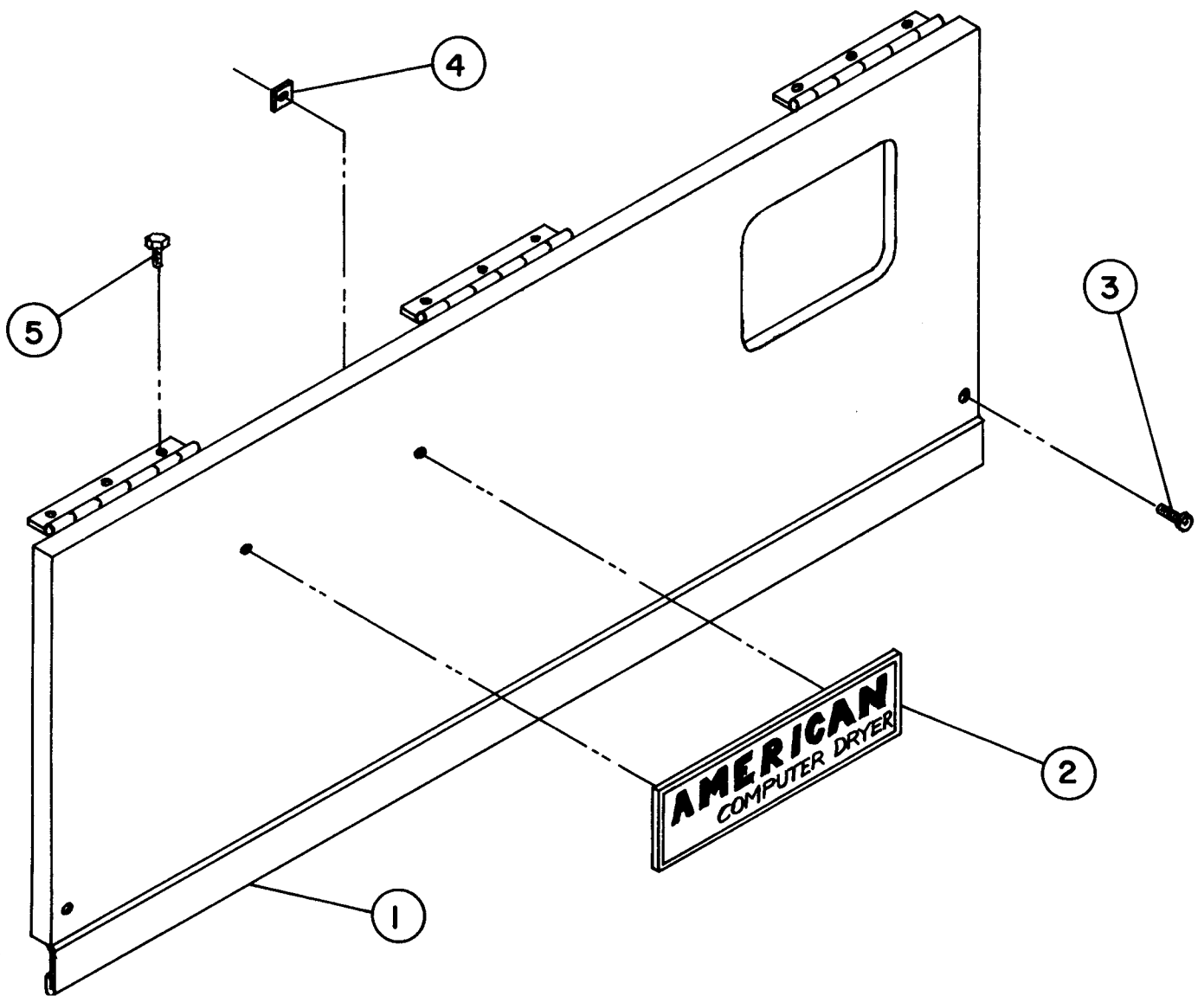
	<u>Page Number</u>
Front Control Box For Microprocessor	9-2
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Front Panel & Main Door Assembly	9-4
Lint Door Assembly	9-5
Tumbler Assembly	9-6
Lint Screen	9-7
Tumbler Bearing Mount Assembly	9-8
Idler Bearing Mount Assembly	9-9
Drive Motor Mount Assembly	9-10
Blower Motor Mount Assembly	9-11
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Motor Relay Box Assembly (Non-Reversing)	9-13
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Steam Coil Assembly	9-20
Back Guard & Heat Reclaimer Assembly	9-21

NOTE: The illustrations on the following pages may not necessarily depict exactly your specific dryer. These illustrations are a composite of the various dryer models. Be sure to check the description of the parts thoroughly before ordering.

REPLACEMENT PARTS ARE AVAILABLE FROM FACTORY

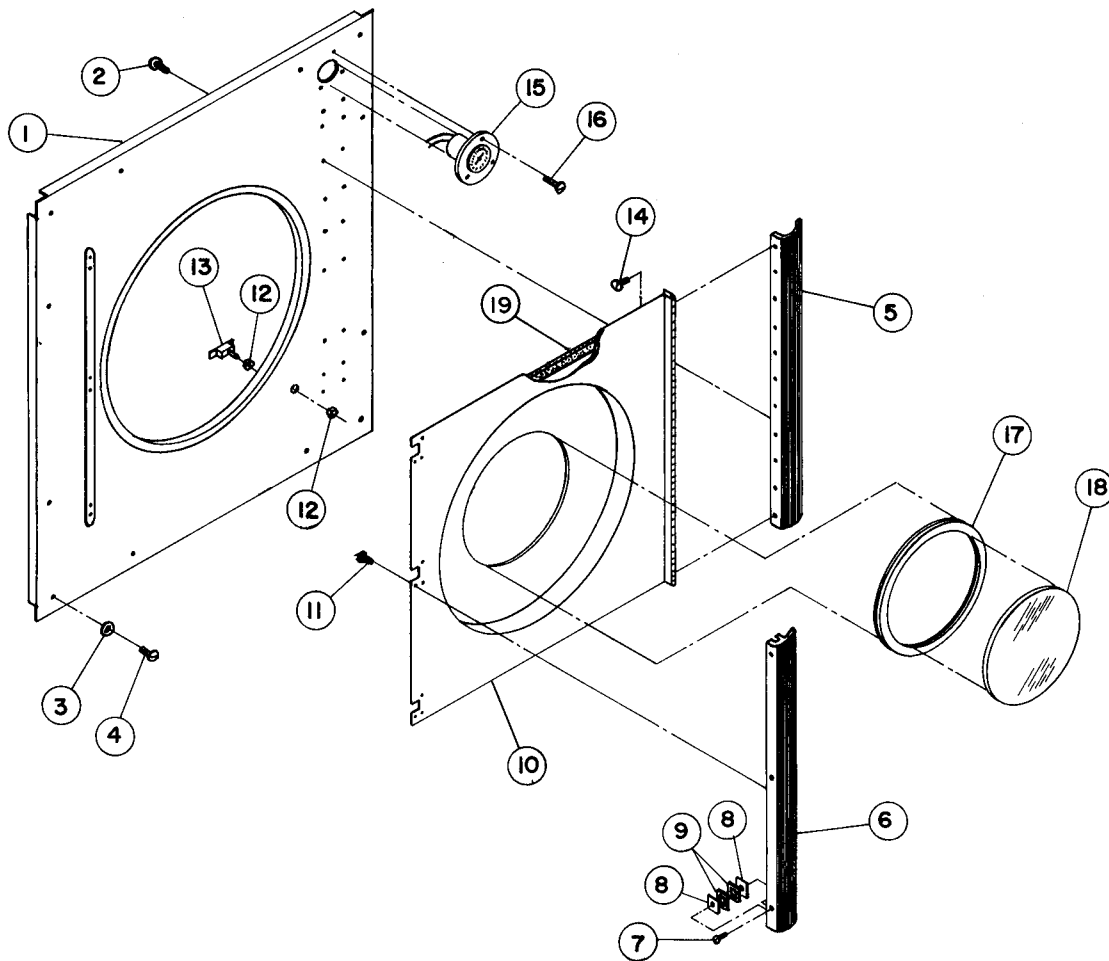


Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	112511	label/keyboard assembly	1	X	X	X
	112501	manual/auto label (w. option)	1	X	X	X
2	305533	control door	1	X	X	X
3	160005	latch fastener	1	X	X	X
4	137051	micro controller (non-reversing dryers)	1	X	X	X
	137052	micro controller (reversing dryers)	1	X	X	X
5	151000	6-32 nut	2	X	X	X
6	150002	6-32 round head mach. screw	2	X	X	X
7	120709	terminal strip	1	X	X	X
8	137013	standoff	8	X	X	X
9	137061	suppressor board less relays (M.P. only)	1	X	X	X
9A	131930	relay 220V (M.P. only)	1	X	X	X
10	152001	8-32 hex nuts	4	X	X	X
11	136052	4 amp fuse (M.P. only)	2	X	X	X
12	132001	GB 208/220V transformer	1	X		
13	140150	diode logic board	1	X		
14	150300	10 x 1/2 hex washer teks	2	X	X	X
15	137020	15 pin connector	1	X	X	X
16	137022	strain relief	1	X	X	X
17	137021	connector socket	15	X	X	X
18	150301	8-18 x 7/16 Phil.Hd tek screw	1	X	X	X

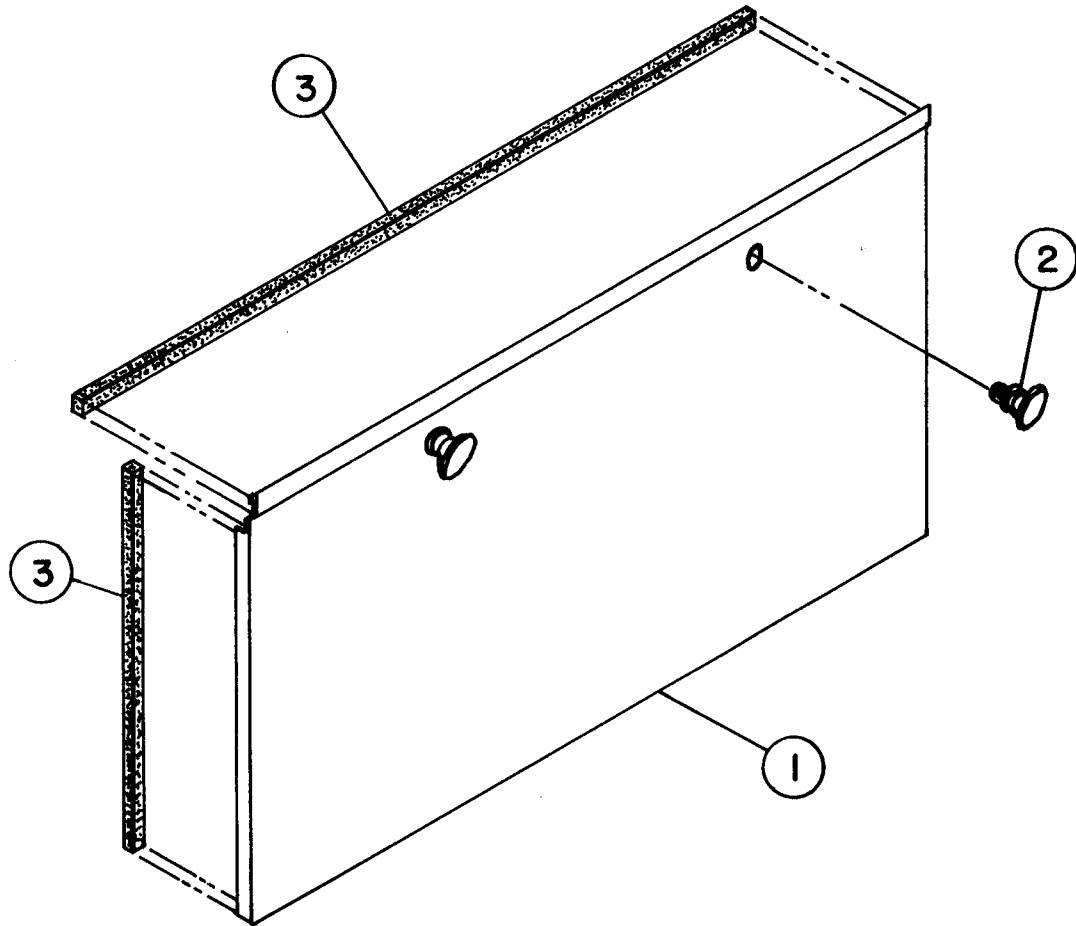


Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	800016	control door	1	x	x	x
2	112302	Computer dryer nameplate	1	x	x	x
3	150206	pan head machine screws	2	x	x	x
4	154002	1/8 push-on fasteners	2	x	x	x
5	150300	10 x 1/2 hex washer teks	9	x	x	x

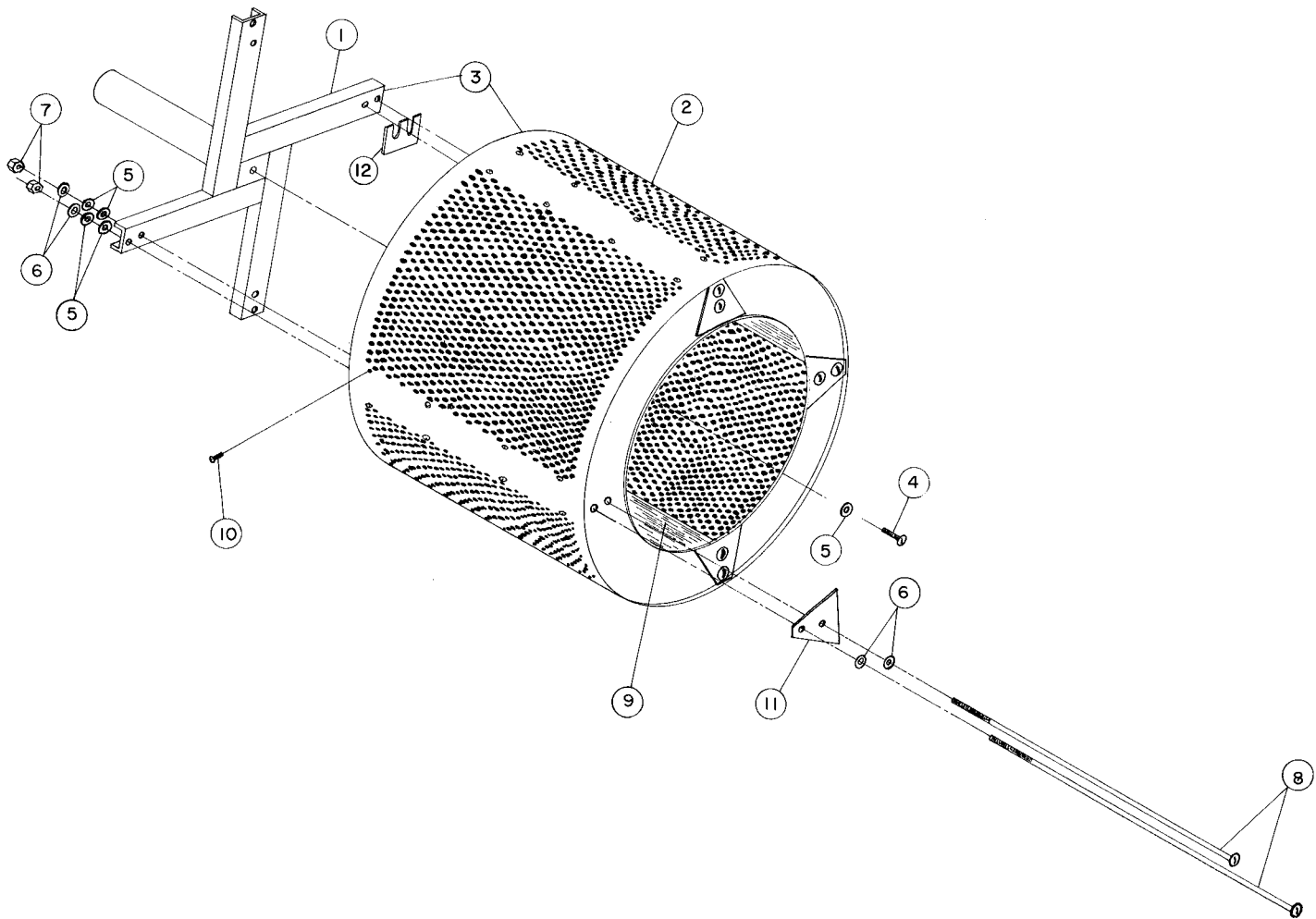




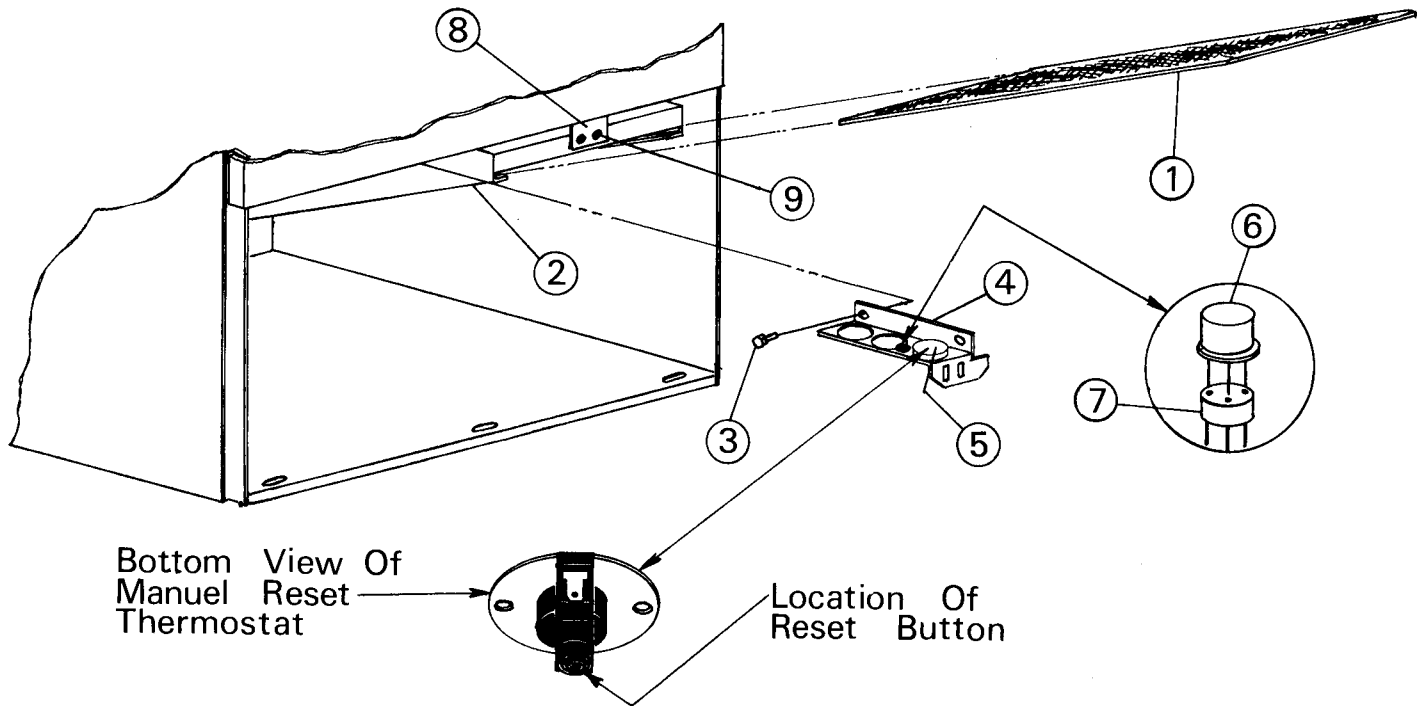
Illus No.	Part No.	Description	Qty.	Model Gas	Utilizing Electric	Part Steam
1	800318	right hand front panel	1	x	x	x
2	150400	10-24 x 1/2 PH taptite	10	x	x	x
3	150700	#8 counter sunk washer	12	x	x	x
4	150304	#8 x 3/4 oval phillip head	12	x	x	x
5	170203	35" hinge block	1	x	x	x
6	170201	35" main door handle	1	x	x	x
7	150401	10-24 x 1 1/4 PH taptite	3	x	x	x
8	306801	magnet keeper	6	x	x	x
9	102100	magnets	6	x	x	x
10	800108	solid main door comp. assy.	1	x	x	x
	800109	solid main door only	1	x	x	x
	800110	main door comp. assy. conv.	1	x	x	x
	800112	main door only conv.	1	x	x	x
11	150400	10-24 x 1/2 PH taptite	9	x	x	x
12	152003	3/8-16 x 1/2 x 1/16 hex switch nut	2	x	x	x
13	137006	door switch MP	1	x	x	x
14	150402	10-24 x 5/8 spec. tr. head	11	x	x	x
15	168202	thermometer dial	1	x	x	x
16	150301	#8-18 x 7/16 PH SDS	3	x	x	x
17	102300	16 1/4 conv. glass gasket	1	x	x	x
18	102200	16 1/4 conv. glass	1	x	x	x
19	117601	door gasket	3	x	x	x



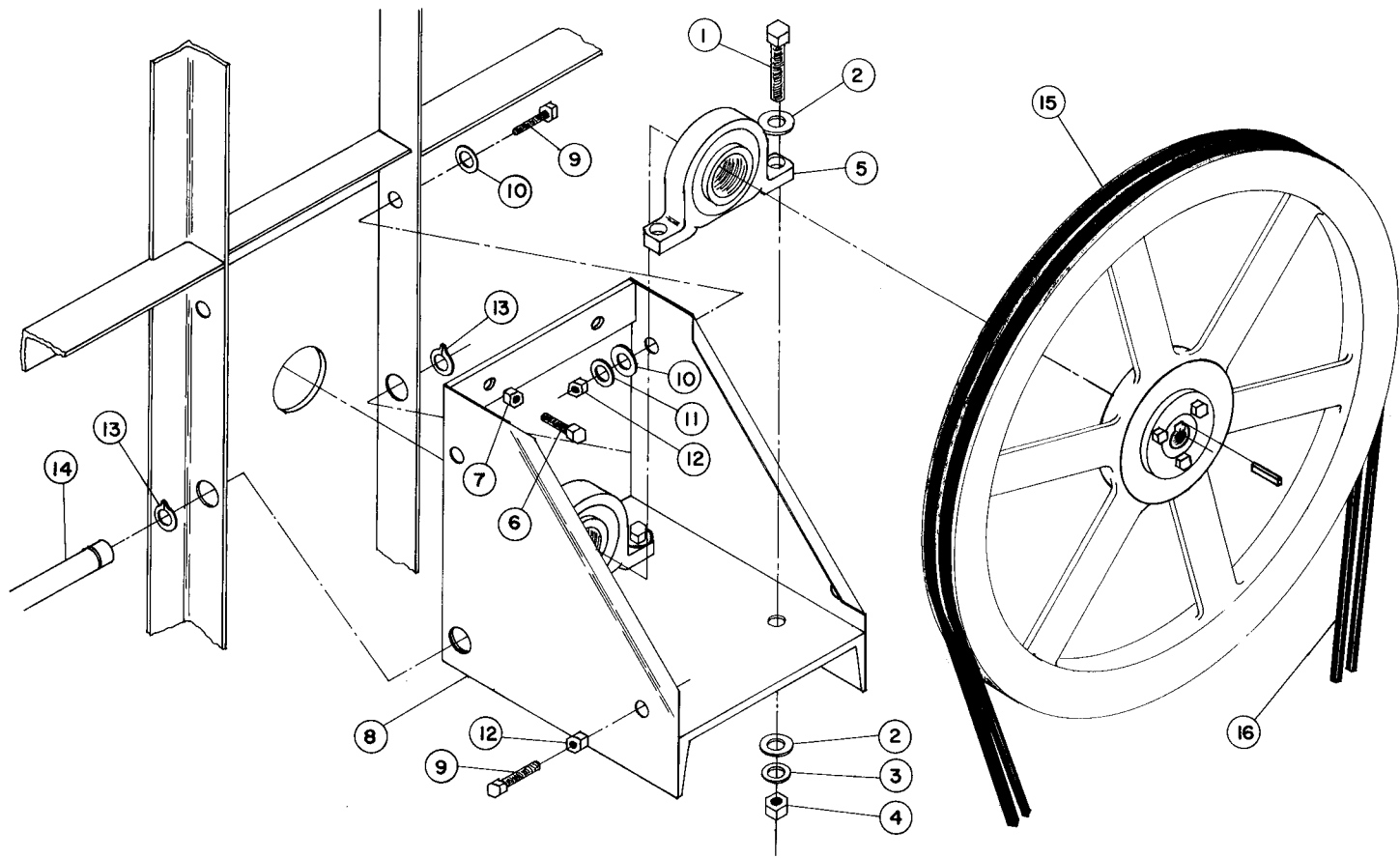
<u>Illus. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Model Utilizing Part</u>		
				<u>Gas</u>	<u>Electric</u>	<u>Steam</u>
1	800213	Lint Door Drop Type	1	x	x	x
2	160200	Knob Latch	2	x	x	x
3	117600	Noise Suppressor Tape (Sold By Foot)	8'	x	x	x



Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	800607	Tumbler Support	1	x	x	x
2	800707	Tumbler Only	1	x	x	x
3	800807	Tumbler & Support Comp.	1	x	x	x
4	150518	5/16 - 18 x 3/8" PHMS	1	x	x	x
5	153014	7/16 Flat Washer	17	x	x	x
6	153013	7/16 Lock Washer	16	x	x	x
7	152009	7/16 - 14 Hex Nut	8	x	x	x
8	100904	7/16 - 14 x 43" Tie Rod	8	x	x	x
9	301300	Tumbler Rib	4	x	x	x
10	150301	#8 - 18 x 7/16" #2 SDS	32	x	x	x
11	301700	Tumbler Reinforcing Plate	4	x	x	x
12	301701	Shim	A/R	x	x	x

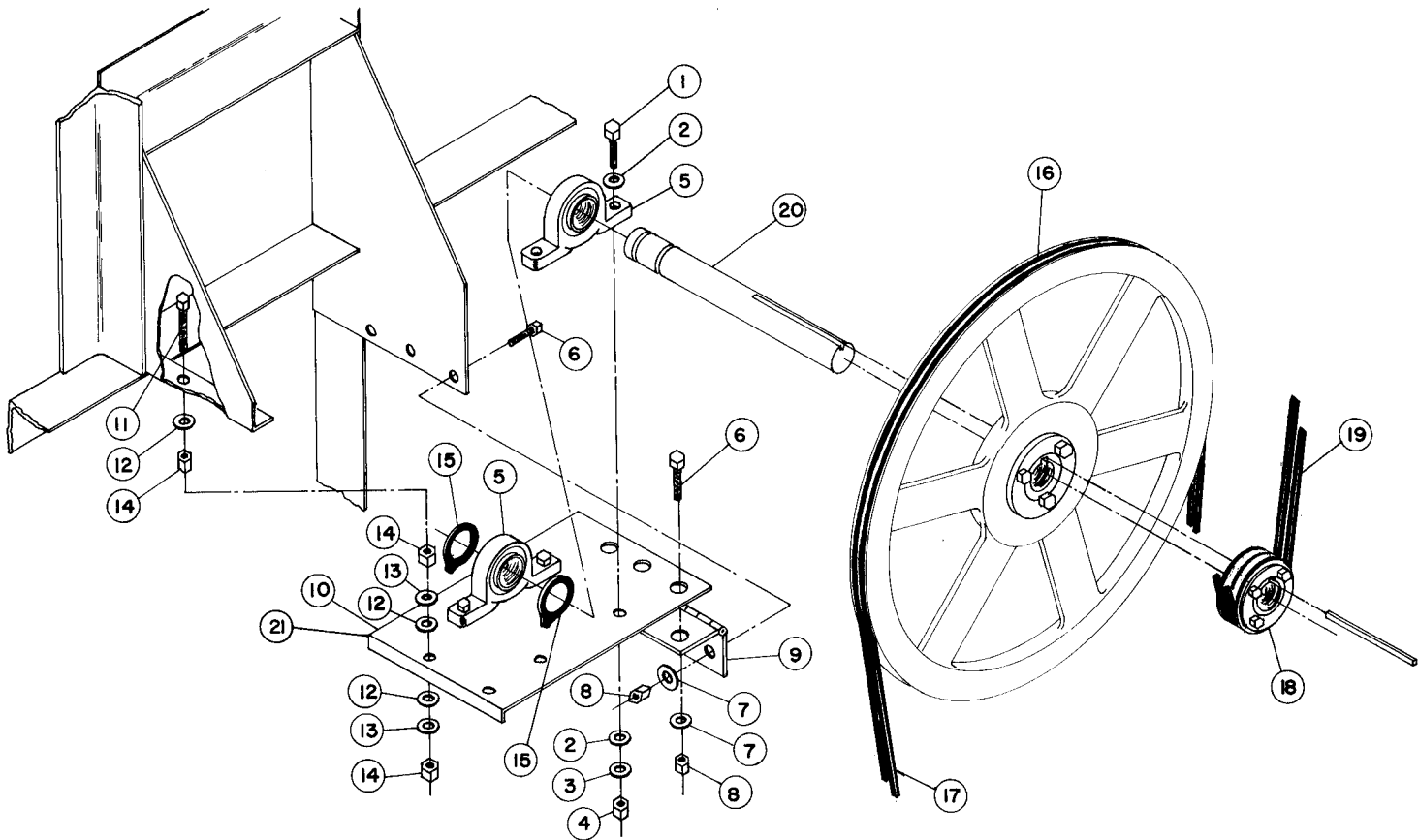


Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	800504	lint screen	1	x	x	x
2	800412	lint screen housing	1	x	x	x
	800413	lint housing comp. assy.	1	x	x	x
3	150301	7/16 SDS	2	x	x	x
4	305007	sensor mounting bracket (only)	1	x	x	x
	801425	sensor mounting bracket (comp)	1	x	x	x
5	130301	manual reset thermostat L-225	1	x	x	x
6	137010	temperature sensor	1	x	x	x
7	137011	sensor holder	1	x	x	x
8	304025	hanger bracket	1	x	x	x
9	154200	pop rivets	4	x	x	x

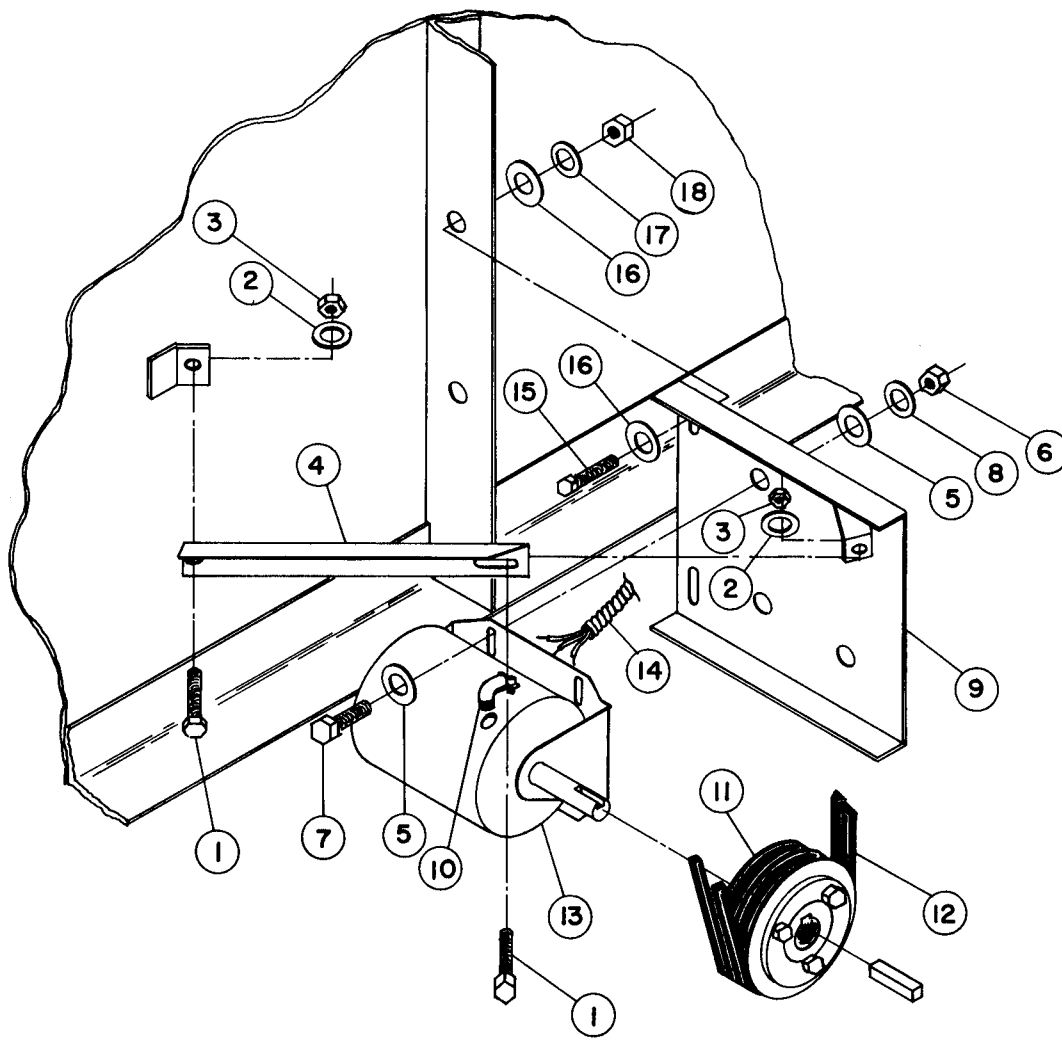


Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	150602	5/8 - 11 x 3" HH MB PL	4	x	x	x
2	153016	5/8 Flat Washer	8	x	x	x
3	153015	5/8 Lock Washer	4	x	x	x
4	152010	5/8 - 11 Hex Nut	4	x	x	x
5	100204	2 1/4 Pillow Block Bearing	2	x	x	x
6	150603	1/2 - 13 x 3" Square Head MS PL	2	x	x	x
7	152011	1/2 - 13 Hex Nut	2	x	x	x
8	801102	Bearing Mount	1	x	x	x
9	150600	3/8 - 16 x 1 1/2 HH MB PL	4	x	x	x
10	153004	3/8 Flat Washer	4	x	x	x
11	153005	3/8 Lock Washer	2	x	x	x
12	152005	3/8 Hex Nut	4	x	x	x
13	100801	5/8 Retaining Ring	2	x	x	x
14	103400	Hinge Pin	1	x	x	x
15	101111	Tumbler Pulley 18"	1	x	x	x
	101108	SK Bushing	1	x	x	x
16	100104	71 V-Belt	2	x	x	x

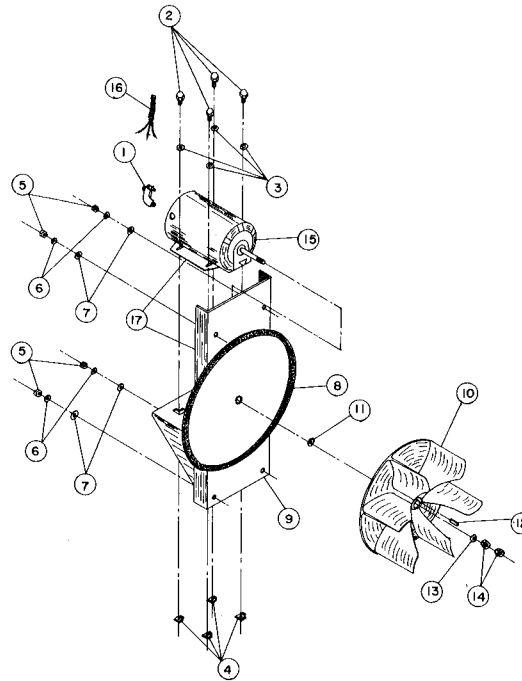




Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	150600	3/8 - 16 x 1 1/2 HH MB PL	4	x	x	x
2	153004	3/8 Flat Washer	8	x	x	x
3	153005	3/8 Lock Washer	4	x	x	x
4	152005	3/8 Hex Nut	4	x	x	x
5	100205	1" Pillow Block Bearing	2	x	x	x
6	150510	1/4 - 20 x 3/4 HH MB	6	x	x	x
7	153007	1/4 Lock Washer	6	x	x	x
8	152002	1/4 - 20 Hex Nut	6	x	x	x
9	103005	Idler Adjustment Hinge	1	x	x	x
10	311401	Idler Bearing Mount	1	x	x	x
11	150509	5/16 - 18 x 3 HH MB PL	2	x	x	x
12	153001	5/16 Flat Washer	4	x	x	x
13	153002	5/16 Lock Washer	6	x	x	x
14	152004	5/16 - 18 Hex Nut	6	x	x	x
15	100800	1" Retaining Ring	2	x	x	x
16	101112	Idler Pulley 19"	1	x	x	x
	101107	SK Bushing	1	x	x	x
17	100102	75 V-Belt	2	x	x	x
18	101113	Idler Sheave 3"	1	x	x	x
	101110	SK Bushing	1	x	x	x
19	100104	71 V-Belt	2	x	x	x
20	100401	1" Idler Shaft	1	x	x	x
21	801001	Idler Mount Comp. Pulleys, Bushing, & Belts Not Included	1	x	x	x

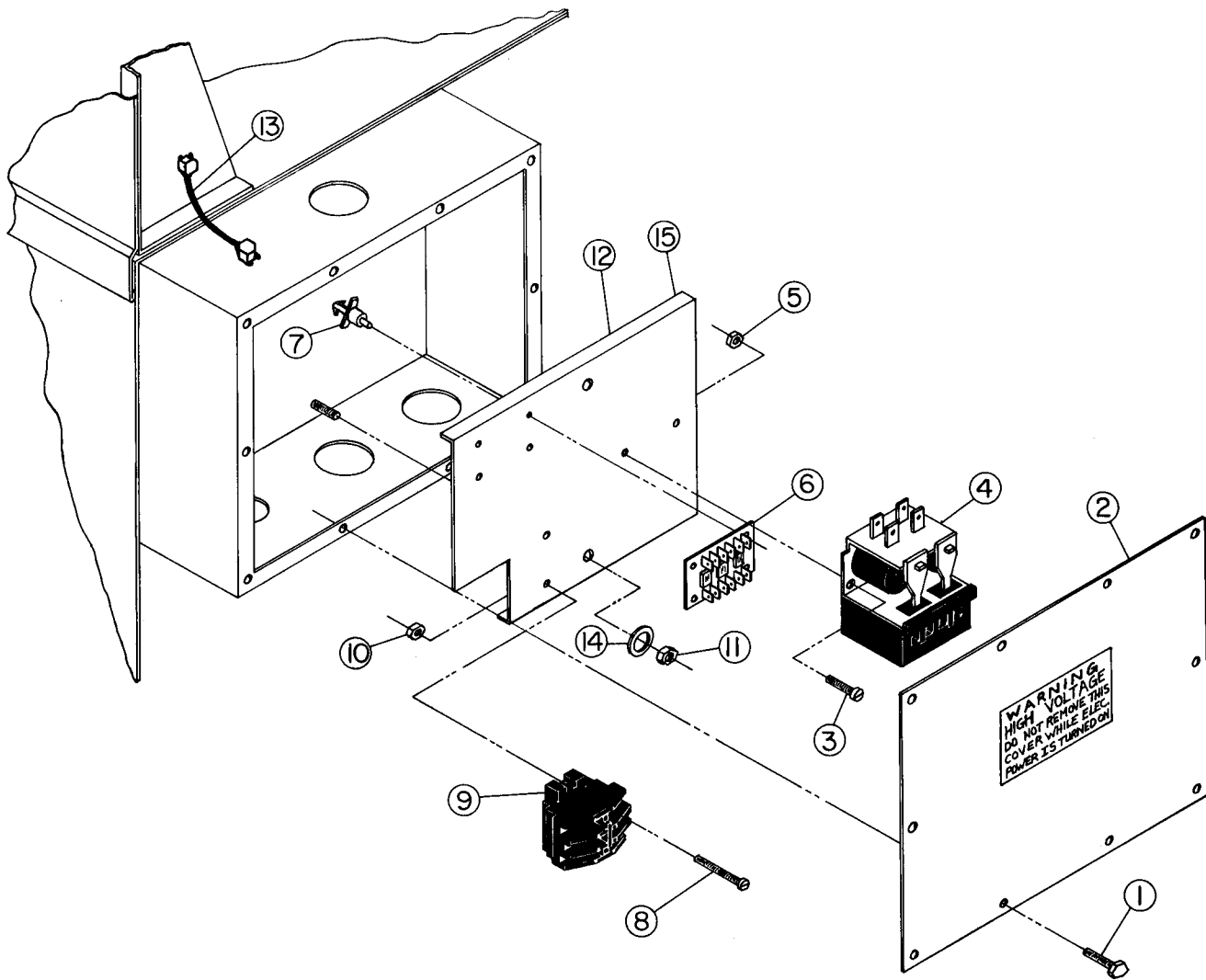


Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	150510	1/4 - 20 x 3/4 HH MB	2	x	x	x
2	153007	1/4 Lock Washer	2	x	x	x
3	152002	1/4 - 20 Hex Nut	2	x	x	x
4	302300	Drive Motor Mount Brace	1	x	x	x
5	153001	5/16 Flat Washers	8	x	x	x
6	152004	5/16 - 18 Hex Nut	4	x	x	x
7	150513	5/16 - 18 x 1 HH MB PL	4	x	x	x
8	153002	5/16 Lock Washers	4	x	x	x
9	800950	Drive Motor Mount	1	x	x	x
10	120300	3/8 45 Degree Connector	1	x	x	x
11	101114	Motor Sheave 2.65 O.D. (60HZ Only)	1	x	x	x
11	101120	Motor Sheave 3.15 O.D. (50HZ Only)	1	x	x	x
	101121	5/8 Bushing SK	1	x	x	x
12	100102	75 V-Belt	2	x	x	x
13	100029	3/4 HP 208/230/460/60/3 Motor	1	x	x	x
14	831451	Drive Motor 3Ø Harness	1	x	x	x
15	150600	3/8 - 16 x 1 1/2 HH MB	2	x	x	x
16	153004	3/8 Flat Washer	4	x	x	x
17	153005	3/8 Lock Washer	2	x	x	x
18	152005	3/8 - 16 Hex Nut	2	x	x	x



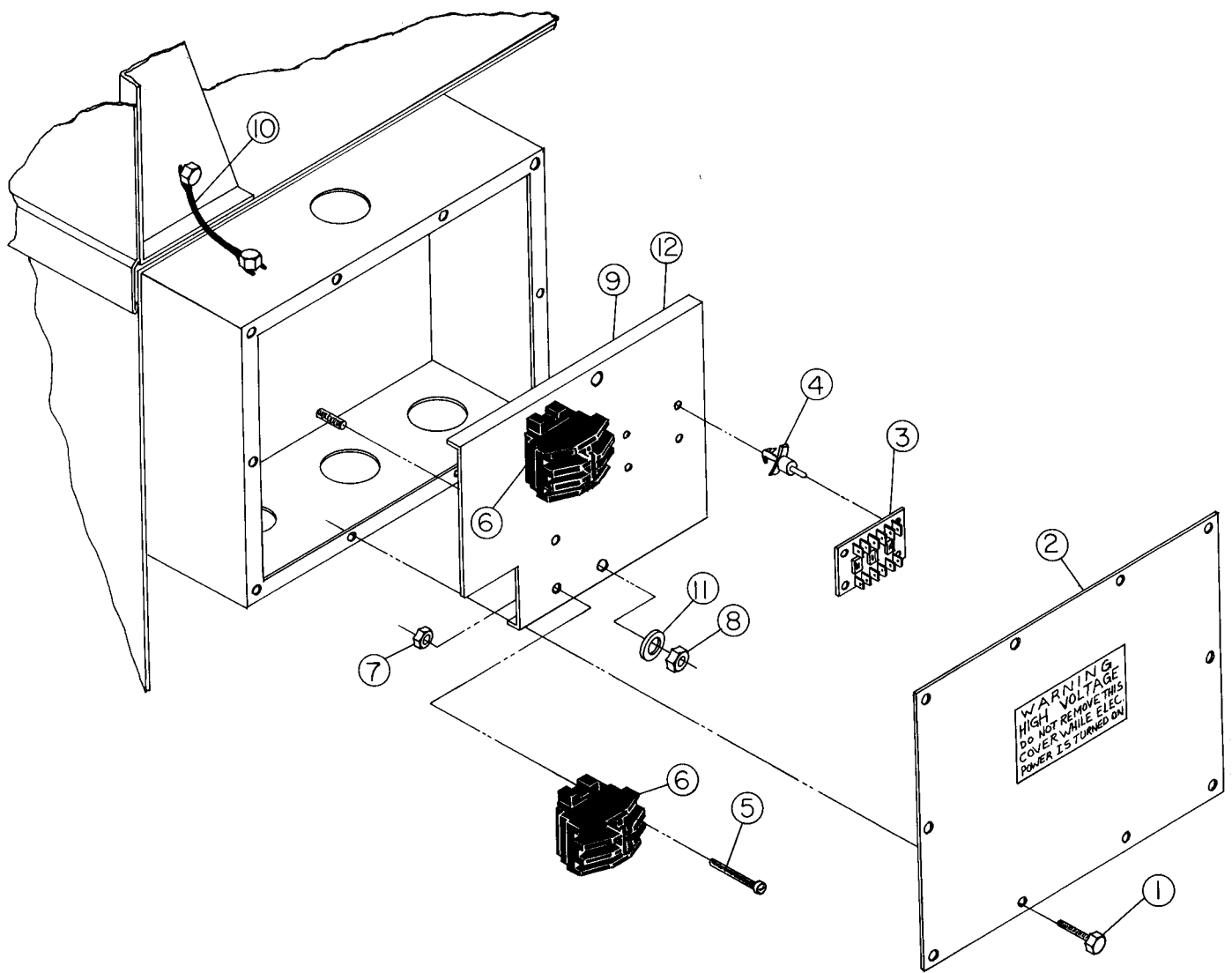
Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	120200	3/8 90 Connector	1	x	x	x
2	150501	5/16 - 18 x 3/4 HH MB PL	4	x	x	x
3	153002	5/16 Lock Washer	4	x	x	x
4	154000	5/16 - 18 Tinnerman	4	x	x	x
5	152004	5/16 - 18 Hex Nut	4	x	x	x
6	153002	5/16 Lock Washer	4	x	x	x
7	153001	5/16 Flat Washer	4	x	x	x
8	117600	Noise Suppressor Tape	4	x	x	x
9	800907	Motor Mount Only	1	x	x	x
	800913	Motor Mount Only (Super Steam)	1			x
10	100603	16" Impeller	1	x	x	x
	100605	13" magnesium impeller (Super Stm)	1			x
11	153023	3/4 x 1 1/2 Special Motor Washer	1/AR	x	x	x
12	100705	3/16 x 3/16" x 1 3/8" Key	1	x	x	x
13	153024	1/2 x 1 1/4 x 1/16 Flat Washer	1/AR	x	x	x
14	152006	1/2 - 20 LH Jam Nut	2	x	x	x
15	100030	1 HP 208/230/460/60/3 Motor	1	x	x	x
	100023	3 HP 208/230/460/3 Motor	1*			x
16	831453	Blower Motor Harness 3 $\phi$	1	x	x	x
17	803891	1 HP 208/230/460/3 Motor Mount Complete	1	x	x	x
	803892	3 HP 208/230/460/3 Motor Mount Complete	1*			x

\*Super Steam Model



### REVERSING DRYER

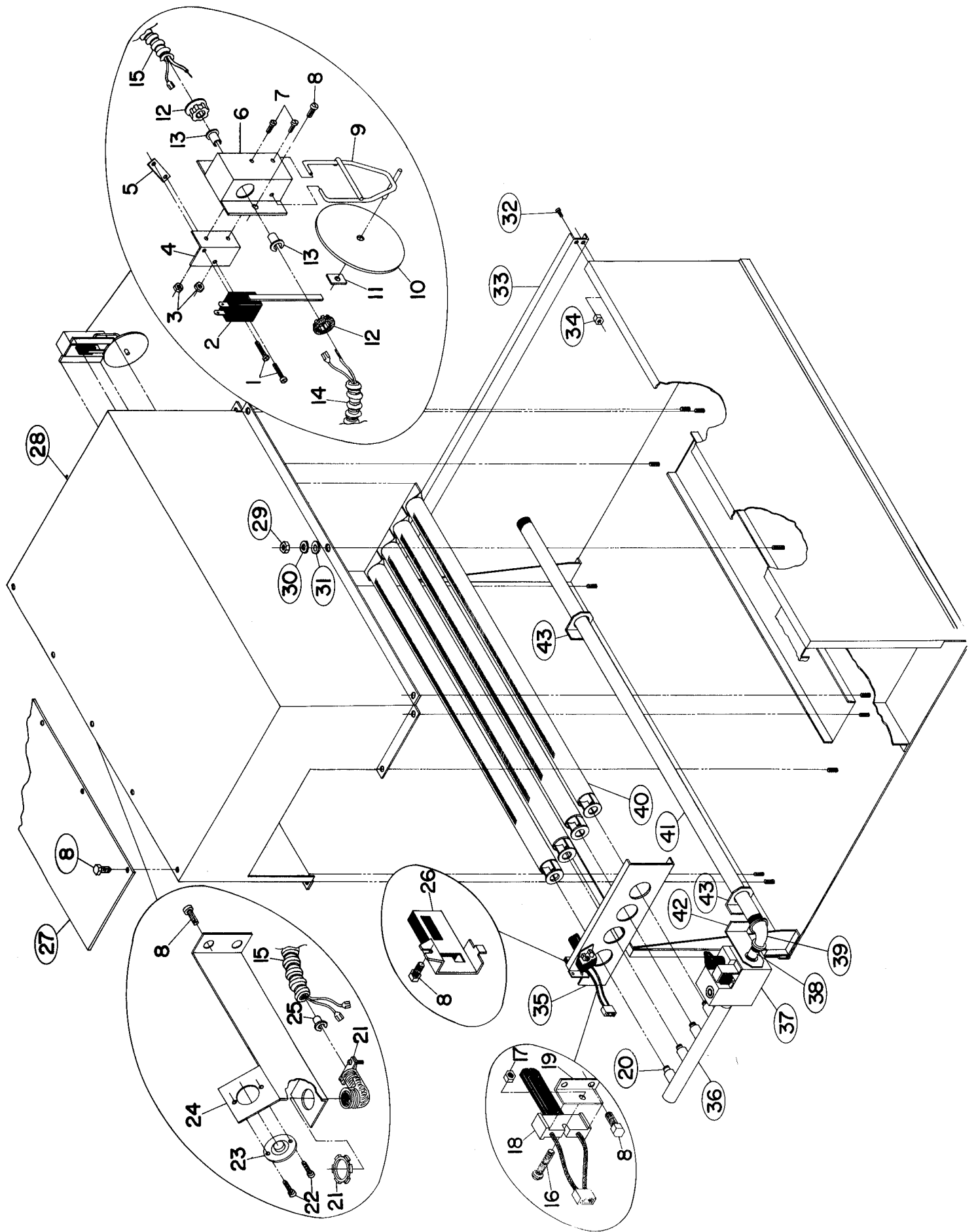
<u>Illus No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Model Utilizing</u>	<u>Part</u>	
				<u>Gas</u>	<u>Electric</u>	<u>Steam</u>
1	150300	10-32 x 1/2 HH SDS	8	X	X	X
2	322808	cover plate	1	X	X	X
3	150108	8-32 x 1/2 PH mach. screw	2	X	X	X
4	132401	Struthers Dunn 50/60 HZ relay (rev. only)	1	X	X	X
5	151001	8-32 pal nut	2	X	X	X
6	137060	AS board	1	X	X	X
7	137013	standoff	4	X	X	X
8	150106	8-32-1 round head mach. screw	2	X	X	X
9	132400	impellor contactor 220V	1	X	X	X
10	151001	8-32 pal nut	2	X	X	X
11	152004	5/16-18 hex nut	2	X	X	X
12	322807	mounting panel	1	X	X	X
13	831708	ground wire	1	X	X	X
14	153002	5/16 lock washer	2	X	X	X
15	803615	60HZ reversing comp.	1	X	X	X
16	803616	50HZ reversing comp.	1	X	X	X



### NON-REVERSING DRYER

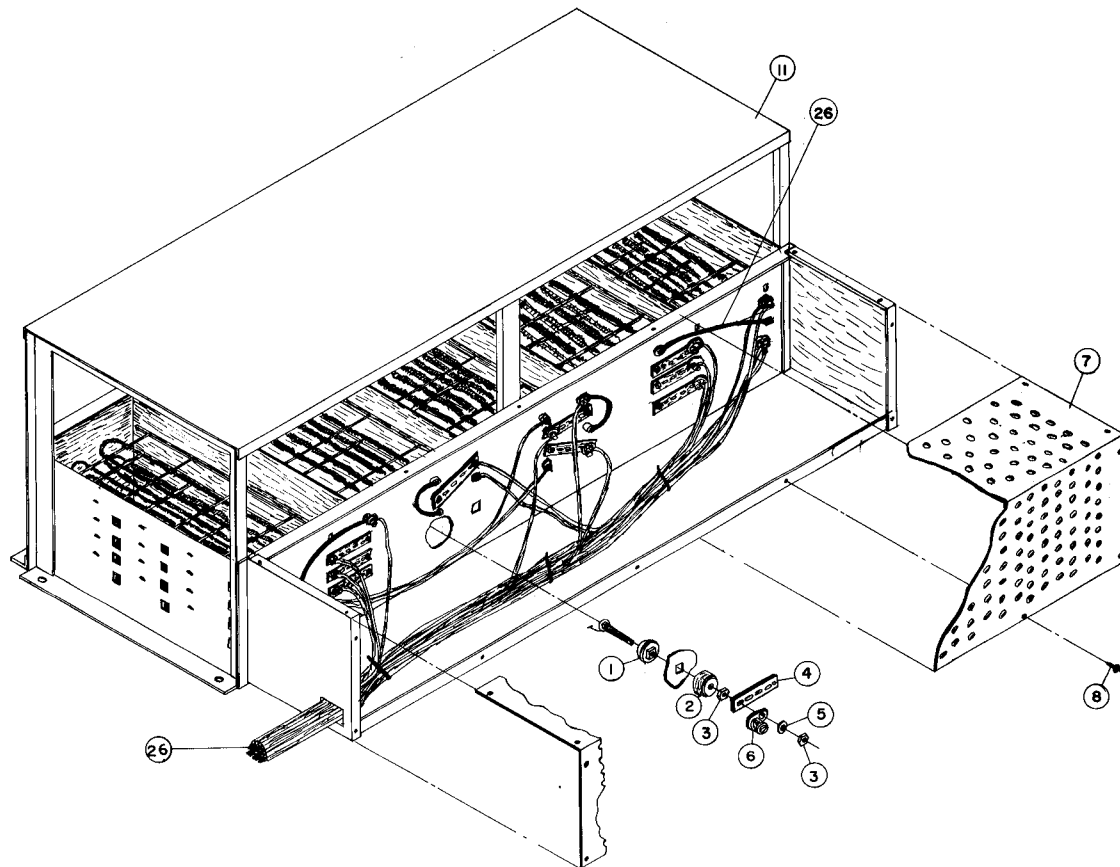
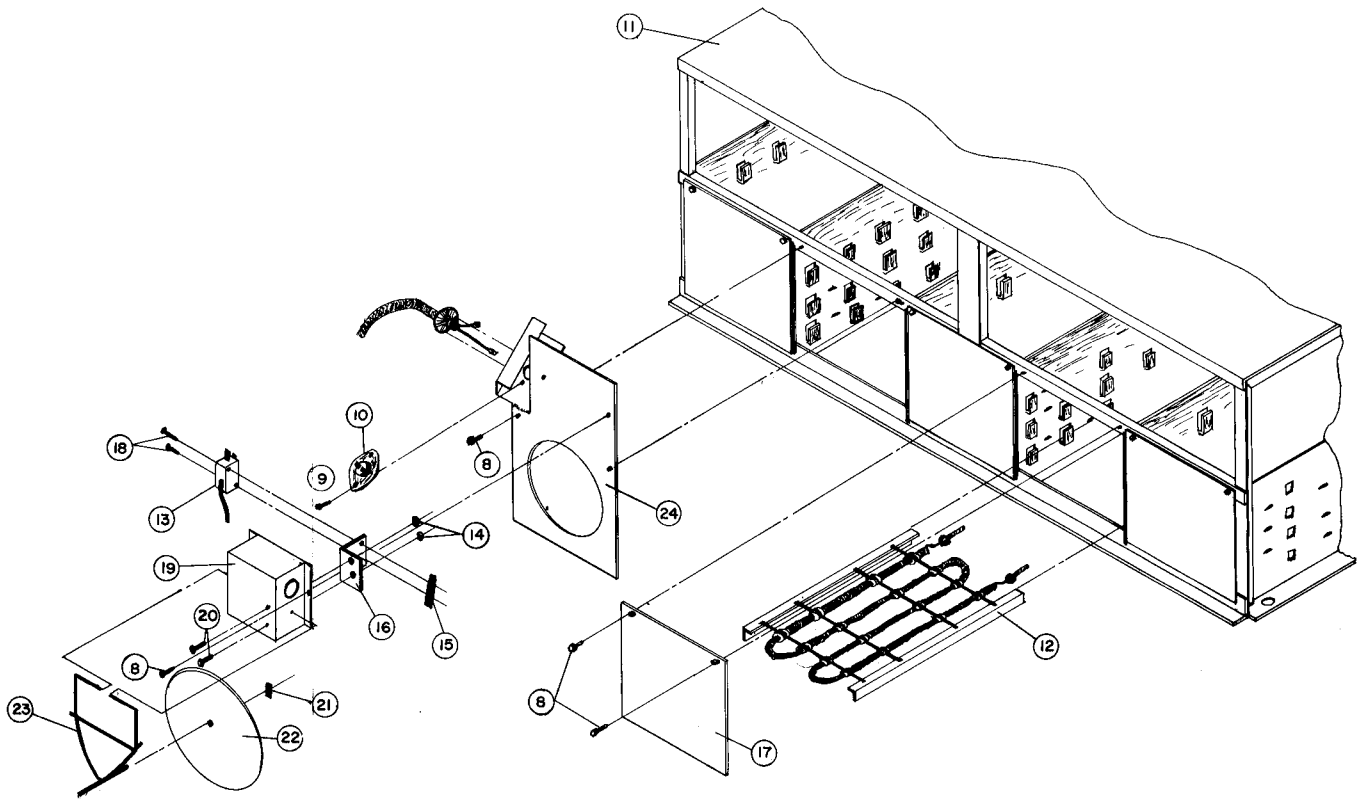
Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	150300	10-32 x 1/2 HH SDS	8	X	X	X
2	322808	cover plate	1	X	X	X
3	137060	A.S. board	1	X	X	X
4	137013	standoff	4	X	X	X
5	150106	8-32-1 round head mach screw	4	X	X	X
6	132400	impellor contactor 220V	2	X	X	X
7	151001	8-32 pal nut	4	X	X	X
8	152004	5/16 hex nut	2	X	X	X
9	322807	mounting panel	1	X	X	X
10	831708	ground wire	1	X	X	X
11	153002	5/16 lock washers	2	X	X	X
12	803617	non-reversing comp.	1	X	X	X



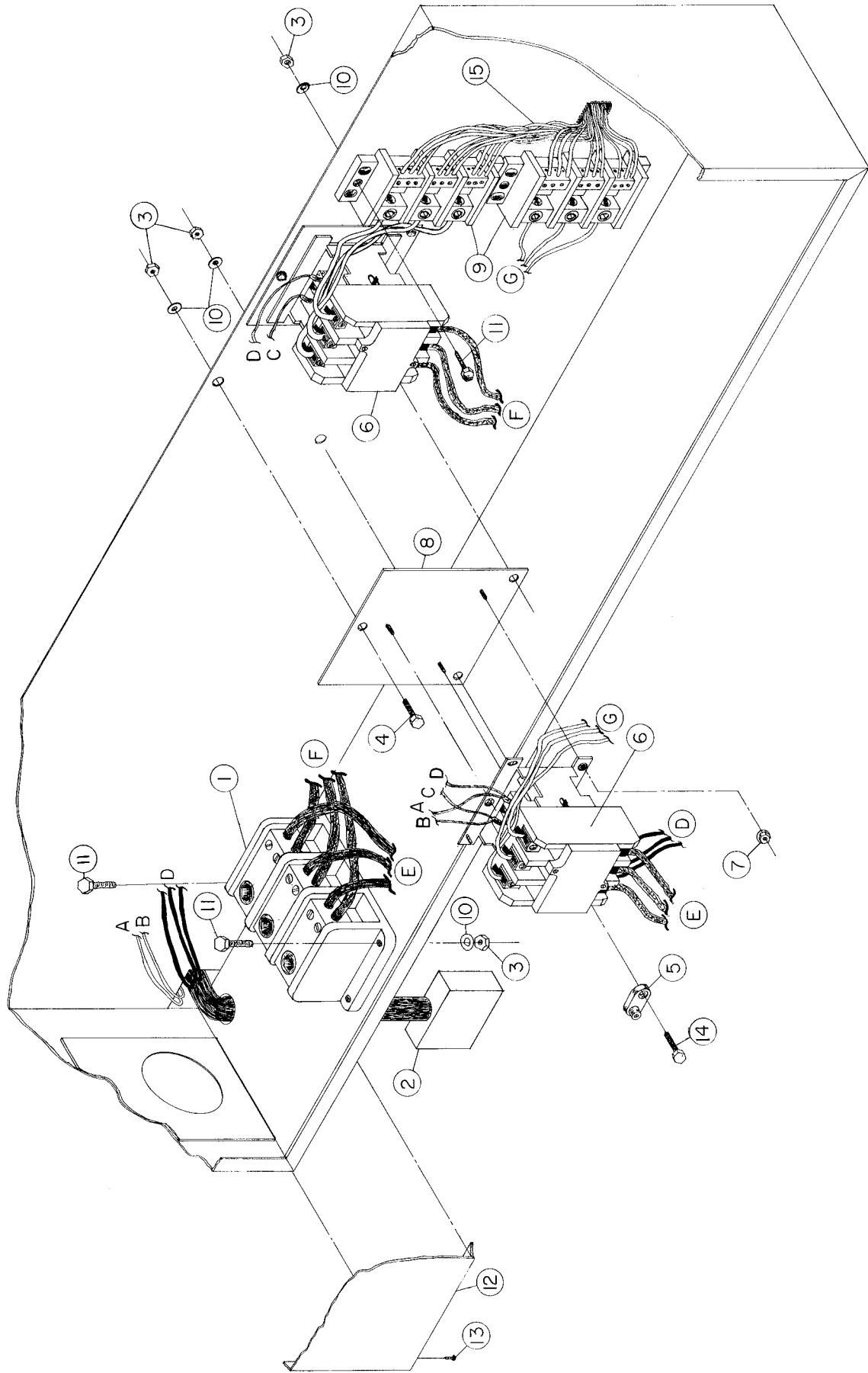


Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	150303	#4 x 5/8" pan head	2	x		
2	802801	sail switch comp/less harness	1	x		
	122200	sail switch	1	x		
3	152001	8-32 hex nut	2	x		
4	319203	sail switch mounting bracket	1	x		
5	154004	twin speed nut	1	x		
6	802800	sail switch box	1	x		
7	150102	8-32 x 3/8 pan head screws	2	x		
8	150300	#10 x 1/2 SDS teks	15	x		
9	105500	sail switch rod	1	x		
10	319202	sail switch damper	1	x		
11	154002	1/8 push on fastener	1	x		
12	120100	3/8 St. dummy connector	2	x		
13	120400	3/8 red jacket	2	x		
14	830107	sail switch harness	1	x		
15	830108	hi limit harness	1	x		
16	150002	6-32-1" RHMS	1	x		
17	151000	6-32 pal nut	1	x		
18	128910	glo bar	1	x		
19	319509	glo bar mounting bracket	1	x		
20	140703	orifice (natural)	4	x		
	140806	Orifice (L.P.)	4	x		
21	120200	3/8 - 90° connector	1	x		
22	150001	6-32 x 1/2 RHMS	2	x		
23	130401	L-330 hi limit	1	x		
24	319704	hi limit mounting bracket	1	x		
25	120400	3/8 red jacket	1	x		
26	130500	I.R. sensor	1	x		
27	319400	cover burner	1	x		
28	806601	LP burner comp.	1	x		
	806600	Natural burner comp.	1	x		
29	152002	1/4 - 20 hex nut	10	x		
30	153007	1/4 lock washer	10	x		
31	153001	5/16 flat washer	10	x		
32	150510	1/4-20 x 3/4 HH bolt	4	x		
33	312307	corner gusset brace	1	x		
34	152002	1/4 - 20 hex nut	4	x		
35	318359	burner mounting bracket	1	x		
36	141207	manifold	1	x		
37	140005	1/2 GB White-Rodgers (natural)	1	x		
	1404**	LP valve kit conv.	1	x		
38	142512	1/2 x 3" nipple	1	x		
39	142511	1/2 to 3/4 reducing elbow	1	x		
40	141106	burner tube	4	x		
41	142807	3/4 x 40" pipe	1	x		
42	318364	pipe bracket	2	x		
43	318363	pipe bracket	2	x		

\*\* Contact factory for proper number for kit.

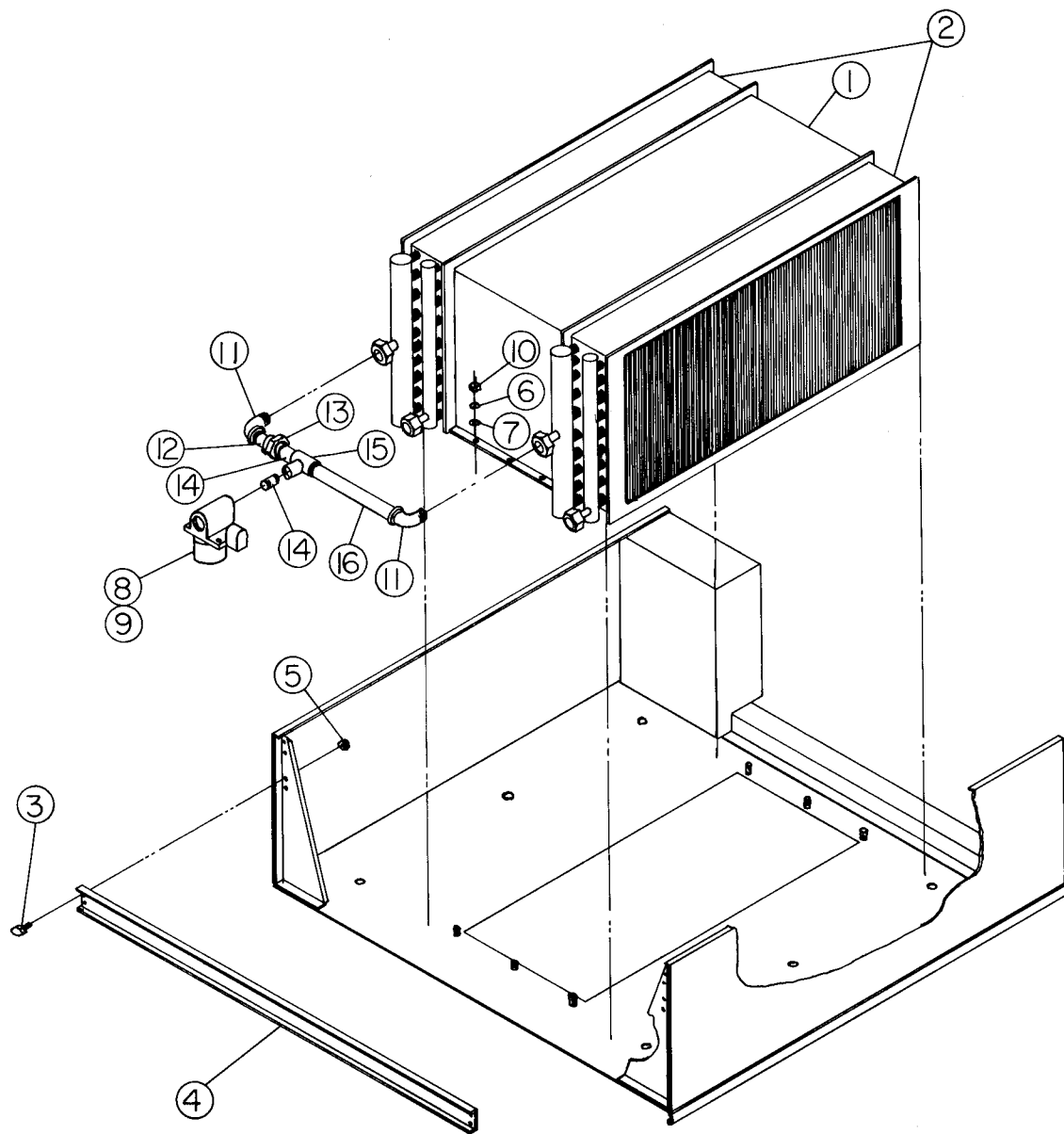


Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	120081	Internal Ceramic Insulator	36		x	
2	120080	External Ceramic Insulator	36		x	
3	152008	10 - 32 Hex Nut	72		x	
4	121011	Bus Bar (Sold By Foot)	1		x	
5	153009	#10 Lockwasher	36		x	
6	121010	Terminal Lug 208/240v	18		x	
	121010	Terminal Lug 416/480v	9		x	
7	321403	Access. Cover	1		x	
8	150300	#8 - 18 x 1/2 Tek HH Screw	26		x	
9	150301	#8 - 18 x 7/16 Tek PH H Screw	2		x	
10	130400	Hi Limit Thermostat L - 290	1		x	
11	803002	Electric Oven Only	1		x	
	815800	60KW 208v 3Ø Oven Complete	1		x	
	815802	60KW 240v 3Ø Oven Complete	1		x	
	815805	60KW 416v 3Ø Oven Complete	1		x	
	815806	60KW 480v 3Ø Oven Complete	1		x	
12	120006	3KW 208v Heating Element	12		x	
	120007	3KW 240v Heating Element	12		x	
	120008	4KW 208v Heating Element	6		x	
	120009	4KW 240v Heating Element	6		x	
13	122200	Sail Switch	1		x	
14	152001	8 - 32 Hex Nut	2		x	
15	154004	Twin Speed Nut	1		x	
16	319203	Sail Switch Mtg. Brkt.	1		x	
17	320002	Access Cover, Heating Elements	4		x	
18	150303	#4 x 5/8 Pan H Screw	2		x	
19	802800	Sail Switch Box Assy.	1		x	
20	150102	#8 - 32 x 3/8 Pan H Screw	2		x	
21	154000	1/8 push-on fastener	1		x	
22	319202	Sail Switch Damper	1		x	
23	105500	Sail Switch Rod	1		x	
24	321400	Safety Controls Bracket	1		x	
25	834200	Element Intcn. Wire Set 208/240v	1		x	
	834201	Element Intcn. Wire Set 416/480v	1		x	
26	834210	Oven Lead Wire Set 208/240v	1		x	
	834211	Oven Lead Wire Set 416/480v	1		x	

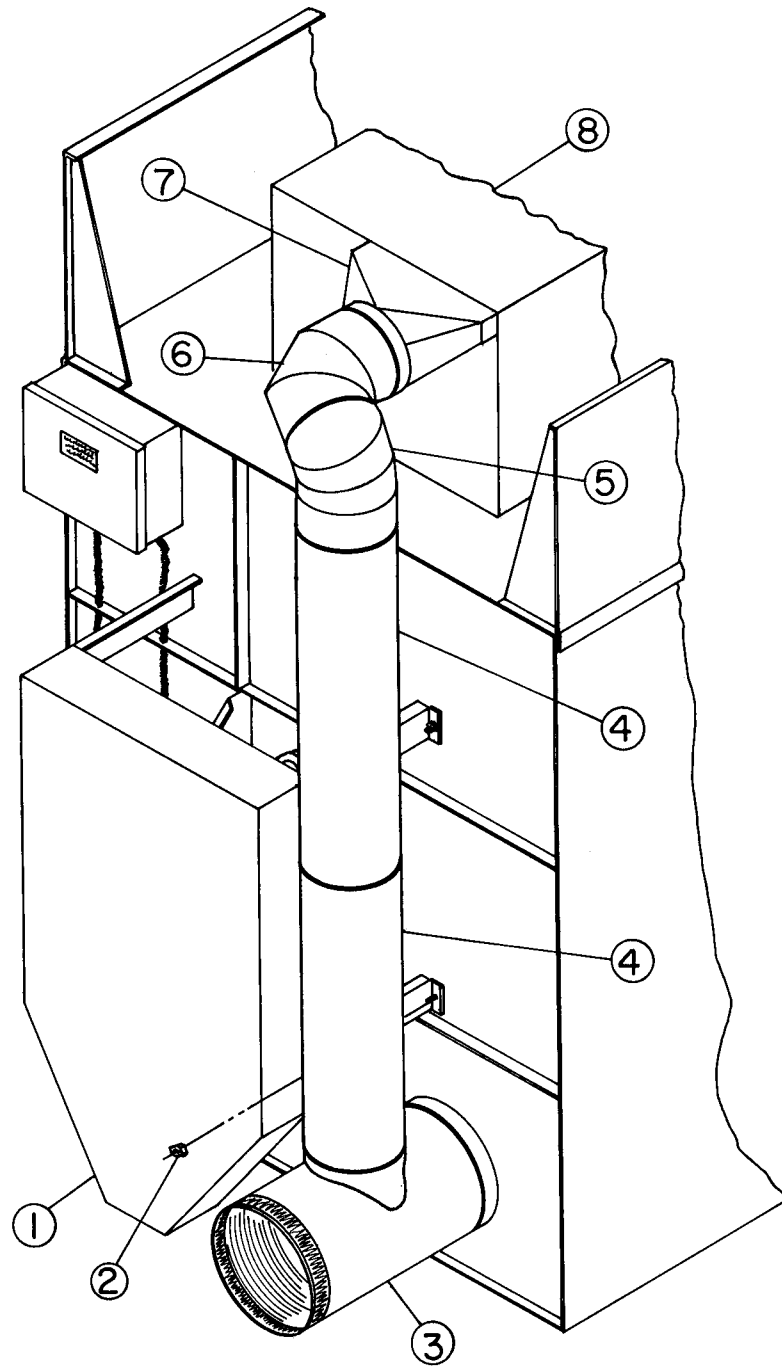




<u>Illus</u> <u>No.</u>	<u>Part</u> <u>No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Model</u> <u>Gas</u>	<u>Utilizing</u> <u>Electric</u>	<u>Part</u> <u>Steam</u>
1	120710	terminal block, power input	1		x	
2	831800	power control harness & connector	1		x	
3	152002	1/4-20 pal nut	7 or 12		x	
4	150512	1/4-20 x 1/2 Hex Hd bolt	5		x	
5	121010	ground lug L-70	1		x	
6	131309	relay contactor 93A 240V	1 or 2		x	
7	152008	10-32 pal nut	3 or 6		x	
8	803202	mounting adaptor plate	1 or 2		x	
9	120706	terminal block distribution	1 or 2		x	
10	153007	1/4 lock washer	7 or 14		x	
11	150511	1/4-20 x 1-1/2 hex hd bolt	4 or 6		x	
12	320902	junction box cover	1		x	
13	150301	8-18 x 7/16 PH SDS screw	14		x	
14	150510	1/4-20 x 3/4 hex hd bolt	1		x	
15	834210	oven lead wire set 200/240V	1		x	
	834211	oven lead wire set 416/480V	1		x	



Illus No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	803504	steam plenum	1			x
2	165005	steam coil (all models)	2			x
3	150510	1/4-20 x 3/4 HH bolt	4			x
4	312307	corner gusset brace	1			x
5	152002	1/4-20 hex nut	4			x
6	153001	5/16 flat washer	6			x
7	153007	1/4 lock washer	6			x
8	165101	1" steam valve 220HP-LP	1			x
9	165207	1" 240V 60 ~ steam sol	1			x
10	152002	1/4-20 hex nut	6			x
11	142507	1" 90° street elbow	2			x
12	142808	1" x 3" nipple	1			x
13	142602	1" black union	1			x
14	142711	1" close nipple	2			x
15	142508	1" tee	1			x
16	142712	1" x 10" nipple	1			x



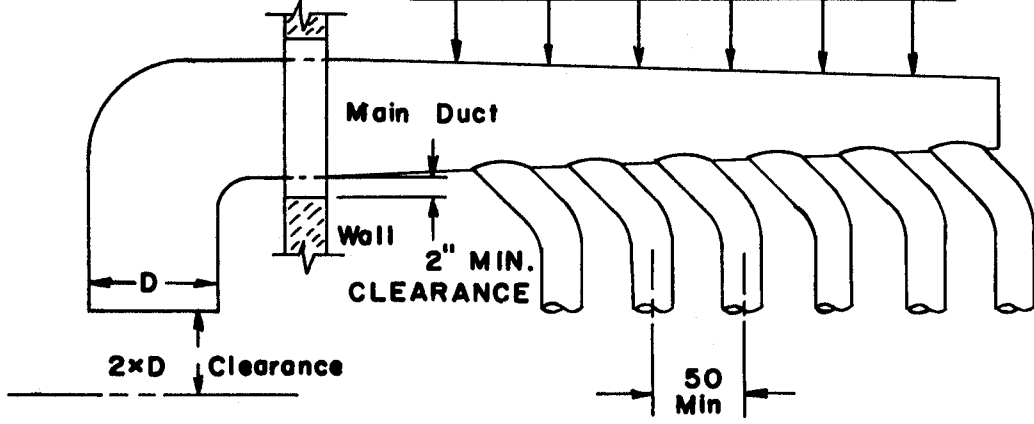
Illus. No.	Part No.	Description	Qty.	Model Utilizing Part		
				Gas	Electric	Steam
1	801509	Back Guard	1	x		
2	152004	5/16 - 18 hex nut	4	x		
3	143507	tee duct	1	x		
4	143503	pipe duct	2	x		
5	143506	45° elbow duct	1	x		
6	143502	90° elbow duct	1	x		
7	143505	adapter duct	1	x		
8	806602	H.R. oven complete (Nat)	1	x		
	806603	H.R. oven complete (LP)	1	x		

## SECTION X

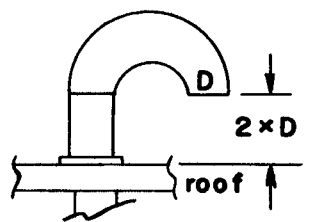
### TECHNICAL DATA

a) EXHAUST SYSTEM	10-2,3
b) INSTALLATION CONNECTION DATA	10-4,5
c) ORIFICE & WATER COLUMN TABLES	10-6
d) ELECTRIC OVEN SELECTION TABLE	10-6
e) HEAT EXCHANGER INSTALLATION	10-7
f) POWER DISTRIBUTION 208/240v	10-8
g) POWER DISTRIBUTION 416/480v	10-9
h) ELECTRIC OVEN ELEMENT INTERCONNECTIONS 208/240v	10-10
i) ELECTRIC OVEN ELEMENT INTERCONNECTIONS 416/480v	10-11
j) CONTROLS ELECTRICAL SCHEMATIC DIAGRAM	10-12

	Minimum cross-section area in sq in					
for 12" dia. ducts	670	560	450	340	230	115
for 16" dia ducts	1230	1025	820	615	410	205



**FIGURE 1**



**FIGURE 2**

To calculate area (in square inches) of round ducting: Area = diameter (in inches) x Diameter (in inches) x .785. (Example: area of 12" diameter duct = 12 x 12 x .785 = 113 square inches.)

EXHAUST DUCT AND AIR INTAKE. Where possible, it is desirable to provide a separate exhaust air duct for each dryer. The duct should be 12" or 16" diameter, depending upon the air outlet diameter of the dryer. The duct should go as directly as possible to the outside air. Avoid right angle turns in the ducting; use 30 degree or 45 degree angles instead. The radius of the elbows should preferably be 1 1/2 times the diameter of the duct. To protect the outside end of the duct from the weather, it may be bent downward as indicated in Figure 1. Leave at least twice the diameter of the duct clear between the duct opening and the nearest obstruction. If the exhaust duct goes through the roof, it may be protected from the weather by a hood, or by using a 180 degree turn to point the opening down as indicated in Figure 2. In either case, allow at least twice the diameter of the duct as clearance from the nearest obstruction as indicated above.

Do not use screens or caps on the outside opening of the exhaust duct. The ducting should be smooth inside, with no projections from sheet metal screws or other obstructions which will collect lint. When adding ducts, the duct to be added should overlap the duct that it is to be connected to. Provide inspection

doors for periodic clean-out of lint from the main duct.

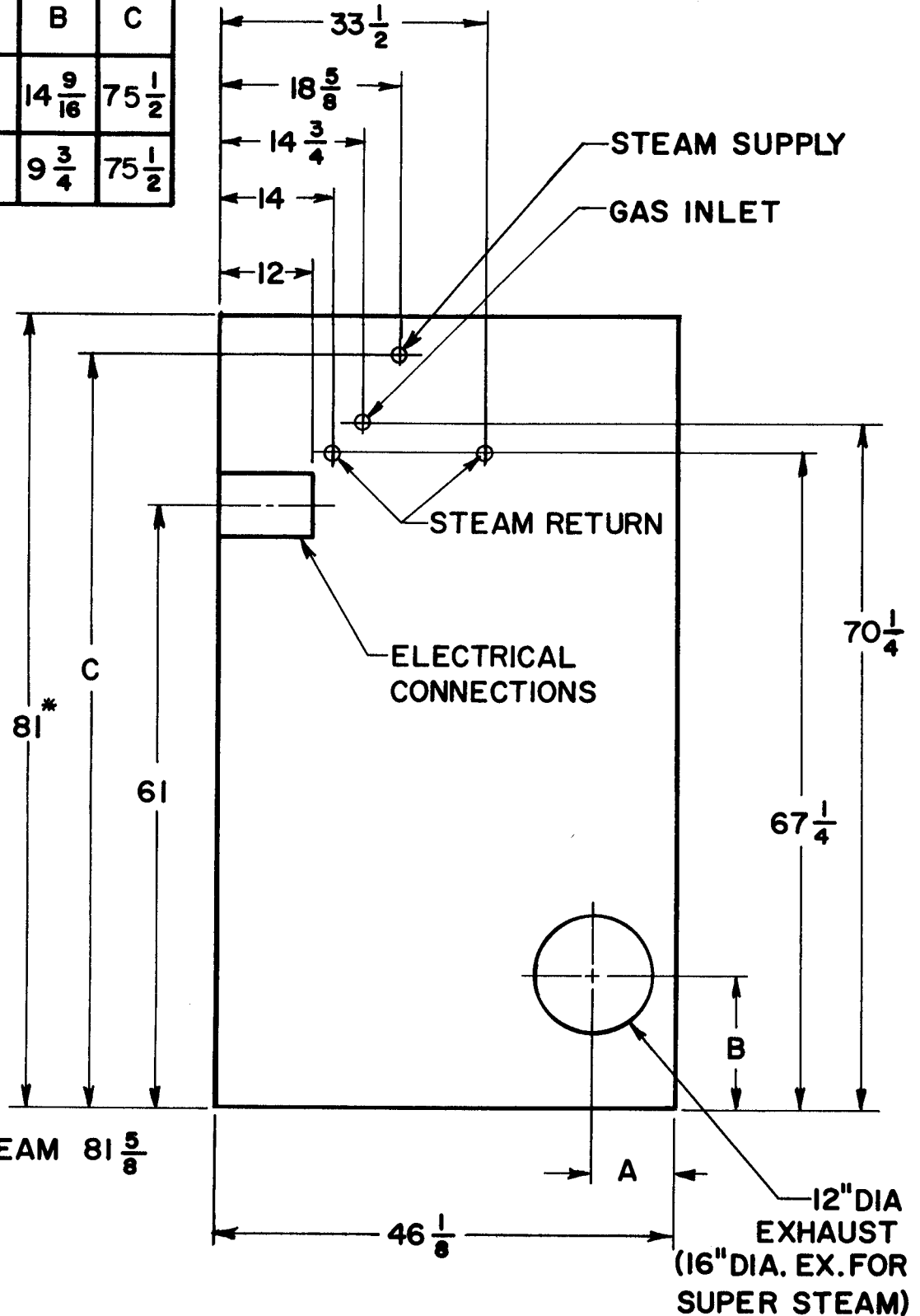
If it is not feasible to provide separate exhaust ducts for each dryer, ducts from the individual dryers may be channeled into a common main duct. The individual ducts should enter the bottom or side of the main duct at an angle not more than 45 degrees and should be spaced at least 46" apart. The main duct should be tapered, with the diameter increasing before each individual duct is added. The minimum increase in cross-section area should be 115 square inches for each 12" duct added and 205 square inches for each 16" duct added. Where rectangular main ducting is used the areas shown should be increased 10 square inches, and the ratio of duct width to depth should not be greater than 3 1/2 to 1. Figure 1 shows the minimum cross-section areas of the main duct for either 12" or 16" dryer ducts. These figures should be increased if the main duct is unusually long (20' or over) or has numerous elbows in it.

Openings from the outside air to the room in which the dryers are operating should be provided for make-up air and located as near to each dryer as possible. These openings should be 3 to 4 times the cross-section area of the exhaust ducts.

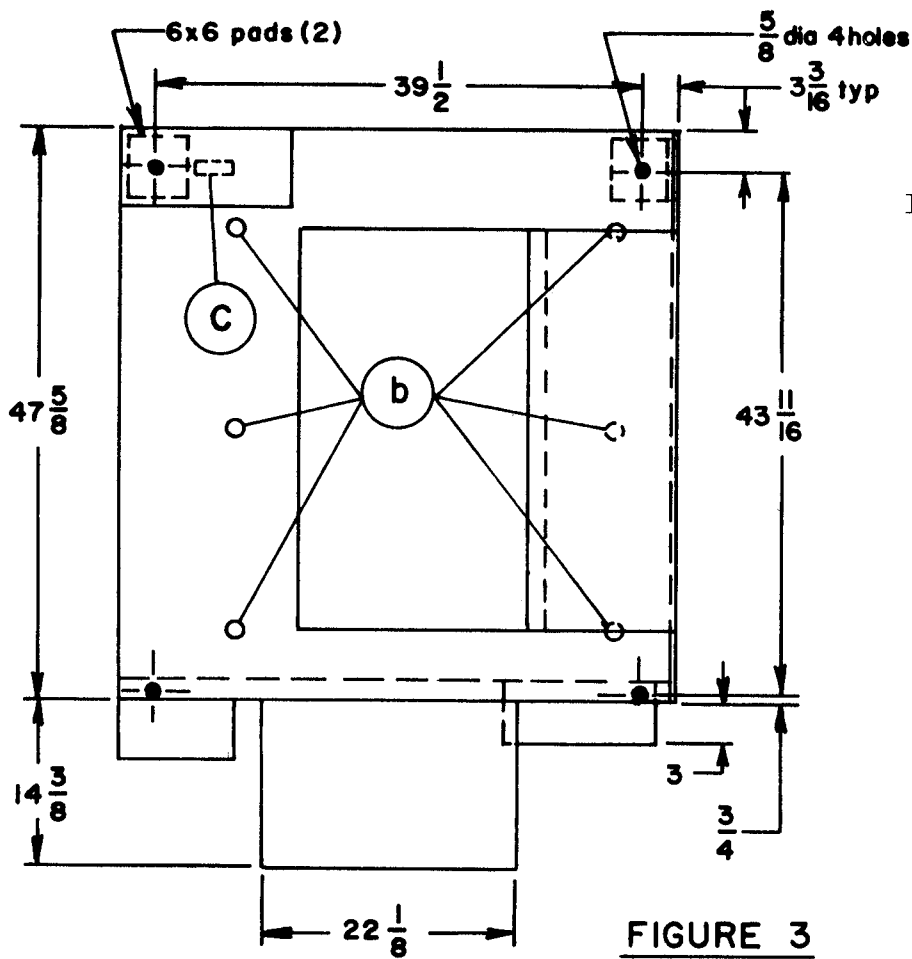
Inadequate exhaust facilities may cause high temperature limit switches or air flow switches to shut off the dryers. Do not disable the switches, which are provided for your safety. Instead, investigate the exhaust ducting. Any obstruction or air friction due to numerous elbows/fittings in the ducting will slow the passage of air through the system with resulting inefficiency and potential fire hazard.



	A	B	C
STD. CABINET	$8 \frac{1}{8}$	$14 \frac{9}{16}$	$75 \frac{1}{2}$
SUPER STEAM CABINET	$8 \frac{7}{16}$	$9 \frac{3}{4}$	$75 \frac{1}{2}$



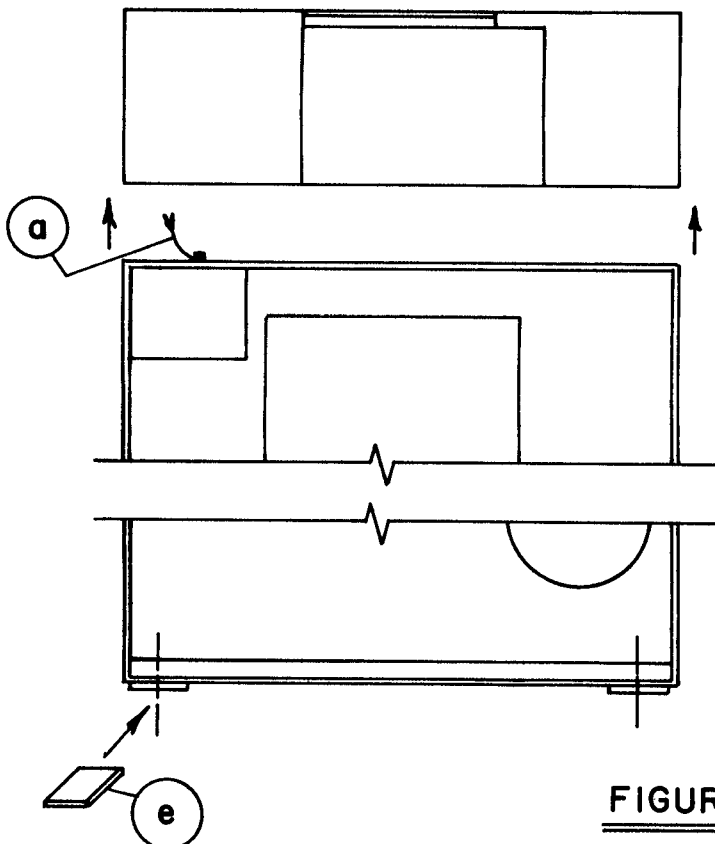
INSTALLATION INFORMATION FOR GAS, STEAM, AND ELECTRICAL CONNECTIONS AND EXHAUST LOCATION.



**FIGURE 3**

If more headroom is needed after removal of the skid.

- 1.) Disconnect the ground wire (a) at the rear of the dryer. (see figure 4)
- 2.) Remove the nuts (b) holding the console to the base. (see figure 3)
- 3.) Release control door.
- 4.) Disconnect plug (c) located in the control box. (see figure 3)
- 5.) Lift the console from the base. (see figure 4)



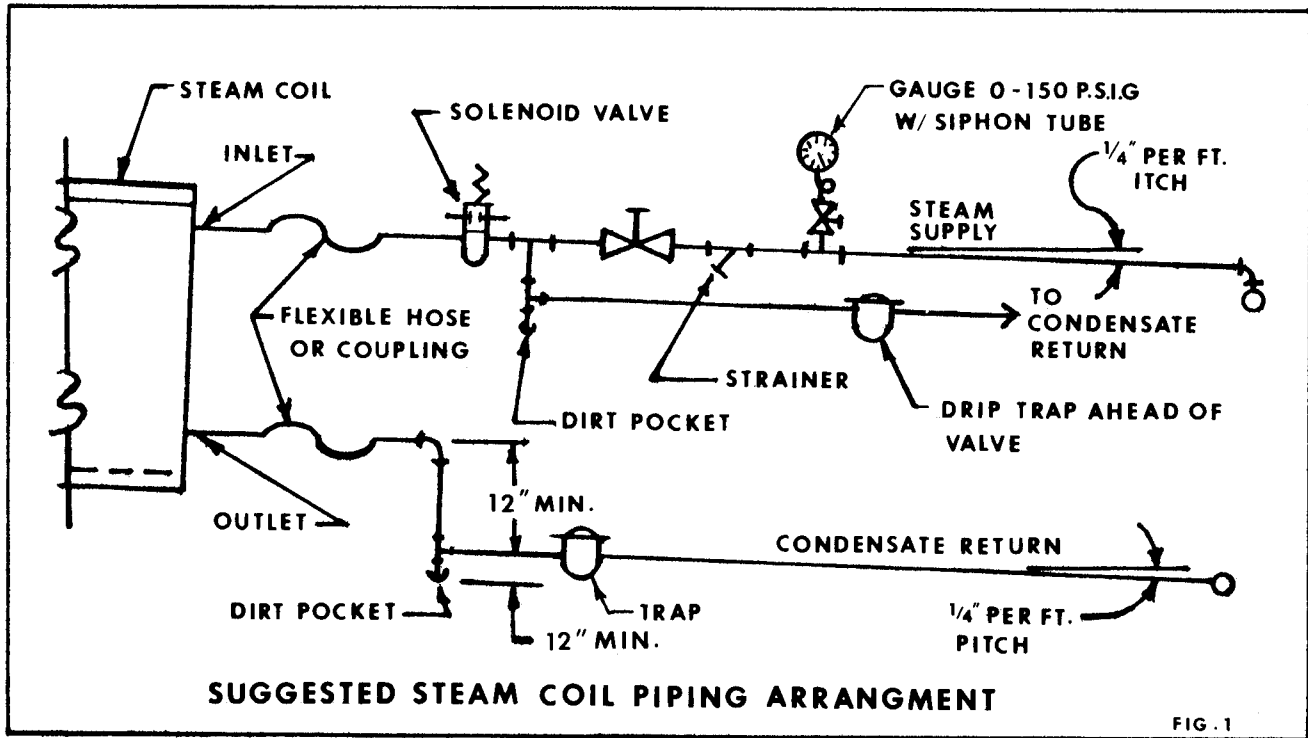
**FIGURE 4**

To level the dryer.

- 1.) Place 4" square metal shims (e) (see figure 4), or other suitable material under the base pads.

ORIFICE AND WATER COLUMN TABLE				
ADG-100	NATURAL		LP	
ADG-100 (230,000 BTU)	DIA. OF HOLE	QTY.	DIA. OF HOLE	QTY.
MAIN BURNER ORIFICE	$\frac{.144''}{3.7 \text{ MM}}$	4	$\frac{.086''}{2.2 \text{ MM}}$	4
ADG-100 (210,000 BTU)	DIA OF HOLE	QTY.	DIA. OF HOLE	QTY.
HEAT RECLAIMER MAIN BURNER ORIFICE	$\frac{.136''}{3.5 \text{ MM}}$	4	$\frac{.082}{2.1 \text{ MM}}$	4
WATER COLUMN	4" AT PRESSURE TAP ON VALVE		10" to 11"	

ELECTRIC OVEN SELECTION					
KW	EQUIV. HEAT B's	SUPPLY VOLTAGE	LINE AMPS	SUPPLY CABLE AWG	
60	204,780	208	167	2 / 0	
50	170,650	220	132	1 / 0	
55	187,720	230	138	1 / 0	
60	204,780	240	145	1 / 0	
60	204,780	416	83.5	4	
50	170,650	440	66	4	
55	187,720	460	69	4	
60	204,780	480	72.5	4	



Care must be exercised when leveling steam dryers in final position. After leveling the dryer, check the downward pitch of the heat exchanger from front to rear with a level. Likewise, check the downward pitch of the return condensate manifold toward its outlet port. Absence of these downward pitches will result in probable water hammer and premature heat exchanger fracture and leakage.

The heat exchanger coils are designed to operate with dry steam only. The presence of condensate in the steam will cause water hammer and subsequent heat exchanger failure. The steam supply connection must be taken from the top of a well dripped steam main. If the supply run-out to the dryer exceeds twenty feet, it should be dripped just before the control valve with a proper trap and a dirt pocket. (See Figure 1)

Proper trap selection is mandatory. For low pressure units (15 psi or less) use an F & T (float and thermostatic) trap. For pressures above 15 psi up to 125 psi use bucket (inverted bucket) traps. DO NOT EXCEED 125 psi. Do not use thermo-dynamic, disc, or impulse traps.

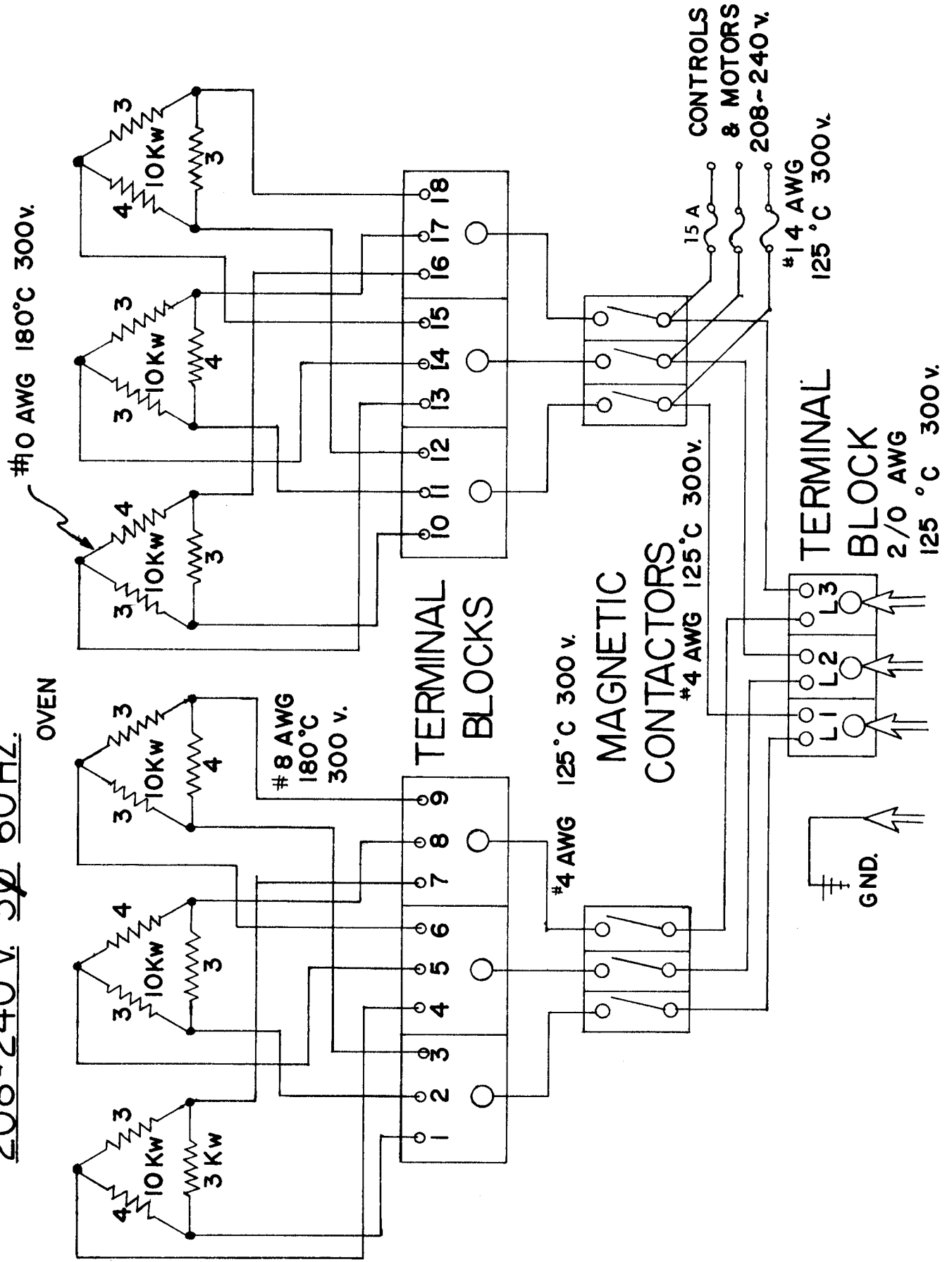
Condensate disposal is important. Do not elevate the condensate return line after an F & T trap. Drain only by gravity into a properly-vented low pressure return or condensate tank. A condensate line may be elevated after a bucket trap only if there is sufficient pressure to overcome the head. Determine steam pressure after deducting 12 psi for the control valve, coil, and trap losses. (Each foot of elevation requires 1/2 pound of remaining pressure.)

Trap location is essential. The trap inlet should be positioned 12" minimum below coil outlet to assure complete coil drainage.

# POWER DISTRIBUTION

# MODEL ADE-100

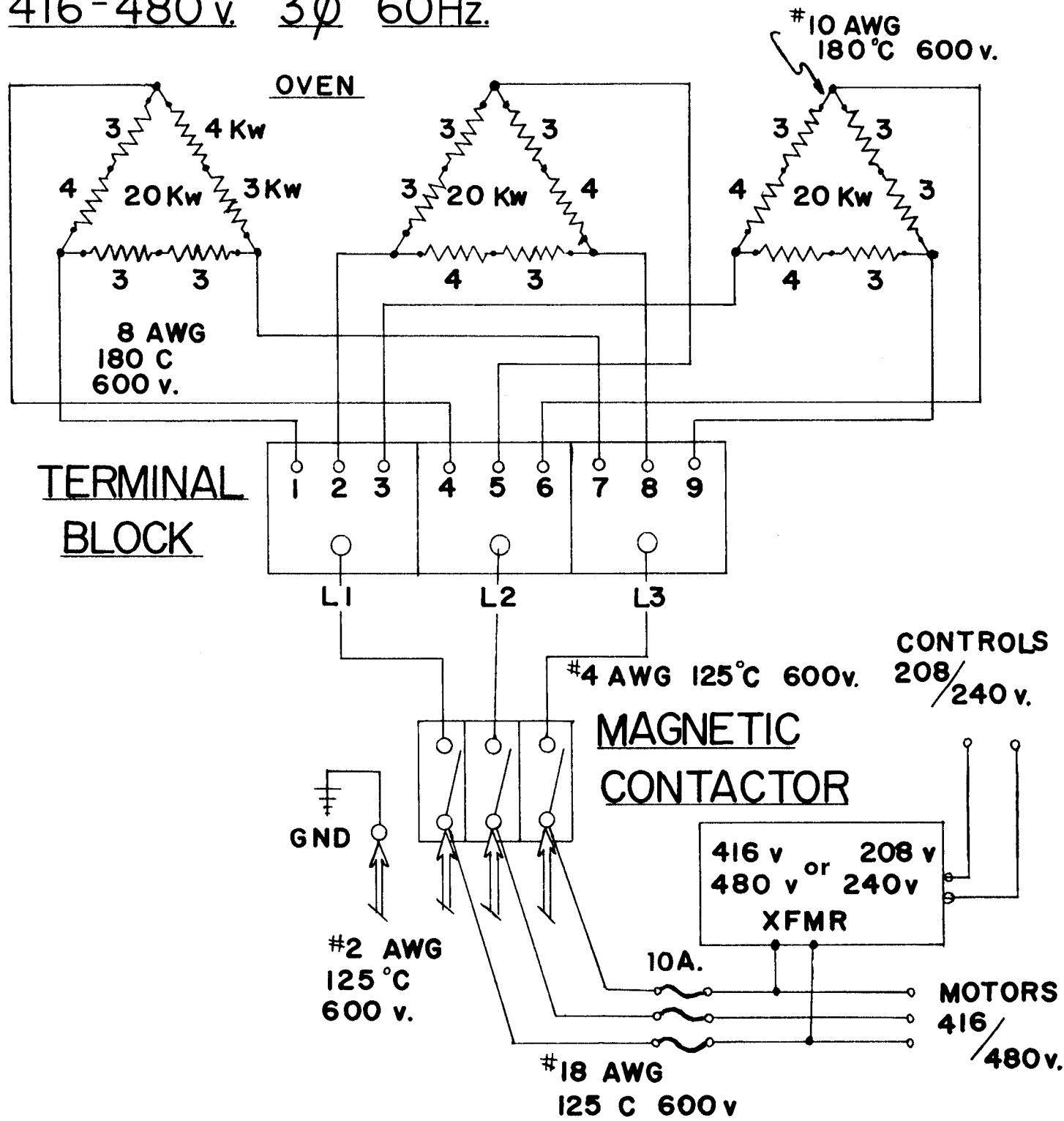
208-240 v. 3Ø 60HZ.



# POWER DISTRIBUTION

# MODEL ADE-100

416-480 v. 3 $\phi$  60Hz.



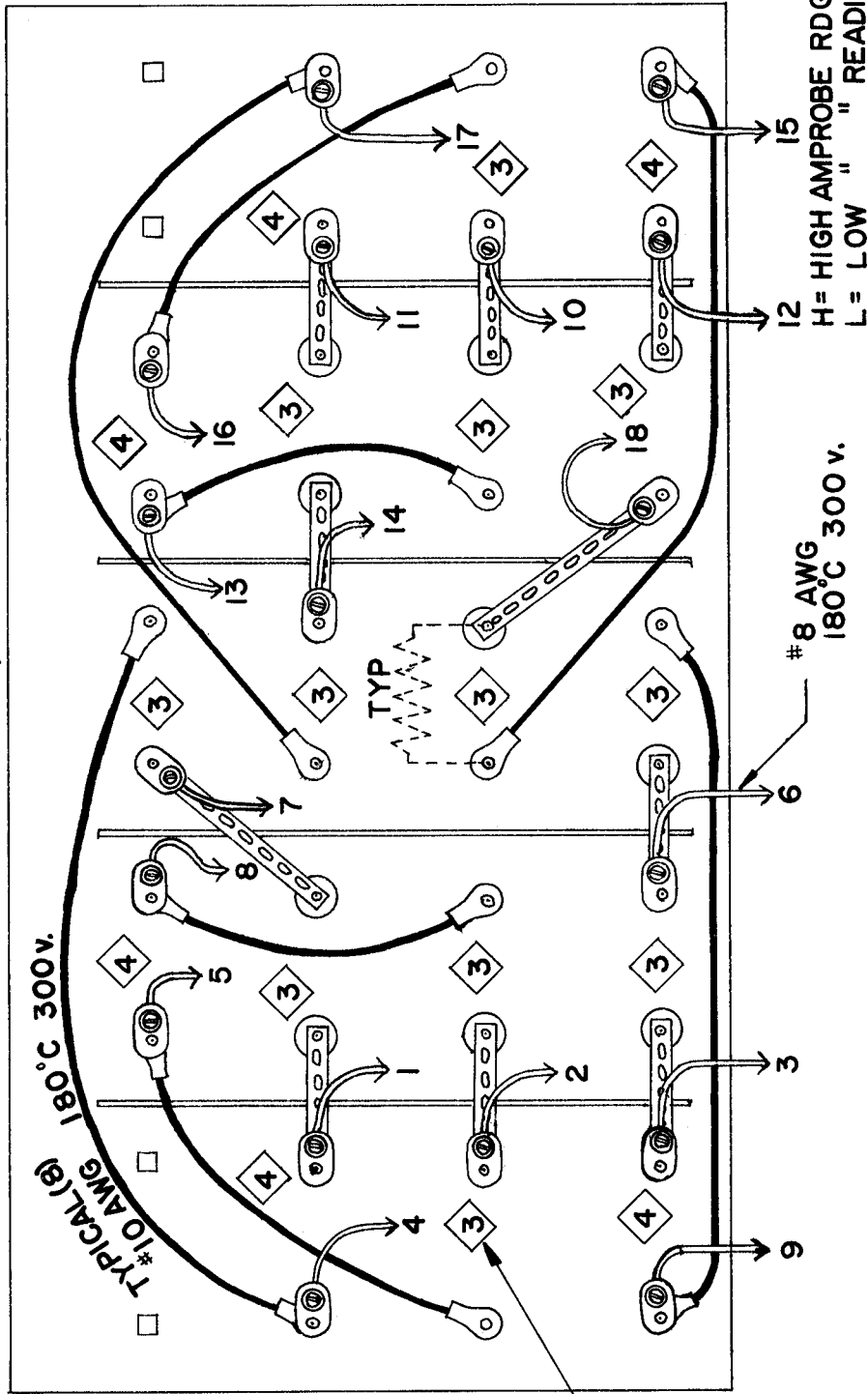


# 208/240v. ELEC. OVEN ADE-100

60 Kw, 60 Hz, 3φ

220-240v OVENS  
USE 240v. ELEMENTS

ELEMENT ARRANGEMENT, INTERCONNECTIONS, AND  
LINE LEAD IDENTIFICATION (NOT TO SCALE)



TEST  
1 - H  
4 - H  
7 - L  
10 - L  
13 - H  
16 - H

10	11	12	13	14	15	16	17	18
○	○	○	○	○	○	○	○	○
L1	○	○	L2	○	○	○	L3	○
TERMINAL BLOCK #1 TO CONTACTOR #1				TERMINAL BLOCK #2 TO CONTACTOR #2				

1	2	3	4	5	6	7	8	9
○	○	○	○	○	○	○	○	○
L1	○	○	L2	○	○	○	L3	○
TERMINAL BLOCK #1 TO CONTACTOR #1				TERMINAL BLOCK #2 TO CONTACTOR #2				

84 a.  
TYP.

208 v.  
H = 29 A.  
L = 25 A.  
avg.

240 v.  
H = 25 A.  
L = 22 A.  
avg.

# 8 AWG  
180°C 300v.

H = HIGH AMPROBE RDG.  
L = LOW " " READING

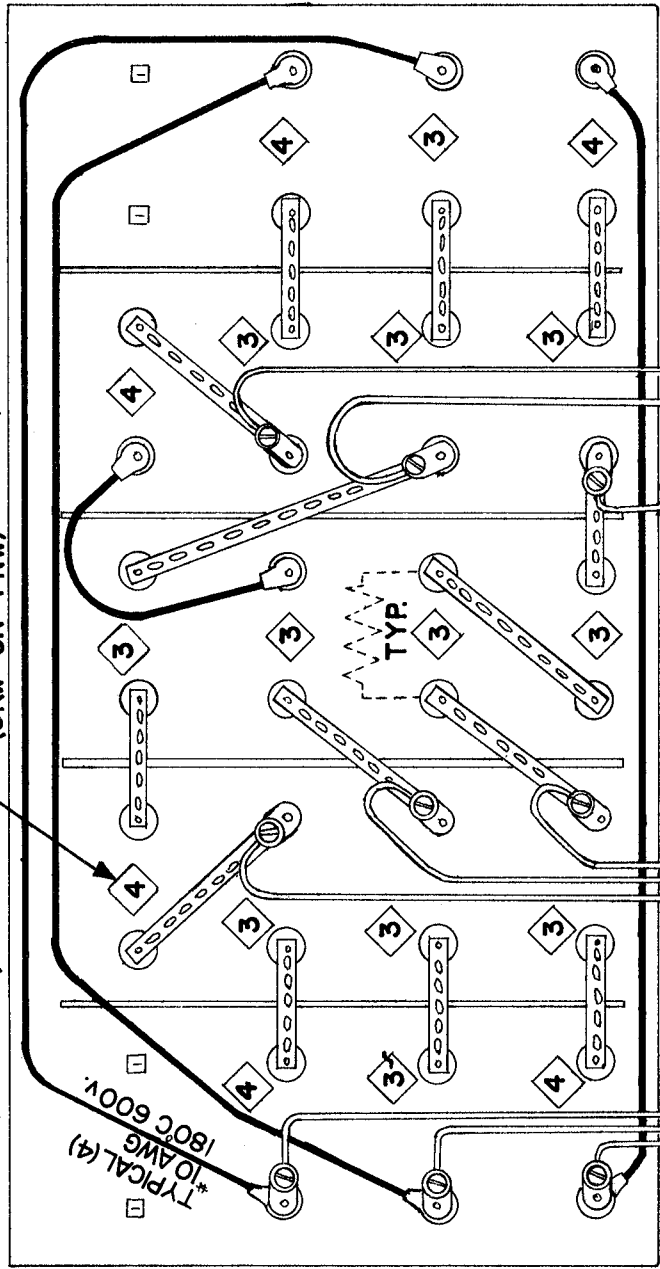
416 v. OVENS USE  
208 v. ELEMENTS.  
440 - 480 v. OVENS USE  
240 v. ELEMENTS.

ADE - 100

416 v. / 480 v. ELEC. OVEN  
ELEMENT ARRANGEMENT,  
INTERCONNECTIONS, &  
LINE LEAD IDENTIFICATION  
(NOT TO SCALE)

ELEMENT  
KW. RATING  
(3kw OR 4 kw)

60 KW, 60 Hz. 3 $\phi$



TEST  
1. L 3. H  
2. L 6. L  
4. H 7. L  
5. L 8. H  
6. L 9. L

416 v. 480 v.  
H = 29 AMPS H = 25 A.  
L = 25 A. L = 22 A.

TEST  
H = "HIGH"  
AMPROBE  
READING  
L = "LOW" AMPROBE  
READING

L3

TERM BLOCK

L2

L1

# 100 lb COMPUTER DRYER

