cissell
MANUFACTURING COMPANY

MAINTENANCE/SERVICE

110 lb. Laundry Dryer

MODELS

GAS	STEAM	ELECTRIC
L44CD42G	L44CD42S	L44CD42E
L44FD42G	L44KD42S	L44KD42E
L44KD42G		
L44RD42G		

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THIS MANUAL MUST BE GIVEN TO THE EQUIPMENT OWNER.

MAN4M 9/98 1C D0521

IMPORTANT NOTICES—PLEASE READ

For optimum efficiency and safety, we recommend that you read the Manual before operating the equipment. Store this manual in a file or binder and keep for future reference.

WARNING: **For your safety, the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury, or loss of life.**

- Do not store or use gasoline or other flammable liquids or vapors in the vicinity of this or any other appliance.

- WHAT TO DO IF YOU SMELL GAS

- **Do not try to light any appliances.**
- **Do not touch any electrical switch; do not use any phone in your building.**
- **Clear the room, building, or area of all occupants.**
- **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
- **If you cannot reach the gas supplier, call the fire department.**

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

WARNING: In the event the user smells gas odor, instructions on what to do must be posted in a prominent location. This information can be obtained from the local gas supplier.

WARNING: Wear Safety Shoes to prevent injuries.

WARNING: Purchaser must post the following notice in a prominent location:

FOR YOUR SAFETY
Do not store or use gasoline or other flammable vapors
and liquids in the vicinity of this or any other appliance.

WARNING: A clothes dryer produces combustible lint and should be exhausted outside the building. The dryer and the area around the dryer should be kept free of lint.

WARNING: Be safe, before servicing machine, the main power should be shut off.

WARNING: To avoid fire hazard, do not dry articles containing foam rubber or similar texture materials. Do not put into this dryer flammable items such as baby bed mattresses, throw rugs,undergarments (brassieres, etc.) and other items which use rubber as padding or backing. Rubber easily oxidizes causing excessive heat and possible fire. These items should be air dried.

WARNING: Synthetic solvent fumes from drycleaning machines create acids when drawn through the dryer. These fumes cause rusting of painted parts, pitting of bright or plated parts, and completely removes the zinc from galvanized parts, such as the tumbler basket. If drycleaning machines are in the same area as the tumbler, the tumbler's make-up air must come from a source free of solvent fumes.

WARNING: Do not operate without guards in place.

WARNING: Check the lint trap often and clean as needed but at least a minimum of once per day.

WARNING: Alterations to equipment may not be carried out without consulting with the factory and only by a qualified engineer or technician. Only **Manufacturer's** parts may be used.

WARNING: Remove clothes from dryer as soon as it stops. This keeps wrinkles from setting in and reduces the possibility of spontaneous combustion.

WARNING: Be Safe - shut main electrical power and gas supply off externally before attempting service.

WARNING: Never use drycleaning solvents, gasoline, kerosene, or other flammable liquids in the dryer. ***FIRE AND EXPLOSION WILL OCCUR. NEVER PUT FABRICS TREATED WITH THESE LIQUIDS INTO THE DRYER. NEVER USE THESE LIQUIDS NEAR THE DRYER..***

WARNING: Do not place items exposed to cooking oils in your dryer. Items contaminated with cooking oils may contribute to a chemical reaction that could cause a load to catch fire.

WARNING: Never let children play near or operate the dryer. Serious injury could occur if a child should crawl inside and the dryer is turned on.

WARNING: Never tumble fiberglass materials in the dryer unless the labels say they are machine dryable. Glass fibers break and can remain in the dryer. These fibers cause skin irritation if they become mixed with other fabrics.

WARNING: Before operating gas ignition system - purge air from natural gas or propane gas lines per manufacturer's instructions.

CISSELL DRYER WARRANTY

The Cissell Manufacturing Company (Cissell) warrants all new equipment (and the original parts thereof) to be free from defects in material or workmanship for a period of two (2) years from the date of sale thereof to an original purchaser for use, except as hereinafter provided. With respect to non-durable parts normally requiring replacement in less than two (2) years due to normal wear and tear, and with respect to all new repair or replacement parts for Cissell equipment for which the two (2) year warranty period has expired, or for all new repair or replacement parts for equipment other than Cissell equipment, the warranty period is limited to ninety (90) days from date of sale. The warranty period on each new replacement part furnished by Cissell in fulfillment of the warranty on new equipment or parts shall be for the unexpired portion of the original warranty period on the part replaced.

With respect to electric motors, coin meters and other accessories furnished with the new equipment, but not manufactured by Cissell, the warranty is limited to that provided by the respective manufacturer.

Cissell's total liability arising out of the manufacture and sale of new equipment and parts, whether under the warranty or caused by Cissell's negligence or otherwise, shall be limited to Cissell repairing or replacing, at its option, any defective equipment or part returned f.o.b. Cissell's factory, transportation prepaid, within the applicable warranty period and found by Cissell to have been defective, and in no event shall Cissell be liable for damages of any kind, whether for any injury to persons or property or for any special or consequential damages. The liability of Cissell does not include furnishing (or paying for) any labor such as that required to service, remove or install; to diagnose troubles; to adjust, remove or replace defective equipment or a part; nor does it include any responsibility for transportation expense which is involved therein.

The warranty of Cissell is contingent upon installation and use of its equipment under normal operating conditions. The warranty is void on equipment or parts; that have been subjected to misuse, accident, or negligent damage; operated under loads, pressures, speeds, electrical connections, plumbing, or conditions other than those specified by Cissell; operated or repaired with other than genuine Cissell replacement parts; damaged by fire, flood, vandalism, or such other causes beyond the control of Cissell; altered or repaired in any way that effects the reliability or detracts from its performance, or; which have had the identification plate, or serial number, altered, defaced, or removed.

No defective equipment or part may be returned to Cissell for repair or replacement without prior written authorization from Cissell. Charges for unauthorized repairs will not be accepted or paid by Cissell.

CISSELL MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY, STATUTORY OR OTHERWISE, CONCERNING THE EQUIPMENT OR PARTS INCLUDING, WITHOUT LIMITATION, A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OR A WARRANTY OF MERCHANTABILITY. THE WARRANTIES GIVEN ABOVE ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. CISSELL NEITHER ASSUMES, NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER WARRANTY OR LIABILITY IN CONNECTION WITH THE MANUFACTURE, USE OR SALE OF ITS EQUIPMENT OR PARTS.

For warranty service, contact the Distributor from whom the Cissell equipment or part was purchased. If the Distributor cannot be reached, contact Cissell.

IDENTIFICATION NAMEPLATE

The Identification Nameplate is located on the rear wall of the dryer. It contains the dryer serial number, product number, model number, electrical specifications and other important data that may be needed when servicing and ordering parts, wiring diagrams, etc. Do not remove this nameplate.

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110 LB. LAUNDRY DRYER
MAINTENANCE/SERVICE MANUAL

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SYMBOLS

The following symbols are used in this manual and/or on the machine. The numbers between () refer to the numbers on the machine surveys.

Symbol	Description	Part/Measurement
	**NOTE!**	
	**Hot! Do Not Touch** **Heiß! Nicht Beruhren** **Haute temperature! Ne pas toucher** **Caliente! no tocar**	
	**dangerous voltage** **tension dangereuse** **Gefährliche elektrische Spannung** **tension peligrosa**	
	**on** **marche** **Ein** **conectado**	
	**off** **arrêt** **Aus** **desconectado**	
	**start** **demarrage** **Start** **arranque de un movimiento**	
	**emission of heat in general** **êmission de chaleur en general** **Warmeabgabe allgemein** **emisión de calor**	
	**cooling** **refroidissement** **Kühlen** **enfriamiento**	

SYMBOLS

Symbol	Description	Part/Measurement
	**rotation in two directions** **rotation dans les deux sens** **Drehbewigung in zwei Richtungen** **movimiento rotativo en los dos sentidos**	
	**direction of rotation** **sens de mouvement continu de rotation** **Drehbewegung in Pfeilrichtung** **movimiento giratorio o rotatorio en el sentido de la flecha**	
	**End of Cycle**	
	**caution** **attention** **Achtung** **atencion; precaucion**	

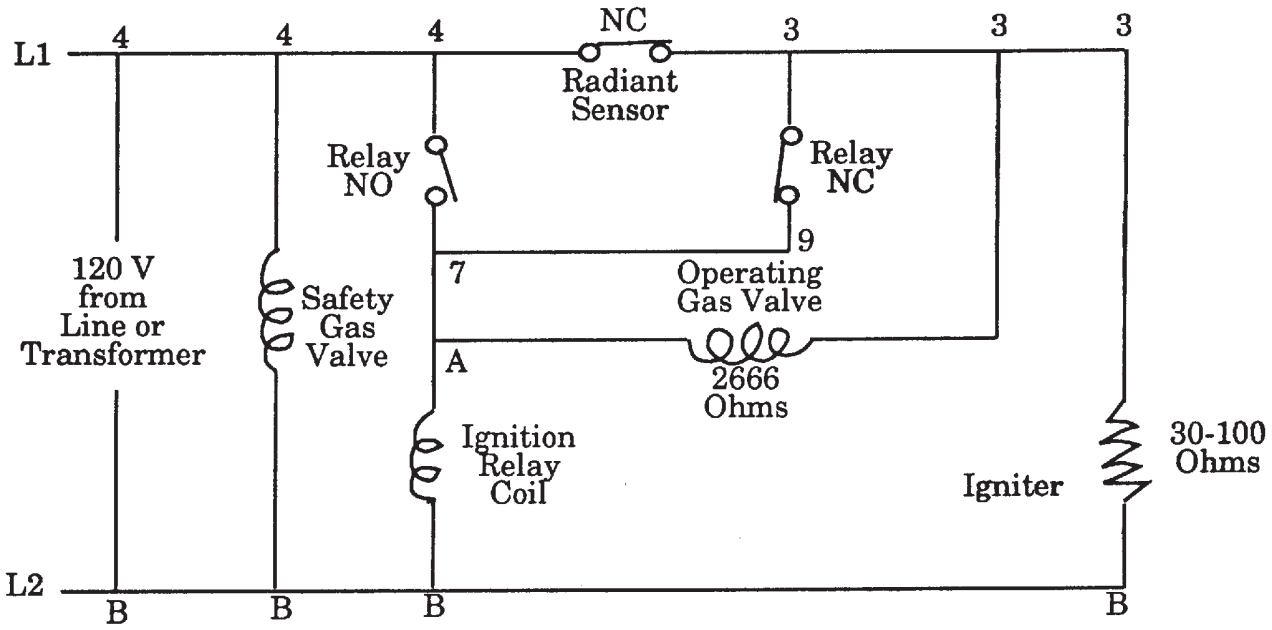
OPERATION OF THE NORTON IGNITION SYSTEM

Power to the ignition system is 120 volts. It is rated voltage or on higher voltage machines the 120 volts is from a transformer. The ignition system is powered through a timer or coin meter and a thermostat which calls for heat.

The two gas valves are plumbed into a single gas line and both must open before the gas can flow into the burners.

The following diagrams are line to line schematics of the ignition system. The numbers 4, 7, 3, 9, and letters A and B are terminals on the ignition relay.

FIGURE 1



NORTON IGNITION SYSTEM
Figure 1 (Start of Cycle)

Step #1

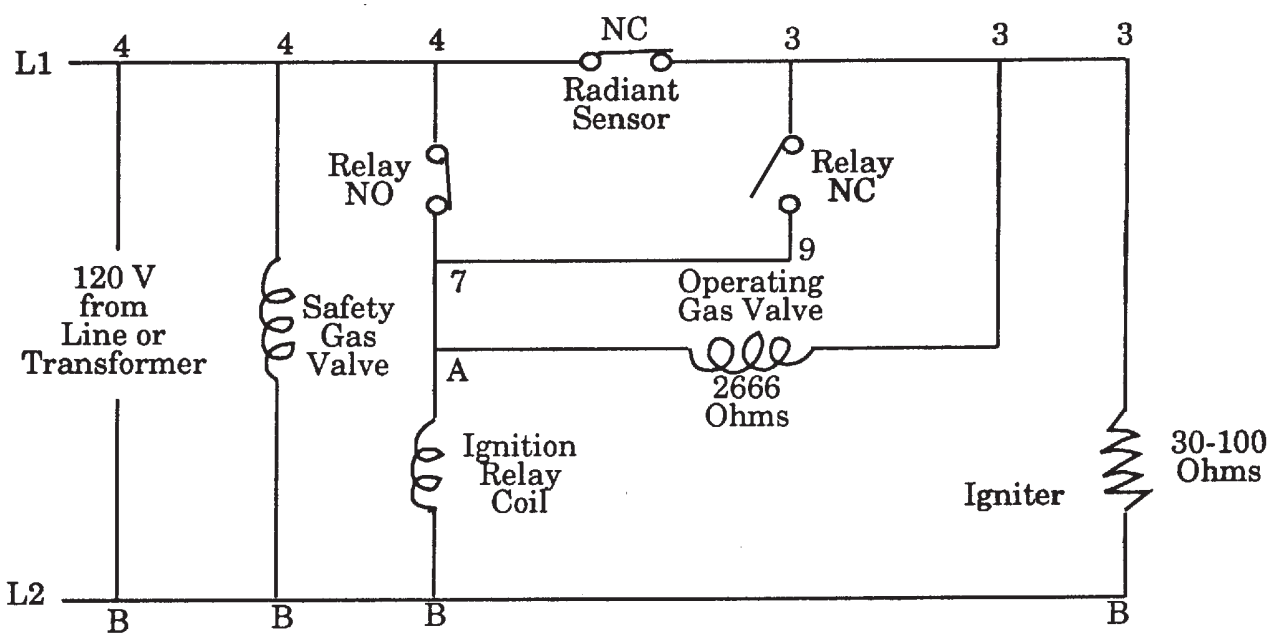
a. The Safety Gas Valve is connected across the lines and opens immediately as soon as a need for heat is indicated by the thermostat.

b. The Ignition Relay Coil is energized through the normally closed (NC) contacts of the Radiant Sensor and the NC contacts of the relay. NOTE: Figure 1 shows the electrical circuit of the relay just before it is energized. Figure 2 shows the circuit a *moment later*.

c. The igniter is energized through the NC contacts of the Radiant Sensor.

d. The Operating Gas Valve is connected such that the same 120 volts is applied to both sides of the Gas Valve and the valve stays closed.

FIGURE 2



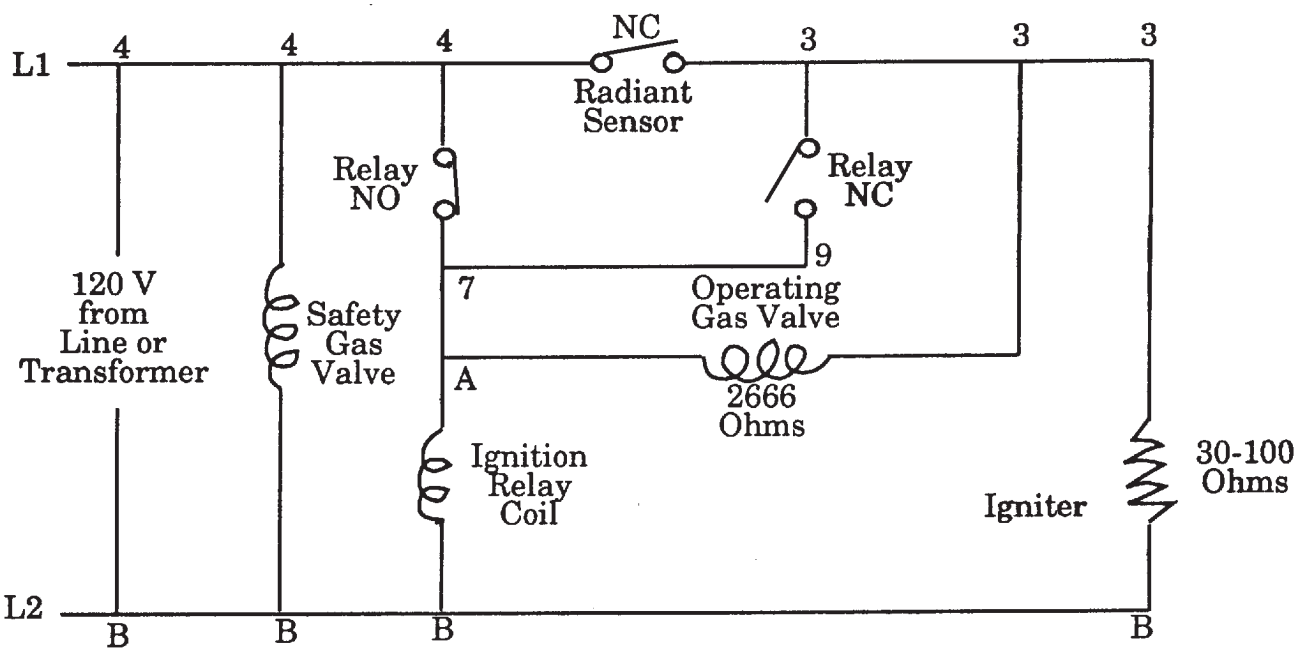
NORTON IGNITION SYSTEM
Figure 2 (Start of Cycle)

Step #2

a. The Ignition Relay closes now and the Relay Coil stays energized by being powered through the normally open (NO) contacts of the Ignition Relay which *close* before the NC contacts *open*.

b. The operating gas valve still has the 120 volts applied to both sides of the gas valve and the valve stays *closed*.

FIGURE 3



NORTON IGNITION SYSTEM
Figure 3 (About 20 Seconds Later)

Step #3

a. The Ignition glows *red hot*, which causes the Radiant Sensor to *open* its NC Contacts, which de-energizes the Igniter.

b. As the Radiant Sensor NC Contacts *open*, the 120 volt to one side of the operating Gas Valve Coil is removed and an electrical circuit is formed through the NO Contacts of the Ignition Relay, through the Gas Valve and through the Igniter, and the Gas Valve *opens*. The relatively low resistance of the Igniter allows nearby **full** voltage to be applied to the operating Gas Valve and nearby **zero** voltage to the Igniter and the Igniter is de-energized for all practical purposes.

c. As the raw gas flows against the *red hot* Igniter, ignition takes place. The radiant gas flame replaces the radiant glowing of the Igniter and the Radiant Sensor NC Contacts remain *open*.

IGNITION OPERATION

The flame will burn until the thermostat opens the circuit or until the time on the timer or coin meter expires.

The following summarizes the ignition operation:

- Start machine drying cycle.
- Carbide igniter will get *red hot*.
- Then, gas valve will open.
- The gas burners are ignited by the carbide igniter.
- Igniter will shut off and burners will remain on during drying cycle.
- Opening tumbler door will cause gas to extinguish. Shut door and gas will not light until flame sensor cools and normal ignition cycle begins.

NOTE

NOTE
Push "start" switch *after* door is shut.

- If gas does not light, then the sensor will cool down and restart the ignition cycle.

SAFETY FEATURES

SAFETY FEATURES

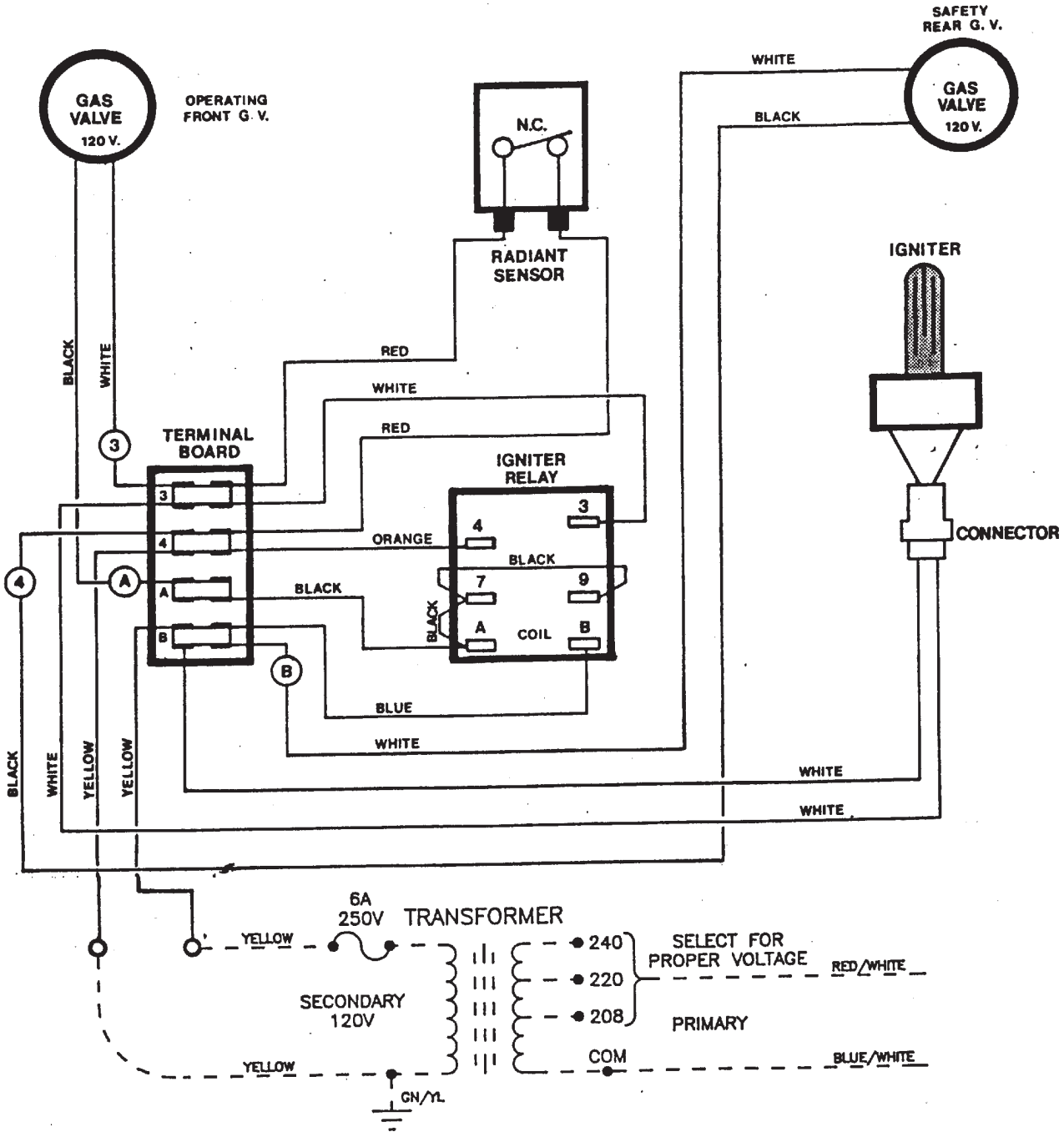
Power Interruptions During Burning of the Gas

Both gas valves are de-energized and the gas is shut off. The Ignition Relay is also de-energized and returns the contacts to the NO and NC positions. Even with resumption of power, the operating gas valve stays closed until the NC contacts of the Radiant Sensor close (about 30 seconds from time of power interruption). A normal ignition cycle begins at this time.

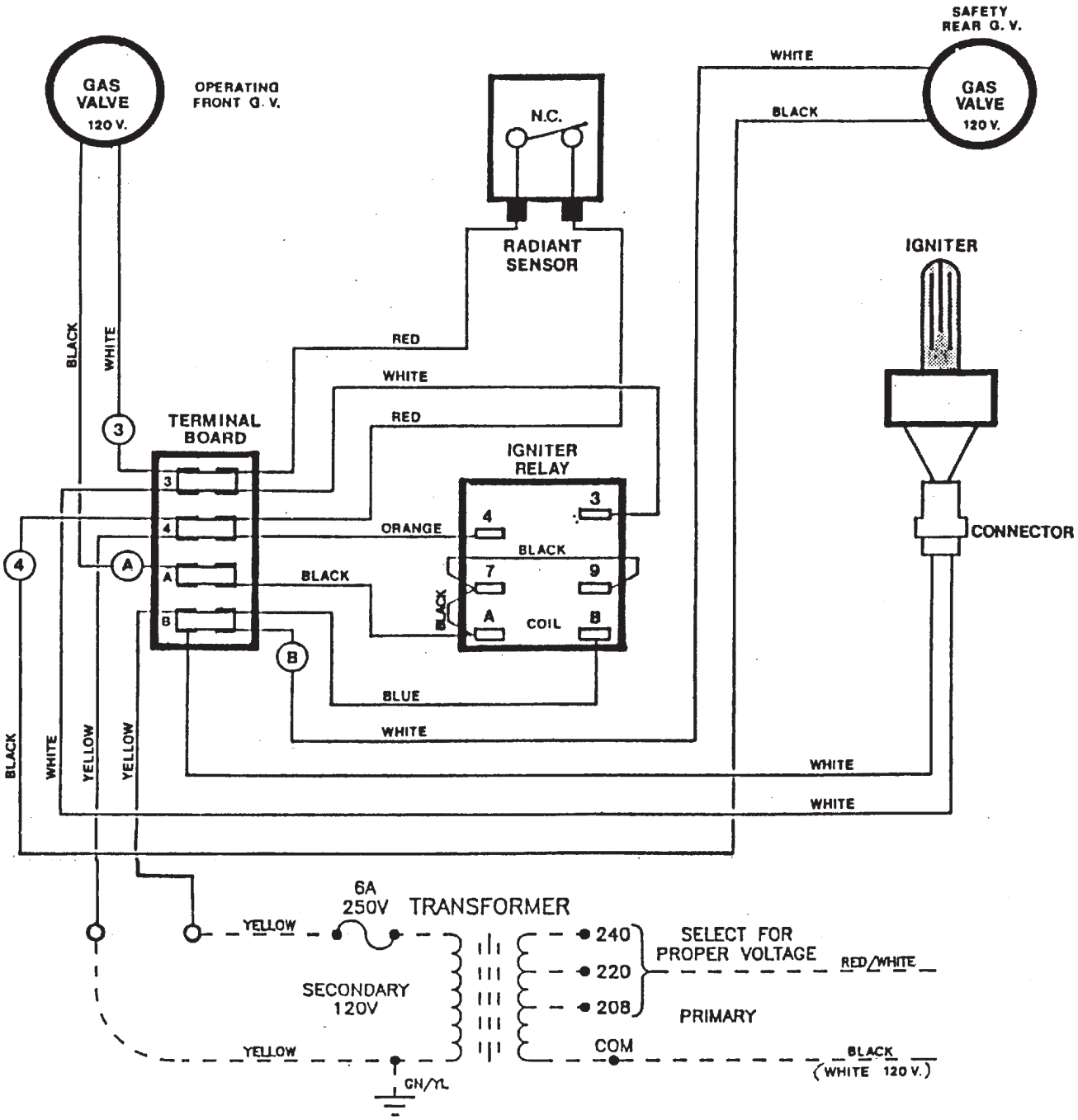
Burner Doesn't Light Because of Low Voltage or Low Gas Pressure

The operating gas valve will be energized for about 30 seconds and then the NC contacts of the Radiant Sensor will be closed. 120 volts is applied to both sides of the operating gas valve and it closes to shut off the gas. A normal ignition cycle begins at this time.

120 Volts; 50/60 HZ; 1 Phase - TWL1512



120 Volts; 50/60 HZ; 1 Phase - Gas Dryers - TWL1587
Automatic Computerized Drying Control



TEST PROCEDURE

TEST PROCEDURE

1. If igniter does not glow *red*, disconnect and test with separate 120V. Replace if it does not glow *red*. If it is damaged or cracked, replace.

2. Check wiring of ignition system parts per wiring diagram.

3. Gas valves must be open (click) when dryer is energized. Burners will ignite after 12 to 25 seconds.

4. After flame is burning, Igniter will go out. If both gas valves do not open, then replace.

5. If Igniter does not go out, then replace Radiant Sensor. If the Radiant Sensor glass is broken, replace it.

6. Open and close dryer loading door after gas has started burning. When door is closed, gas should not flow until radiant sensor has cooled and Igniter recycles.

INSTRUCTIONS FOR DIRECT IGNITION SYSTEM OPERATION

INSTRUCTIONS FOR DIRECT IGNITION SYSTEM OPERATION

1. Open manual gas valve; handle should be parallel with gas line.

2. Start machine drying cycle. The igniter will glow *red hot*; the gas valves will open and the burners will ignite.

3. The igniter will shut off and the burners will continue burning during heat cycle.

4. Opening the tumbler loading door will cause the gas to extinguish. Shut the door and the gas will not flow until the flame sensor has cooled. Push the **"start"** button to begin cycle after door is closed. If ignition fails, wait for five minutes to restart.

5. To shut off dryer, close the manual gas valve. The handle should be at a right angle to the gas line. Turn off the main electrical supply switch.

CAUTION

CAUTION
Check igniters with 120V before installing on dryer.

TROUBLE ANALYSIS FOR ENERGY SAVER DRYERS AND THE NORTON IGNITION SYSTEM

Trouble analysis for Energy Saver Dryers and the Norton Ignition System.

CAUTION
Problems with the Norton Ignition System can also be the result of the following:

EXHAUST PIPE SIZE

1. Exhaust air flow restriction. Exhaust pipe size **must be larger** than the **exhaust opening**. Refer to chart in manual.

DRYER INLET AIR

2. **Dryer inlet air** is a **MUST** for each unit. It must be 4 to 6 times the combined areas of the dryer exhaust outlet. Refer to chart in manual.

DRYER PANELS

3. All dryer **panels must be in place** and on machine for proper operation.

GAS PRESSURE

4. Gas pressure must be 7-9 1/2 inches WC for natural gas and 11 inches WC for propane or butane (bottled) gases.

5. Refer to chart for correct gas pipe sizes and lengths. The 3/4 inch gas pipe must be the minimum gas supply pipe for the dryer and over 50 ft., 1 inch pipe size.

MAIN BURNER ORIFICE SIZE

6. Main burner orifices **must be** correct size. They are calculated with the following information:
   a. Your locality heating value of gas, BTU/cu. ft.
   b. Local specific gravity of gas.
   c. Gas manifold pressure inches of WC.
      1) 3.5 inches WC pressure for natural gas.
      2) 11 inches WC pressure for propane or butane gases.
   d. Gas input rate per each burner orifice.

TROUBLE ANALYSIS FOR ENERGY SAVER DRYERS AND THE NORTON IGNITION SYSTEM (continued)

7. Voltage **must be** identical to what is on the Electrical Rating Plate. Prevent low voltage; it causes longer drying operation.

8. Back Draft Damper **must** swing **full open** to prevent air flow restrictions. (Check for full open operation every 6 months.) Non-operative or erratic operation of exhaust dampers will cause air flow switches to shut off gas and will result in longer drying time.

NOTE

NOTE
The above should be checked and corrected before attempting to troubleshoot the Norton Ignition System.

MAINTENANCE

MAINTENANCE

1. **CLEAN LINT TRAP DAILY.** Remove lint before starting day's operation. A clean lint trap will increase the efficiency of the dryer, as the moisture-laden air will be exhausted more quickly.

2. **CLEAN BASKET AND SWEEP SHEETS.** Clean periodically and/or as often as required. The basket and sweep sheets are easily accessible by removing the front panel of the dryer.

3. **GEAR REDUCER.** Maintain the correct oil level. See separate page on Gear Reducer Operation and Maintenance, for detailed information.

4. **PULLEYS AND BELTS.** Keep belts clean. Oil and dirt will shorten the useful life of the belt. Never allow a belt to run against the belt guard. Check periodically for alignment. Pulley shafts must be parallel and the grooves must be aligned. Check and re-tighten pulley set screws periodically. Check belt tension periodically. Lower motor to increase tension by adjusting the nuts fastening the motor plate to the rod connected to the Gear Reducer.

5. **ELECTRIC MOTORS.** Keep motors clean and dry. Motors having ball bearings are packed with sufficient grease for approximately five years of normal operation. After five years, the bearings and housing should be cleaned thoroughly. Repack each bearing and the cavity in back of the bearing on-third full with Chevron Grease No. SR1-2.

   Motors having wool packed sleeve bearings are oiled at the factory for one year of normal operation. After one year, add annually one-half teaspoon of electric motor oil or S.A.E.#10 to each bearing. For 24 hour per day operation, add one teaspoon of oil annually.

   If motors overheat, check voltage and wiring. Low voltage, inadequate wiring, and loose connections are the main cause of motor failure.

MAINTENANCE (Cont'd)

6. **STEAM HEATING UNITS.** Keep steam coils clean. Check periodically and clean often, as required. Remove lint and dirt build-up from fins. Dirty fins decrease the efficiency of steam heated units.

7. **GAS BURNERS.** Keep burners clean. Check periodically and clean often.

8. **EXHAUST SYSTEM.** Periodically check and clean.

9. **CLEAN OUT PANEL.** (Energy Saver Gas Models) Remove this panel, located on the heating unit, and clean the inside area of lint and dirt on a regular basis.

10. **DRYER AREA.** Keep dryer area clean and free from combustible materials, gasoline and other flammable vapors and liquids.

11. **MAKE-UP AIR.** Do not obstruct the flow of combustion (make-up) air and ventilating air.

12. **GAS PRESSURE.** Periodically check gas pressure.

13. **DRYER VOLTAGE.** Periodically check dryer voltage per dryer Rating Plate.

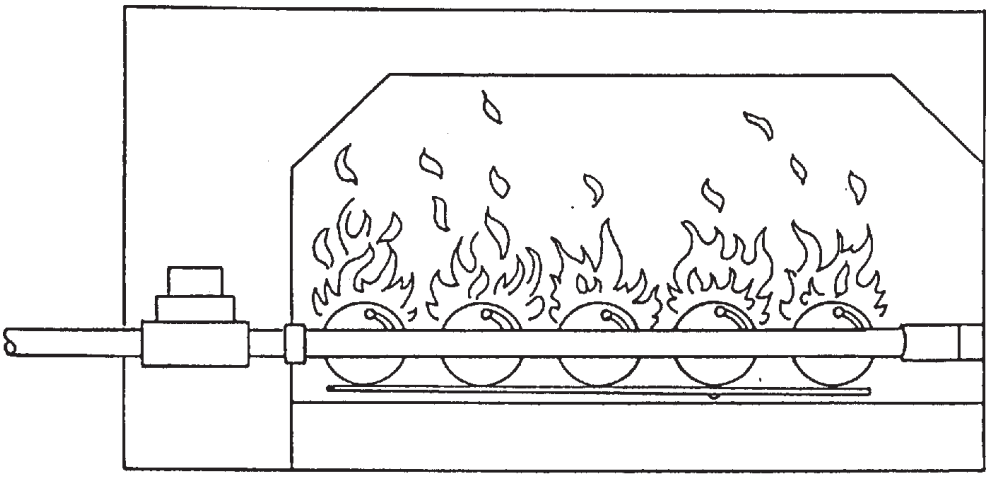
BURNER AIR INLET SHUTTERS ADJUSTMENT

Type of Gas	Burner Air Inlet Shutters Adjustment
Natural Gas	1/2 Open
Liquid Petroleum	1/4 Open
Manufactured Gas	1/16 Open

Air Shutters Adjustment

Proper Method: Close air shutters to yellow tip, then open air shutters to blue flame tip. Orange tips are impurities in the air such as lint, dust, etc.

Burners Air Inlet Shutters are correctly adjusted when flame is primarily blue.

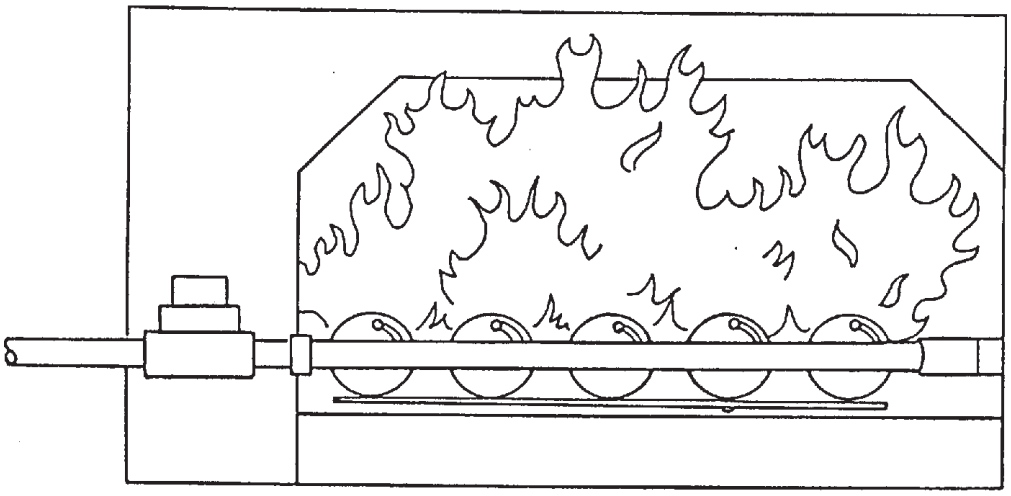


CORRECT

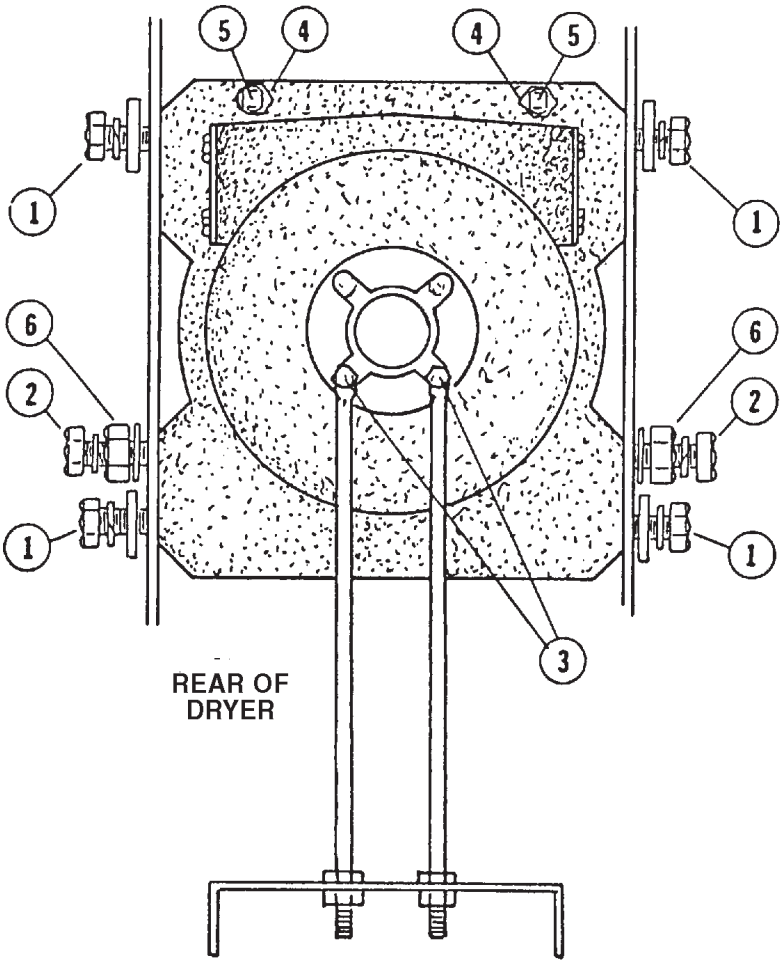
NEED TO PROVIDE CORRECT AIRFLOW THROUGH THE DRYER

Need to Provide Correct Airflow Through the Dryer

This flame pattern indicates the Burner Air Inlet Shutters are correctly adjusted, but air through the dryer is insufficient. This condition indicates excessive lint in the lint compartment, lack of make-up air in the room, restricted exhaust duct, or a vacuum in the room caused by an exhaust fan.



WRONG


5
4
4
5
1
1
6
6
2
2
1
1
3
REAR OF
DRYER

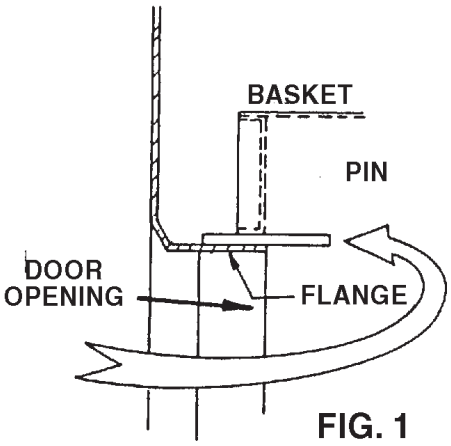

BASKET
PIN
DOOR
OPENING
FLANGE

FIG. 1

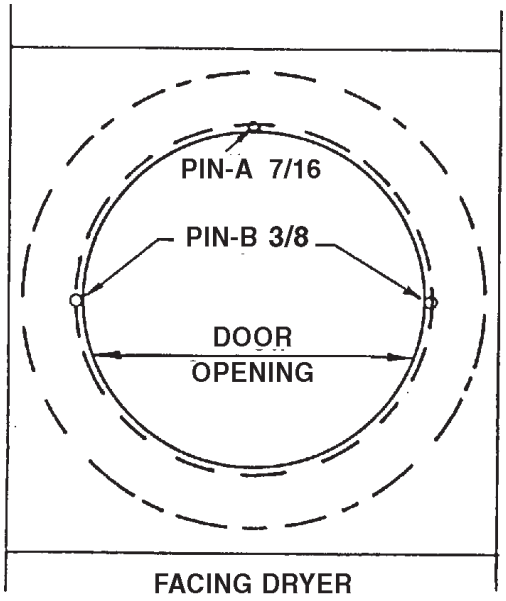

PIN-A 7/16
PIN-B 3/8
DOOR
OPENING
FACING DRYER

FIG. 2

INSTRUCTIONS FOR ALIGNING BASKETS ON CISSELL 110 LB. DRYERS

INSTRUCTIONS

1. Loosen bolts number one (1) through five (5).

2. Place pin “A” in position shown in figures 1 and 2.

3. Check pins “B” at position shown in figures 1 and 2 for equal clearance.

4. If pin “B” clearance is unequal, adjust at nut #6.

5. When clearance at pin “B” is correct, tighten bolts #1 in the following order, as viewed from rear of dryer, top right, bottom left, top left and bottom right.

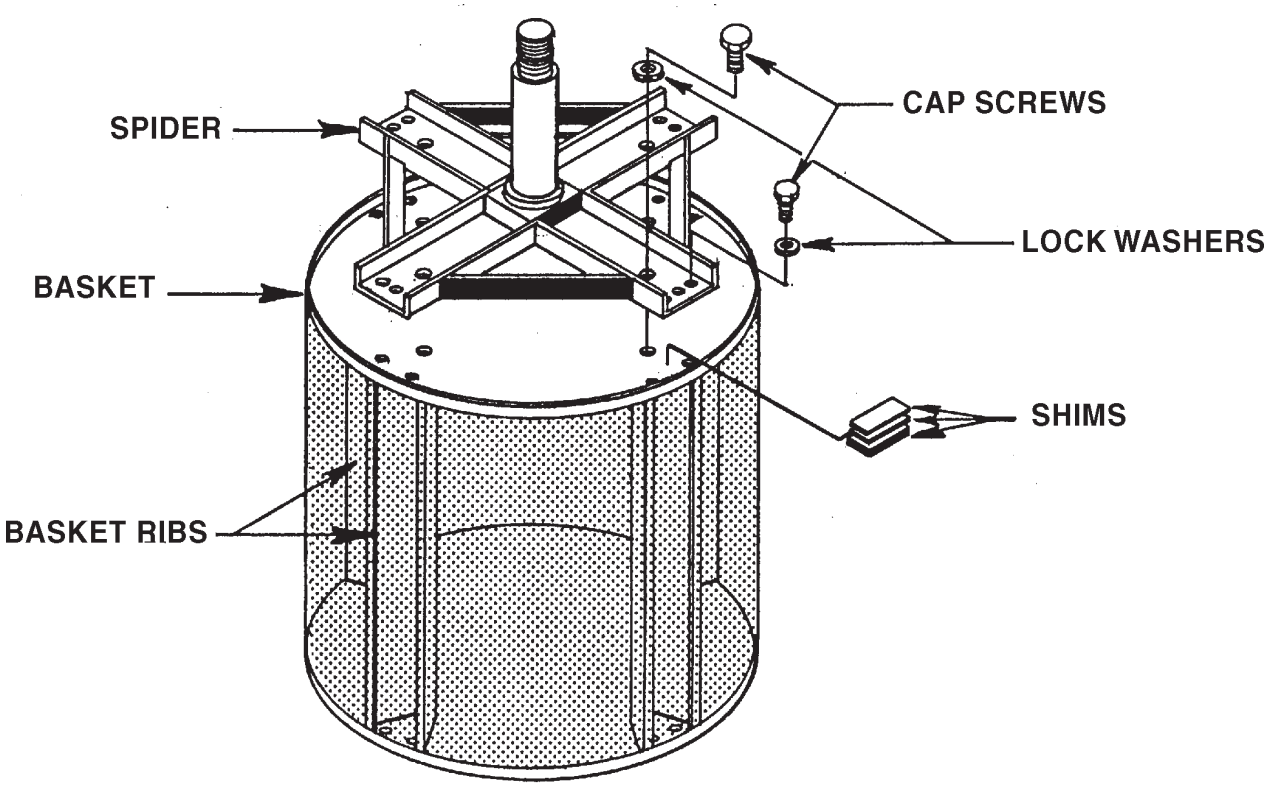
6. Tighten bolts #5 until flush against back of dryer. Tighten lock nut #4 to secure bolt #5 in position.

7. Tighten bolts #2 and #3.

8. Remove pin “A” and check for proper clearance at points “A” and “B”. If clearance is incorrect, repeat the above steps.

NOTE
Use short sections of round steel rod for pins or drill bits may be used in place of round rod.

Shimming the Basket and Spider Assembly



INSTRUCTIONS FOR SHIMMING THE BASKET AND SPIDER ASSEMBLY

This procedure is normally necessary when replacing either the basket or the spider assembly on any Cissell dryer. The alignment of these two parts is crucial in assuring a true running basket.

A. Align the basket as per instructions on the previous page.
B. Rotate the basket to determine where the most out-of-round point is (where the basket scrapes or comes closest to scraping the sweep sheet).
C. Mark this position and the nearest rib to this position. If it is between two ribs, both ribs may need to be shimmed.
D. Remove the basket from the dryer (do not loosen the alignment bolts).
E. With the basket on the floor (spider up), loosen the cap screws and tie rod nuts enough to insert one or two shims between the spider leg and the basket at the marked position. With shims in place, tighten the screws and nuts.
F. Install spider and basket assembly and check again.
G. If basket is still out-of-round, start at *Step B* and repeat procedure.
H. When shimming is completed, re-align basket.

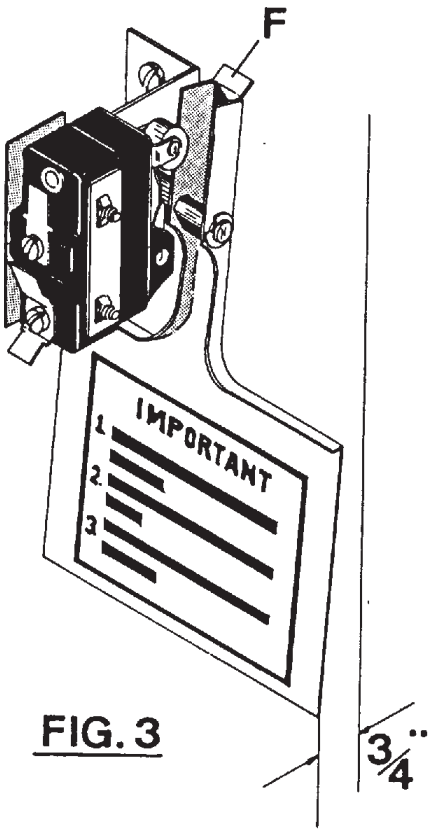


FIG. 3

FIG. I

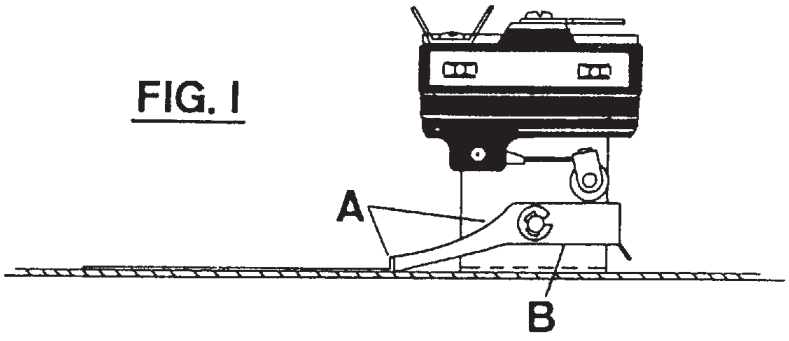
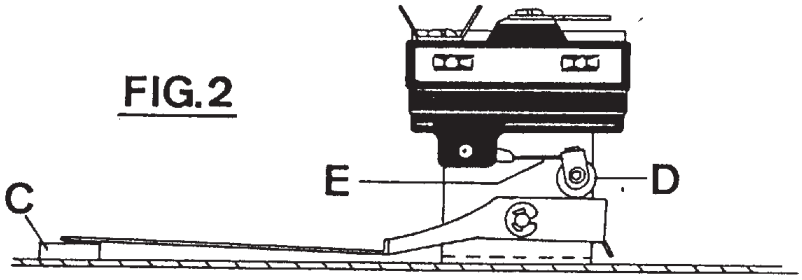


FIG. 2



AIR SWITCH ADJUSTMENT

1. Shut off current; disconnect leads and remove air switch.
2. Lay air switch assembly on flat surface. Adjust air blade at "A" (figure 1) so that air blade lays flat and surface "B" is parallel to the flat surface.
3. Place 3/8" x 5/8" spacer bar or equivalent "C" (figure 2) under air blade in position shown; hold switch mounting bracket firmly and adjust switch actuator "D" with needle nose pliers at "E" by twisting actuator right or left, whichever is needed, so that switch closes when end of air blade engages bar "C".
4. Maximum opening of air switch must be no greater than 3/4" (figure 3). Bend tab "F" in or out to maintain this dimension.
5. Re-install air switch assembly on rear of dryer.
6. Re-check operation of air blade. Switch must close before air blade engages face of opening and re-open before stop "F" engages.

INSTRUCTIONS FOR DRYERS WITH REVERSING CONTROL TIMER

Instructions

In operation, coasting of basket increases, making it necessary to readjust reversing timer.

CAUTION
Failure to do this will cause the thermal overload units for the basket to cut-out unnecessarily and probably damage the gear reducer.

Adjustment of Reversing Timer Dwell Time

CAUTION
Dryer power supply must be shut off before adjusting timer.

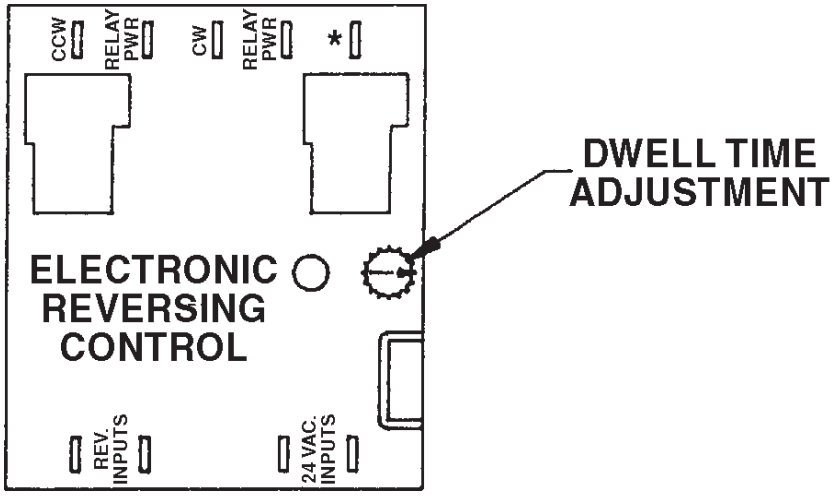
The dwell time is the time from when the motor turns “off”, to when it turns “on” again in the opposite direction.

Turning the dwell adjustment knob counter-clockwise increases the dwell time and turning it clockwise decreases the dwell time.

Recommended dwell time for the basket to stop completely is 5 to 7 seconds. Minimum basket stopping time is
4 seconds.

NOTE
Select non-reversing or reversing before starting dryer.

NOTE
Fan rotates counter-clockwise as viewed from back end of motor. See arrow on motor support. to change rotation, reverse power leads L1 and L2.



INSTRUCTIONS FOR DRYERS WITHOUT REVERSING CONTROL FAN AND BASKET ROTATION

Instructions

NOTE
Fan rotates counter-clockwise as viewed from back end of motor. See arrow on motor support.

Basket rotates counter-clockwise as viewed from back end of motor. See arrow on motor support.

Basket rotates counter-clockwise as viewed from front of tumbler.

To change rotation of both fan and basket, reverse power leads L1 and L2.

To change rotation of fan only, reverse motor leads F1 and F2.

To change rotation of basket only, reverse motor leads B1 and B2.

LARGE GEAR REDUCER MAINTENANCE

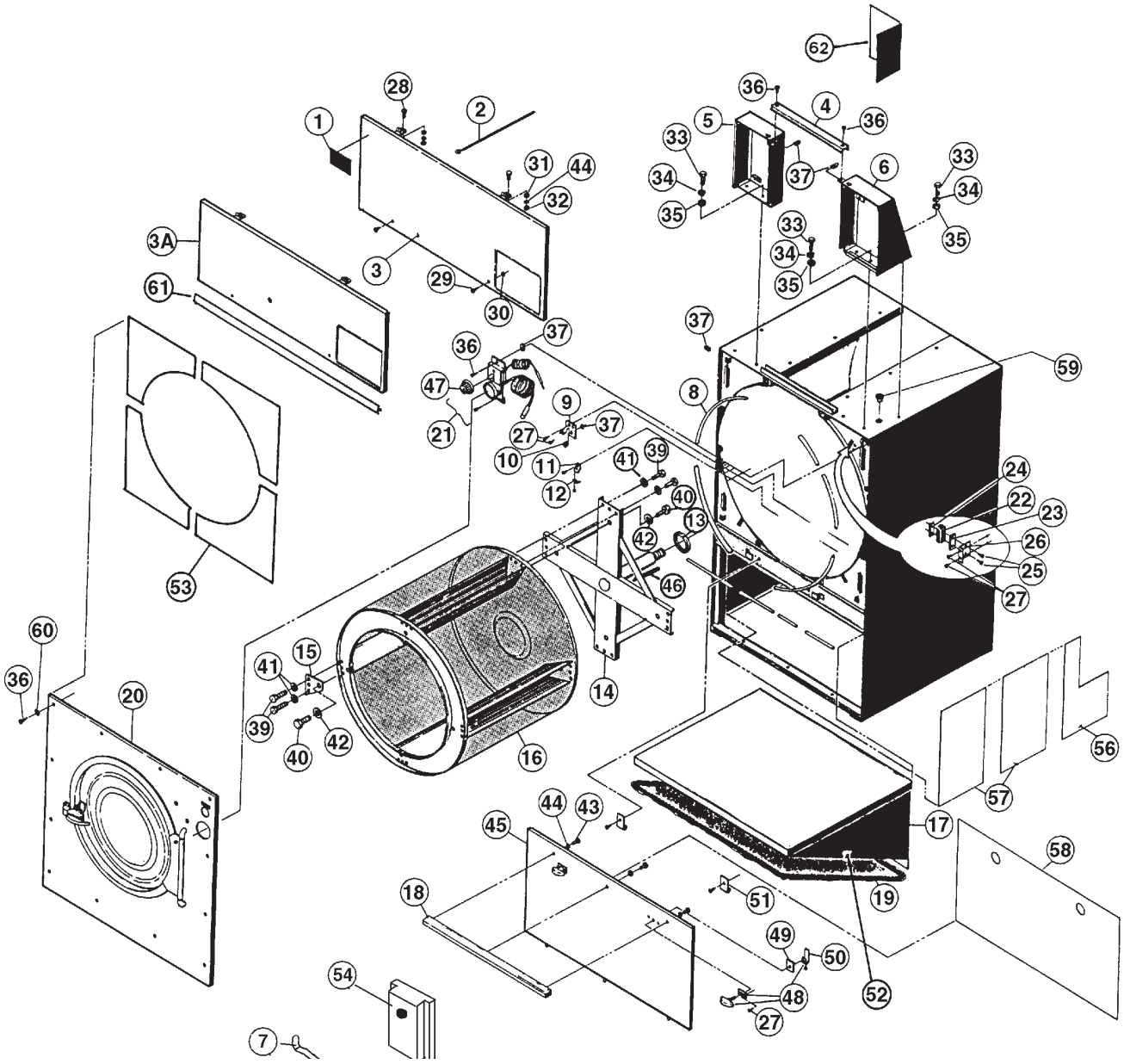
LARGE GEAR REDUCER MAINTENANCE

Before placing the dryer in operation, check the oil level. If the oil level is correct, it can be seen through the sight glass on the right hand side of the gear reducer (facing rear).

If oil must be added, remove the pop-off valve at the top of the gear reducer and add as needed.

CHANGE OIL ONCE EVERY 6 MONTHS.

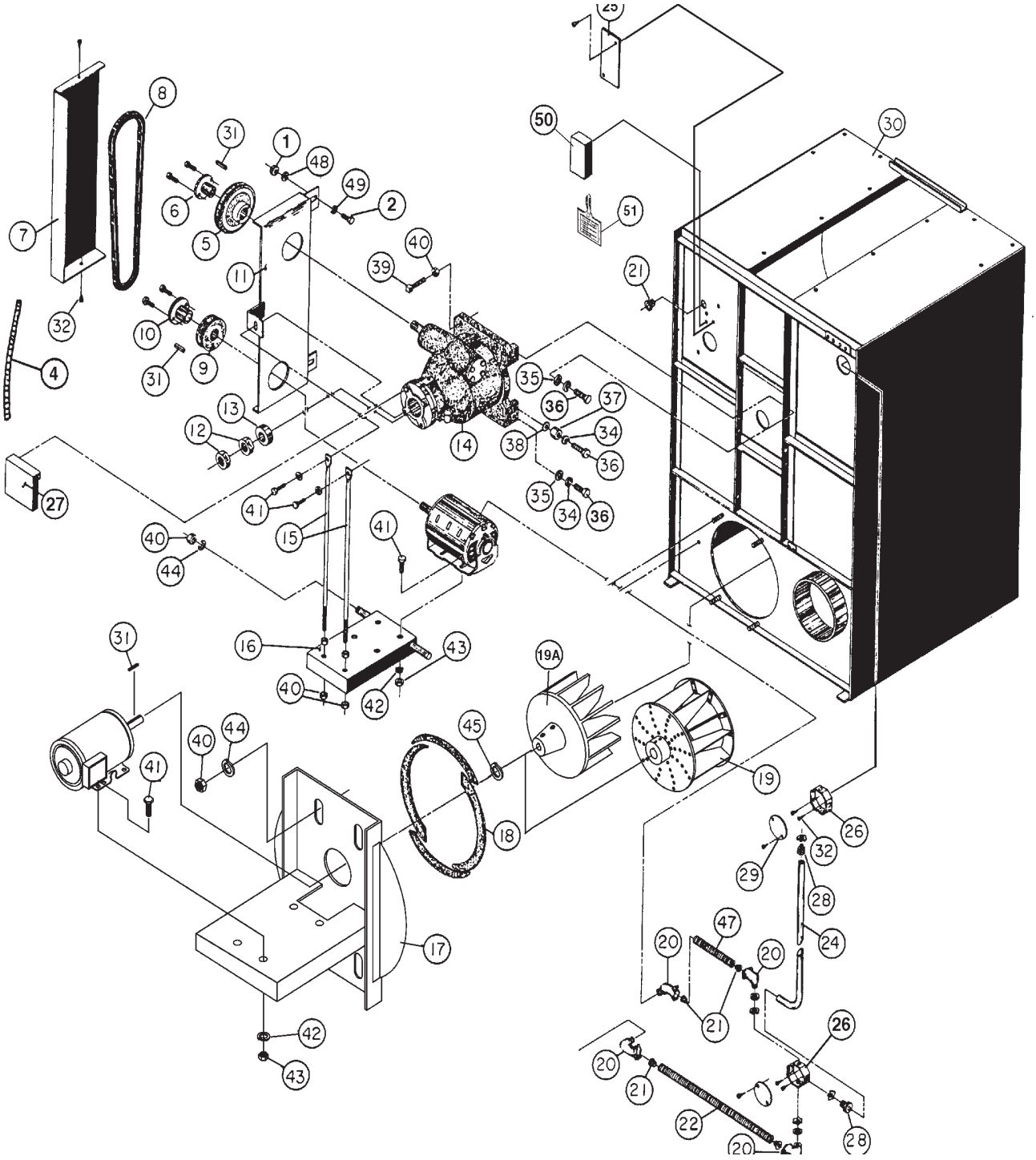
110 lb. Laundry Dryer (Front Exploded View) (Illustration)



1	TU8013	Cissell Nameplate
2	TU5739	Support Rod
3	TU8095	Access Door “C” and “F” (Specify Color)
	TU9847	Access Door “K” and “R” (Specify Color)
3A	TU8099	Access Door “Static Steamer” (Specify Color)
4	TU5674	Control Box Brace
5	TU7159	Left Control Box
6	TU9866	Right Control Box
8	K118	Gasket Set
9	TU2486	Thermostat Bracket
10	TU2477	Thermostat
11	TU5337	Thermostat Bulb Support
12	F646	5/16” Clamp
13	TU5290	Felt Seal
14	K109	Spider “C” and “F”
	K348	Spider “K” and “R”
15	TU5397	Outside Rib Plate
16	TU6469	Basket “C” and “F”
	TU9856	Basket “K” and “R”
	K421	Basket and Spider “C” & “F”
	K383	Basket and Spider “K” & “R”
17	TU10345	Lint Screen Hood
18	TU7473	Door Handle
19	K368	Lint Screen ONLY
	K121	Wire Frame ONLY
20	TU7802	Front Panel Asm. “R” & “F” Gas * (specify color)
	TU5934	Front Panel Asm. “C” & “K” Electric and Steam * (specify color)
	TU9895	Front Panel Asm. “K” Model * (specify color)
	TU9896	Front Panel Asm. “R” Model * (specify color)
21	TU6030	Temperature Control *
22	TU1979H	Door Switch
23	TU1770	Insulation
24	TU1771	#6 Twin Speed Nut (Pkg. of 12)
25	TU3219	#6 x 1” Screw
26	TU2373	Mounting Bracket
27	TU7733	#8 x 1/2” Screw (Pkg. of 6)
28	TU3479	#10 - 32 x 7/16” Truss Screw
29	FG343	Screw Fastener
30	FG345	Retaining Washer
31	P104	1/4” Cut Washer (Pkg. of 6)
32	TU2842	#10 - 32 Hex Nut (Pkg. of 6)
33	TU3246	3/8” - 16 x 1” Hex Head Screw (Pkg. of 6)
34	VSB134	3/8” Lockwasher (Pkg. of 6)
35	IB140	3/8” Cut Washer
36	TU6854	#14 x 3/4” Screw
37	LB74	#14 Speed Nut without Barbs
	TU7848	#14 Speed Nut with Barbs
38	TU3801	Push On Speed Nut
39	TU2662	1/2” - 20 x 1 1/2” Cap Screw
40	TU2664	5/8” - 18 x 1 1/2” Cap Screw
41	OP251	1/2” Lockwasher
42	TU5801	5/8” Lockwasher
43	F557	#10 - 24 x 3/8” Screw
44	FB187	#10 Lockwasher
45	TU5645	Lint Door (no Insulation) “C” & “K” (specify color)
	TU6257	Lint Door with Handles, Hardware (no Insulation) “C” & “K” (specify color)
	TU7803	Lint Door (with Insulation) “R” & “F” (specify color)
	TU7804	Lint Door (with Insulation), Handles, and Hardware, “R” & “F” (specify color)
46	TU9975	Basket Shaft Key
47	TU490	Thermostat Knob (Fahrenheit)
	TU491	Thermostat Knob (Centigrade)
48	K169	Handle Assembly
49	TU6025	Cam Stop
50	TU3811	Cam
51	TU6159	Support Clips (2 required)
52	TU6808	Reset Button Assembly
53	TU10673	Front Panel Insulation (4 required)
56	TU7691	Left Side Insulation “F” & “R”
57	TU7690	Side Insulation “F” & “R” (9 required)
58	TU7692	Insulation “F” “R” & “C” Gas Model
59	TU9209	Snap Bushing
60	RC349	1/4" Lockwasher
61	TU7719	Conduit Channel Cover
62	TU8036	Left Control Box Shield “C”
63	TU6160	Lint Screen Clip (2 required)
64	TU11568	Door Trim

* See Page 56 for Exploded View

MODELS: **L44KD42**
L44CD42 **GAS, STEAM or**
L44RD42 **ELECTRIC**
L44FG42



1	TU5507	Blanking Plate "C" Model Steam Dryer
2	TU4967	5/16" - 18 x 1/2" Allen Set Screw
3	TU8206	Air Switch**
4	AT304	5/16" - 18 x 1" Set Screw
5	TU3806	Gear Sheave
6	TU3807	Sheave Bushing
7	TU5668	Outside Belt Guard
8	TU2363	"V" Belt 5L500
9	TU2832	Motor Sheave 60 Cy.
	TU6081	Motor Sheave 50 Cy.
10	TU2833	Sheave Bushing
11	TU9615	Belt Guard Welded Asm.
12	TU470	Large Hex Nut (2 required)
13	TU6633	2-3/4" O.D. x 1- 13/32" I.D. x 3/4" Thick Washer
14	TM200	Gear Reducer**
15	TU5328	Belt Adjusting Rod
16	TU4626	Basket Motor Mount Asm.
*17	TU5658	Motor and Fan Mount (60 Cycle)
18	TU2473	Self-Sticking Gaskets (4 required)
*19	TU403	Fan Wheel (60 Cycle)
20	TU4791	90 Degree Angle Connector
21	TU2372	Snap Bushing (not used on Steam Dryer)
22	CFB2800	1/2" Greenfield Cable (specify 28")
23	TU6026	Top Motor Conduit
24	TU6027	Back Motor Conduit
25	TU6028	Power Lead Conduit
Use TU8215 Conduit on Electric Dryers ONLY		
26	500300644	Junction Box
27	TU7130	1/2" Straight Connector
28	TU7131	3/4" Straight Connector
29	SB170	Junction Box Cover
30	TU5827	Jacket Welded Assembly
31	TU4684	Key
32	TU7733 (Pkg. of 6)	#8 x 1/2" Self Drinning Screw
33	RC347	1/2" - 13 x 1 1/4" Hex Head Cap
34	TU2831	1/2" Split Lockwasher (Pkg. of 6)
35	TU1851	1/2" Flat Washer
36	TU2195	1/2" - 13 x 1 3/4" Hex Head Cap Screw (Pkg. of 6)

* For 50 Cy. Motor Mount Assembly

** See separate page for parts breakdown

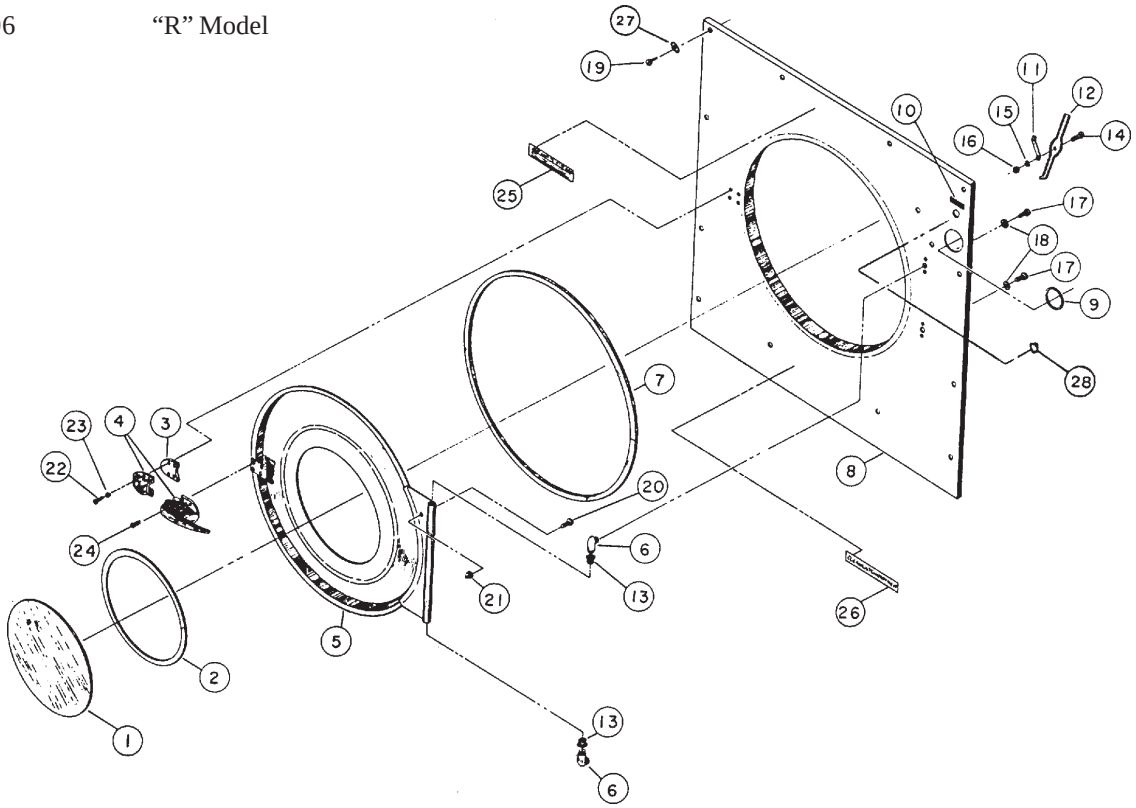
37	TU455	Cam Adjustment Nut
38	TU3575	7/8" Internal Tooth Lockwasher
39	TU5312	3/8" - 16 x 3" Square Head Set Screw
40	TU4787	3/8" - 16 Hex Nut (Pkg. of 6)
41	TU5439	5/16" - 18 x 3/4" Hex Head Cap Screw (Pkg. of 6)
42	TU2814	5/16" Split Lockwasher (Pkg. of 6)
43	C249	5/16" - 18 Hex Nut (Pkg. of 6)
44	TU2831	3/8" Split Lockwasher (Pkg. of 6)
45	TU108	Felt Seal
47	CFB0650	1/2" Greenfield Cable (specify 6 1/2")
48	TU2846	1/4" Split Lockwasher (Pkg. of 6)
49	TU2847	1/4" Flat Washer (Pkg. of 6)
50	TU4934	1/4" - 20 x 7/16" Hex Nut (Pkg. of 6)
51	FB189	1/4" - 20 x 1" Hex Head Screw
52	TU7517	Basket Shaft Cover
	TU10732	Prompter Housing Assembly**
53	TU8194	Air Switch Box Cover
54	TU8550	Air Switch Box
55	TU2490	Plug Button
56	TU8599	Relay (Igniter)
57	TU8709	Relay Bracket
58	M270	Internal Tooth Lockwasher (Pkg. of 6)
59	TU3400	Hex Nut #6 - 32 x 15/16" (Pkg. of 6)
60	TU8629	Terminal Board (Igniter)
61	K377	Transformer with Fuse (208, 220, or 240V Primary 120V Secondary)
62	TU8738	6 Amp Fuse
63	TU8582	Ingition Control Box Conduit Plate
64	TU2490	Plug Button 7/8"
65	FB187	#10 Lockwasher (Pkg. of 6)
66	CFB3000	1/2" Greenfield Cable - 30"

CAUTION

Grease to be applied to all bearing shafts, #42-032-6015 grease Lubriplate #310, 1 lb. cans OR 14 1/2 ounce tubes - Lubriplate No. 930-2, multi-purpose grease #10098.

Front Panel and Door Assembly (Illustration)

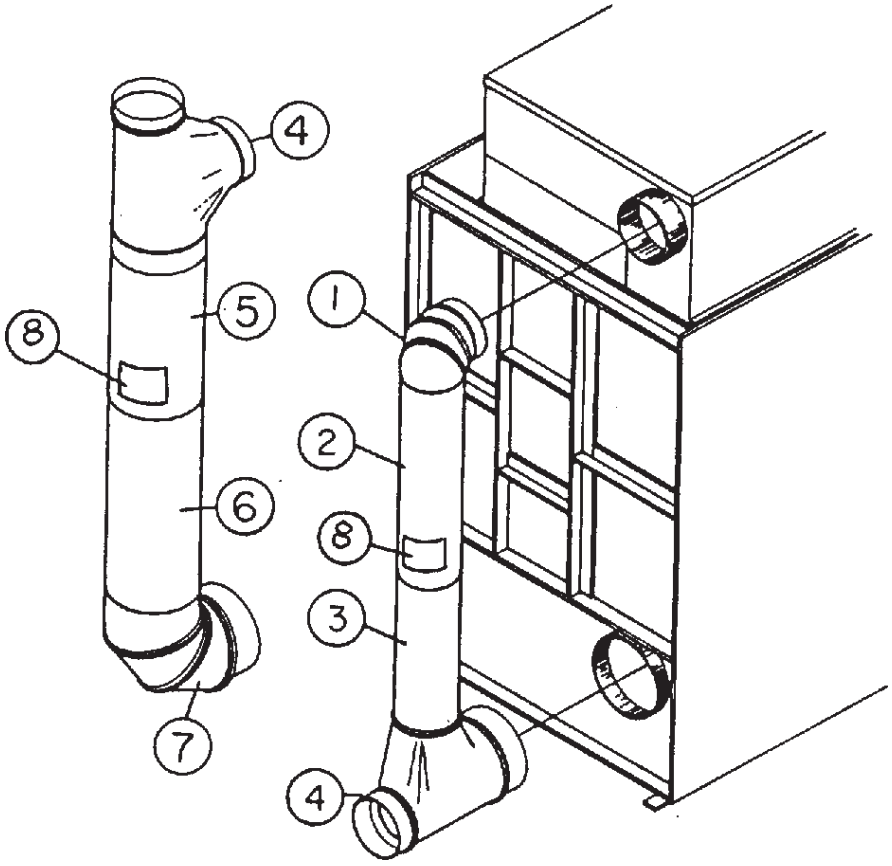
TU5934	Electric, Steam “C”, “K” Model (specify color)
TU7802	Gas “C”, “F” Model
TU9895	“K” Model
TU9896	“R” Model



1	K105	Door Glass 15 - 3/4” (plain)	14	M262	#8 - 32 x 3/8” Truss Screw
	K105C	Door Glass 15 - 3/4” (with logo)	15	AT368	#8 Split Lockwasher
			16	TU3266	#10 - 32 Hex Nut (Pkg. of 6)
2	TU1692	Door Glass Gasket	17	TU2836	5/16” - 32 x 3/8” Hex Head Screw (Pkg. of 6)
3	TU5503	Door Latch Spacer (pkg. 6)			
4	TUA2319H	Door Latch with Keeper	18	TU3212	5/16” I.T. Lockwasher
5	TU5500	Door (specify color)	19	TU3209	#14 x 5/8” Pan Head Screw (Pkg. of 6)
6	TU2236	Hinge Post			
7	TU5288	Door Seal	20	TU4839	#10 - 32 x 3/8” Hex Head Screw (Pkg. of 6)
8	TU7801*	Front Panel “F” and “R” Model (specify color)	21	TU4840	#10 - 32 Crown Nut (Pkg. of 6)
			22	TU2687	#8 - 1/2” Phillips Head Screw
	TU6047	Front Panel “C” and “K” Model (specify color)	23	TU3785	#8 Cup Lockwasher
			24	TU2686	#8 - 32 x 3/8” Phillips Head Screw
9	TU2641	Thermometer Gasket			
10	TU5458	Temperature Label	25	TU7855	Instruction Nameplate
11	TU2105	Actuator Spring	26	TU7858	“Clean Lint Compartment” Nameplate
12	TU2582	Actuator			
13	PIF172	Hinge Post Bearing (2 required)	27	RC347	1/4” Lockwasher
			28	TU9894	Plug Button—Prompters ONLY

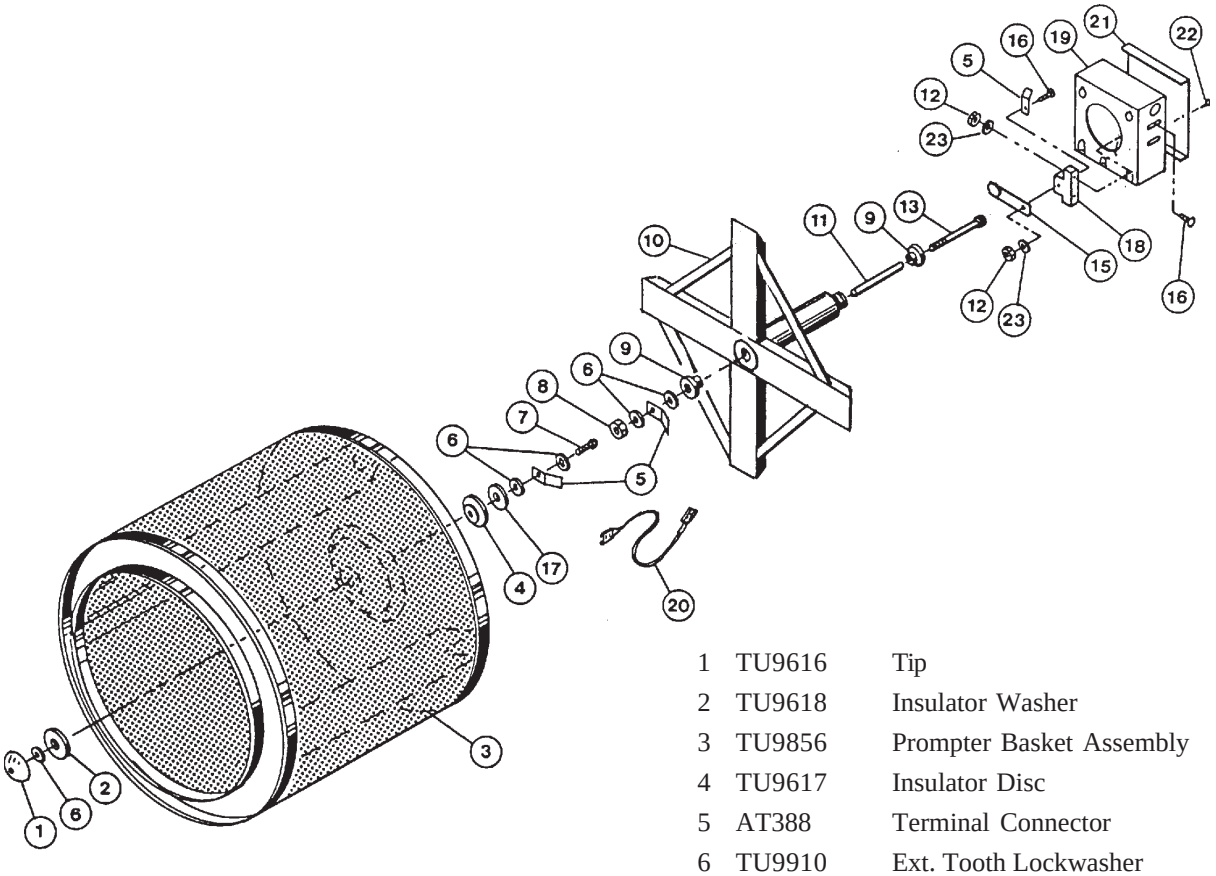
* Insulation part numbers

DUCT WORK
HORIZONTAL OR VERTICAL



1	TU8079	Duct Elbow
2	TU8081	Duct—Long
3	TU7640	Duct—Short
4	TU8228	Duct Tee
5	TU7624	12” Diameter Duct—24” Long
6	TU7625	12” Diameter Duct—30” Long
7	TU7626	12” Diameter Duct—Elbow
8	TU8594	Duct Work Decal (“F” and “K” Models ONLY)

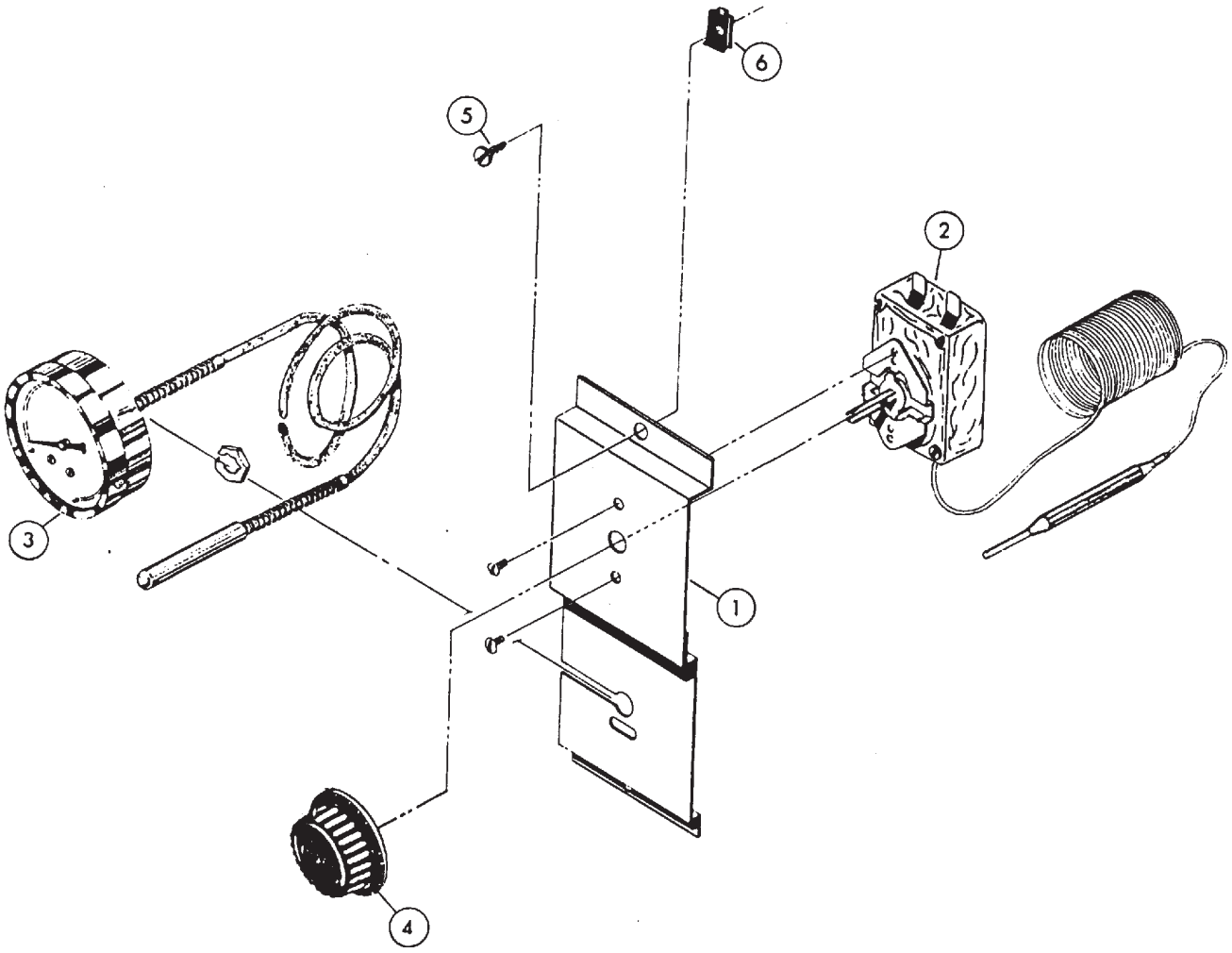
Basket and Sensor Assembly—"K" and "R" Models (Illustration)



1	TU9616	Tip
2	TU9618	Insulator Washer
3	TU9856	Prompter Basket Assembly
4	TU9617	Insulator Disc
5	AT388	Terminal Connector
6	TU9910	Ext. Tooth Lockwasher
7	TU9949	Machine Screw
8	TU3400	#6 - 32 Brass Hex Nut (Pkg. of 6)
9	TU9621	Rod Insulator
10	K348	Prompter Spider Weldment
11	TU9854	Sleeve
12	TU3266	#8 - 32 Hex Nut (Pkg. of 6)
13	TU9853	Conductor Rod
14		
15	TU9660	Wiper and Button
16	RC353	Machine Screw
17	TU9944	Washer
18	TU10915	Wiper Insulator
19	TU10916	Wiper Housing
20	TU9628	Jumper Wire
21	TU10917	Housing Cover
22	TU7733	Self Drilling Screw (Pkg. of 6)
23	M271	Int. Tooth Lockwasher (Pkg. of 6)

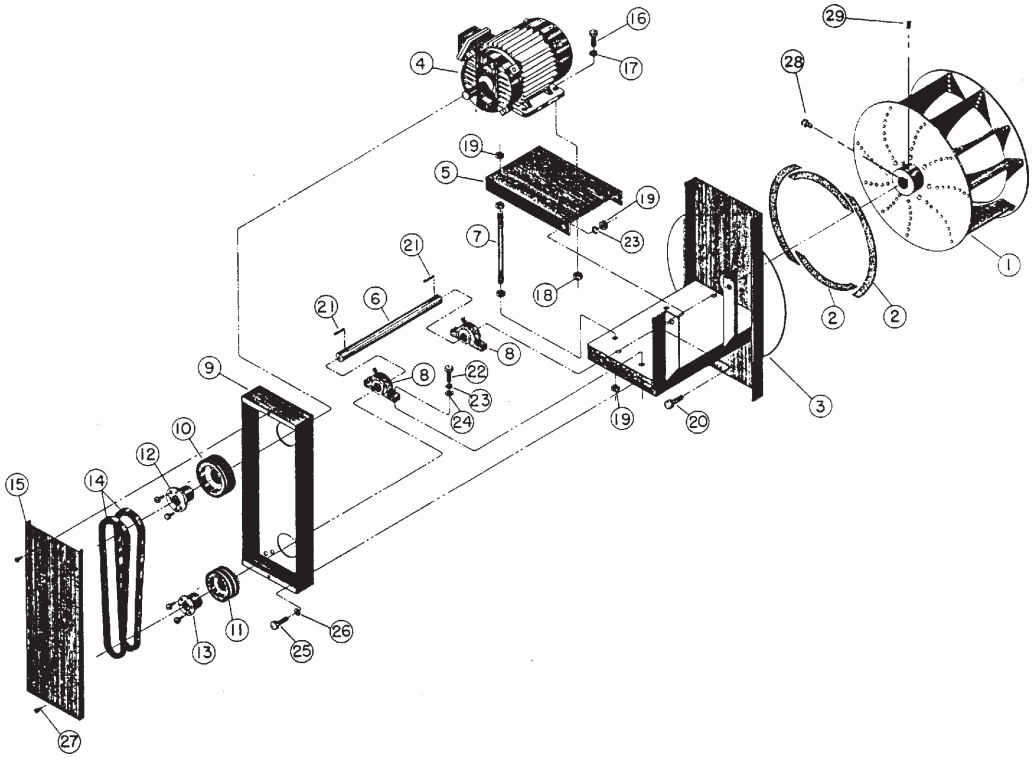
TU10732 consists of Ref. No's. 19, 21, and 22

TU6030—"C" Model—Consists of Ref. No. 1, 2, 3
TU9718—"K" Model—Consists of Ref. No. 1, 3



1	TU5530	Mounting Bracket
2	TU1980	Thermostat
3	TU3593	Thermometer
	TU3816	Lens Replacement (Texas Gage ONLY)
	TU8475	Lens Replacement (Marshaltown Inst. ONLY)
	TU11193	Lens Replacement (Weiss—consult factory)
	TU13213	Lens Replacement (Weiss—consult factory)
4	TU490	Thermostat Knob (Fahrenheit)
	TU491	Thermostat Knob (Centigrade)
5	TU3209	#14 x 5/8" S.M.S. (Pkg. of 6)
6	TU7848	#14 Tinnerman Clip

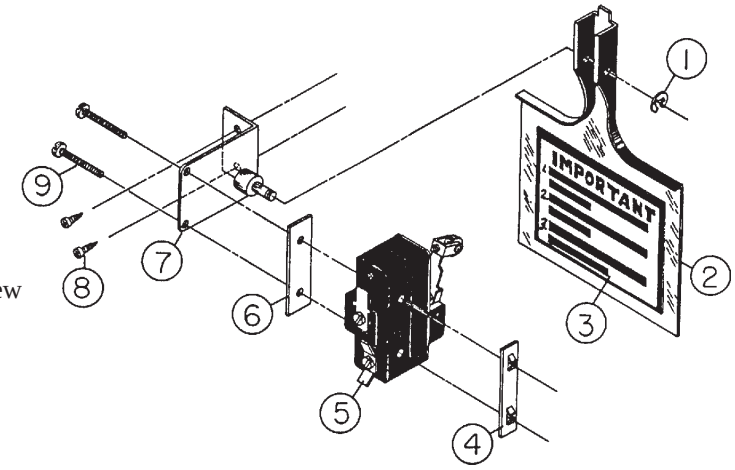
TU8826—208 or 440V/50/3
TU6006—240/415V/50/3
TU11609—220/380/50/3
TU10653—200/346/50/3



1	TU6086	50 Cycle Fan with Set Screws	17	TU2814	5/16” Split Lockwasher (Pkg. of 6)
2	TU2473	Self Sticking Gaskets (2 Sets required)	18	V56	5/16” - 24 Hex Nut (Pkg. of 6)
3	TU5659	50 Cycle Motor Mount	19	TU4787	3/8” - 16 Hex Nut (Pkg. of 6)
4		Motor: Specify Motor No. and Voltage	20	TU3246	3/8” - 16 x 1” Hex Head Screw (Pkg. of 6)
5	TU4706	Motor Mount Plate	21	TU4684	1 1/2” Key
6	TU1693	Jack Shaft	22	OP380	3/8” - 16 x 1 1/2” Hex Head Screw
7	TU1950	Motor Support Rod (2 required)	23	VSB134	3/8” Split Lockwasher (Pkg. of 6)
8	SB138	Pillow Block (2 required)	24	IB140	3/8” Flat Washer
9	TU4715	Belt Guard Weldment	25	RC344	1/4” - 20 x 3/4” Hex Head Screw
10	TU2008	Sheave 2AK46H	26	TU2847	1/4” Flat Washer (Pkg. of 6)
11	TU2009	Sheave 2AK39H	27	TU7733	#8 x 1/2” Self Drilling Screw (Pkg. of 6)
12	TU2007	H 7/8” Bushing	28	AT304	5/16” - 18 x 1” Set Screw
13	TU3807	H 3/4” Bushing	29	TU4967	5/16” - 18 x 1/2” Allen Set Screw
14	TU3393	4L280 “V” Belt (2 required)			
15	TU4716	Belt Guard Cover			
16	TU4704	5/6” - 24 x 1/4” Hex Head Screw			

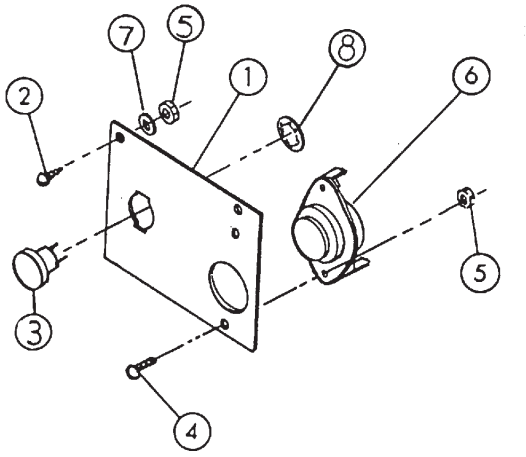
AIR SWITCH ASSEMBLY
TU8206

1	F888	"E" Ring
2	TU2463	Actuator Arm
3	TU3476	Air Switch Decal
4	TU1771	#6 Tinnerman Nut (Pkg. of 12)
5	TU8155	Air Switch
6	TU1770	Insulator
7	TU8171	Air Switch Bracket
8	TU7733	#8 - 18 x 1/2" Self Drilling Screw (Pkg. of 6)
9	TU3219	#6 x 1" Round Head S.M.S.



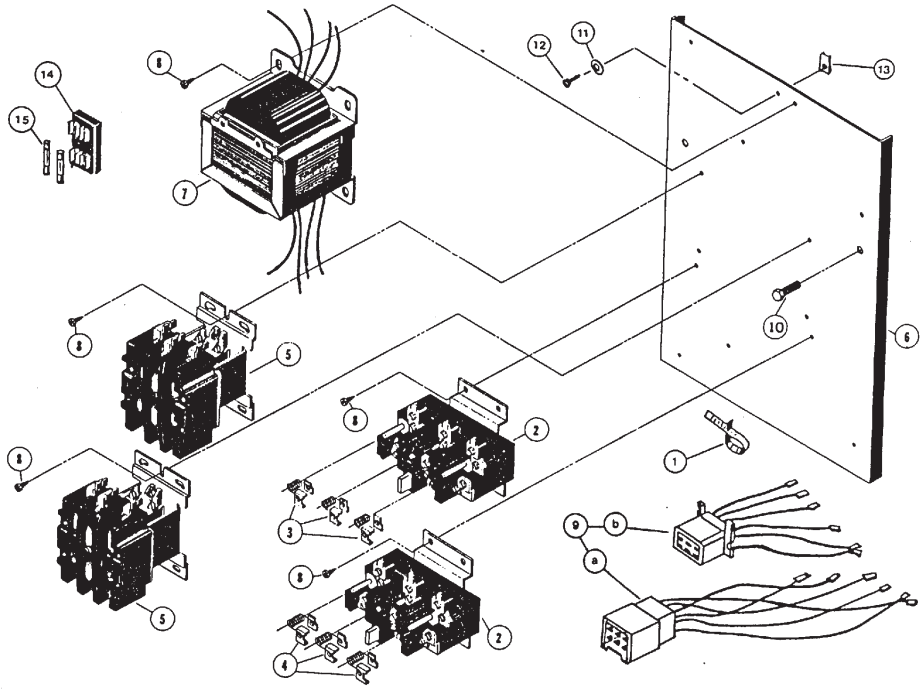
THERMISTOR ASSEMBLY
"K" and "R" Models Only
TU12582

1	TU9720	Bracket
2	LB291	#6 - 32 x 3/8" Screw
3	TU2477	High Limit Thermostat
4	TU3624	#6 Machine Screw
5	TU3400	#6 Hex Nut (Pkg. of 6)
6	TU11991	Thermistor
7	AT368	#8 Lockwasher
8	TU3801	Speed Nut



Non-Reversing Control Panel Assembly (Illustration)

TU8723 Non-Reversing Control Panel 480/60/3 with 120V Controls
TU8719 Non-Reversing Control Panel 240/415/50/3 with 240V Controls
TU8721 Non-Reversing Control Panel 480/60/3 with 240V Controls
TU8718 Non-Reversing Control Panel 208/240/60/3 with 240V Controls
TU8865 Non-Reversing Control Panel 550/60/3 with 240V Controls



1	TU10579	Harness Clamp	9	TU8713	Wiring-Plug Type (For Dryers without Transformers)
2	TU6774	Overload Unit		TU8714	Wiring-Plug Type (For Dryers with Transformers)
3	* TU267900	Overload Heater (Fan)	9a	SC593	Housing-Female
4	* TU267900	Overload Heater (Basket)	9b	SC594	Housing-Male
5	** TU6965	Contactor 120V 60 Hz. (2 required)	10	TU2793	1/4” - 20 x 3/4” Hex Head Screw (Pkg. of 6)
	*** TU6963	Contactor 208V 60 Hz. (2 required)	11	RC349	1/4” Int. Tooth Lockwasher
	**** TU8727	Contactor 240V 50 Hz.	12	TU3209	#14 x 5/8” Pan Hd. Machine Screw (Pkg. of 6)
6	TU6959	Panel Plate	13	LB74	#14 Speed Nut
7	TU4660	Transformer 480/240 & 240/120	14	TU10596	Fuse Holder
	TU4659	Transformer 575/240	15	TU10597	Fuses
	TU9804	Transformer 480/120V			
8	TU7733 (Pkg. of 6)	#8 - 1/2” Self Drill Screw			

* To order Overload Heaters, refer to chart.
** TU7281 Contactor Coil ONLY
*** TU7282 Contactor Coil ONLY
**** TU8689 Contactor Coil ONLY

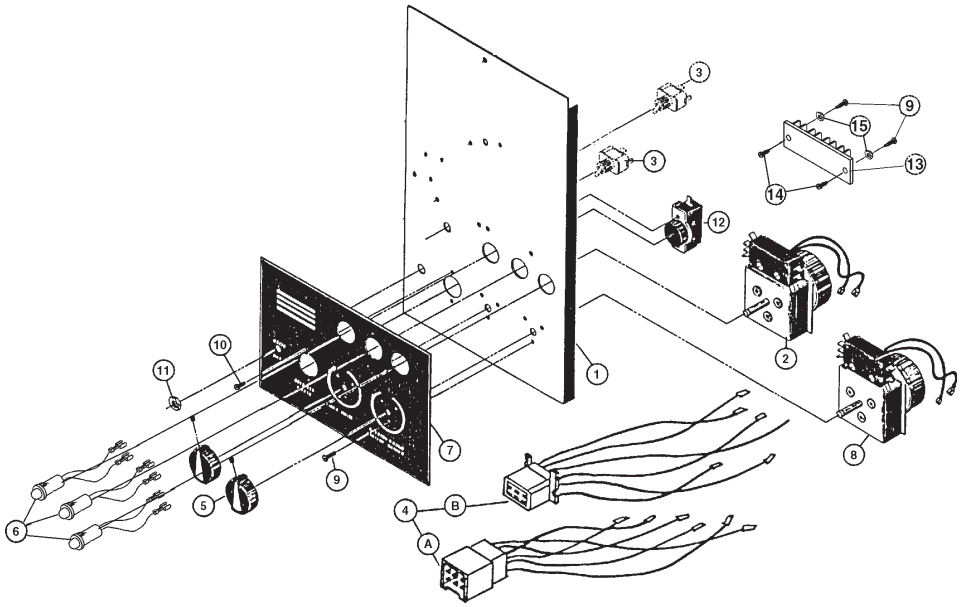
Permanent Press Control Panel Assembly (Illustration)

GAS OR STEAM

TU8730 (60 Hz. 230V) F/208/230-550
TU8731 (60 Hz. 230V) Rev. F/208/230-550
TU8805 (50 Hz. 230V) F/230-415
TU8809 (50 Hz. 230V) Rev. F/230-415
TU8806 (60 Hz. 115V) F/480 Gas ONLY
TU8807 (60 Hz. 115V) Rev. F/480 Gas ONLY
TU8730 (60 Hz. 230V) F/480 Steam ONLY
TU8731 (60 Hz. 230V) Rev. F/480 Steam ONLY

ELECTRIC

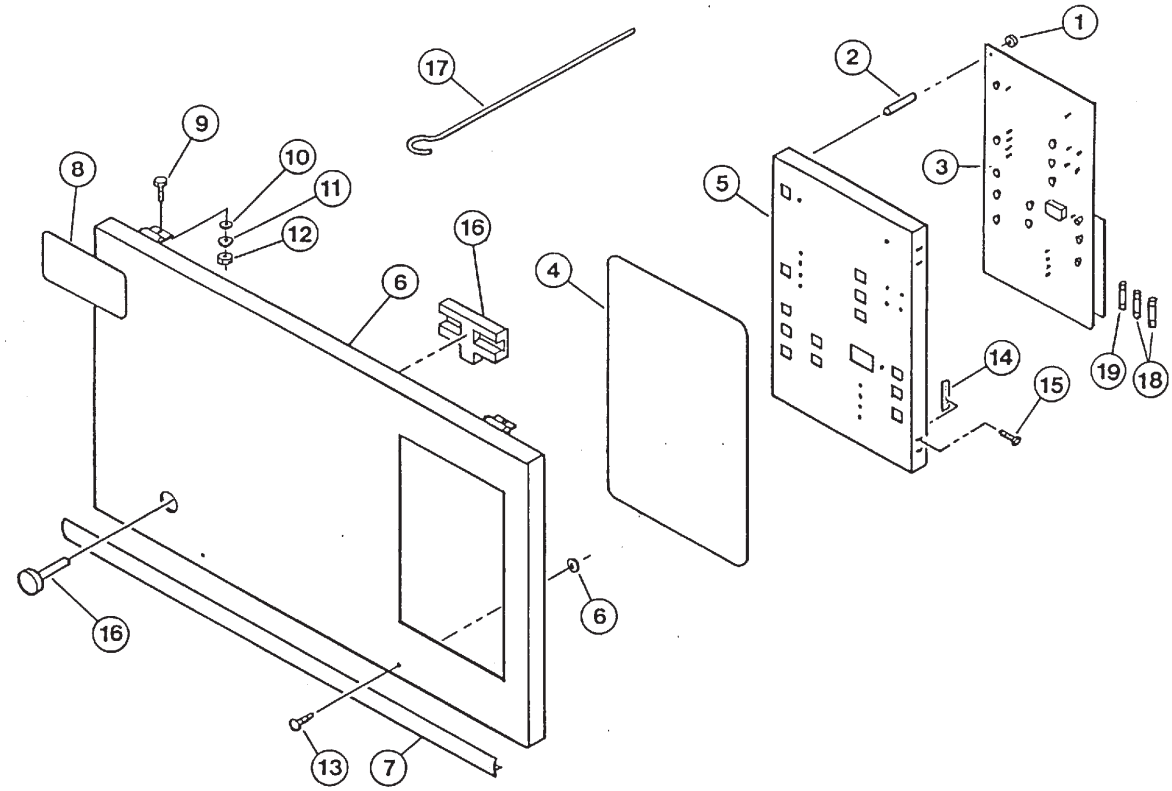
TU8879 (60 Hz. 230V) F/208
TU8880 (60 Hz. 230V) F/230-460-550
TU8881 (50 Hz. 230V) F/230-415
TU8882 (60 Hz. 208V) Rev. F/208
TU8883 (60 Hz. 230V) Rev. F/230-460-550
TU8884 (50 Hz. 230V) Rev. F/230-415



1	TU11950	Control Panel
2	K193	60 Minute Timer 240/60
	K188	60 Minute Timer 120/60
	K192	60 Minute Timer 240/50
3	TU264	Toggle Switch
4	TU10579	Harness Clamp
5	TU2555	Knob Assembly
6	M454	Amber lamp 240V
	M102	Amber Lamp 120V
7	TU7673	Permanent Press Nameplate
	TU8154	Permanent Press Nameplate (Reversing, Non-Reversing)
8	K194	15 Minute Timer 240/60
	K189	15 Minute Timer 120/60
	K190	15 Minute Timer 240/50/60
9	M262	#8 - 32 x 3/8" Truss Head Screw
10	TU3266	#8 - 32 Brass Hex Nut (Pkg. of 6)
11	TU3805	15/32" - 32 Hex Head Lock Ring
12	TU13224	Relay 100-120V 50/60 Hz
	TU13225	Relay 200-240V 50/60 Hz
13	TU9028	Push Button Switch
14	AT383	#8 - 32 x 1/2" Truss Head Screw (Pkg. of 6)
15	ET208	#6 - 32 x 1/4" Pan Head Screw
16	M271	#8 Internal Tooth Lockwasher (Pkg. of 6)
17	FG147	Toggle Switch (Reversing, Non-Reversing Controls)
18	TU8712	Wiring Harness
18a	SC593	Housing - Female
18b	SC594	Housing - Male
19	FB187	#10 Lockwasher
20	TU3209	#14 x 5/8" P.H.M. Screw (Pkg. of 6)
21	RC349	1/4 I.T. Lockwasher
22	LB74	#14 Speed Nut
23	TU7505	Fuseholder (2) Electric ONLY
24	TU8279	Fuse (2) Electric ONLY

Control Panel and Access Door Assembly—"K" and "R" Models (Illustration)

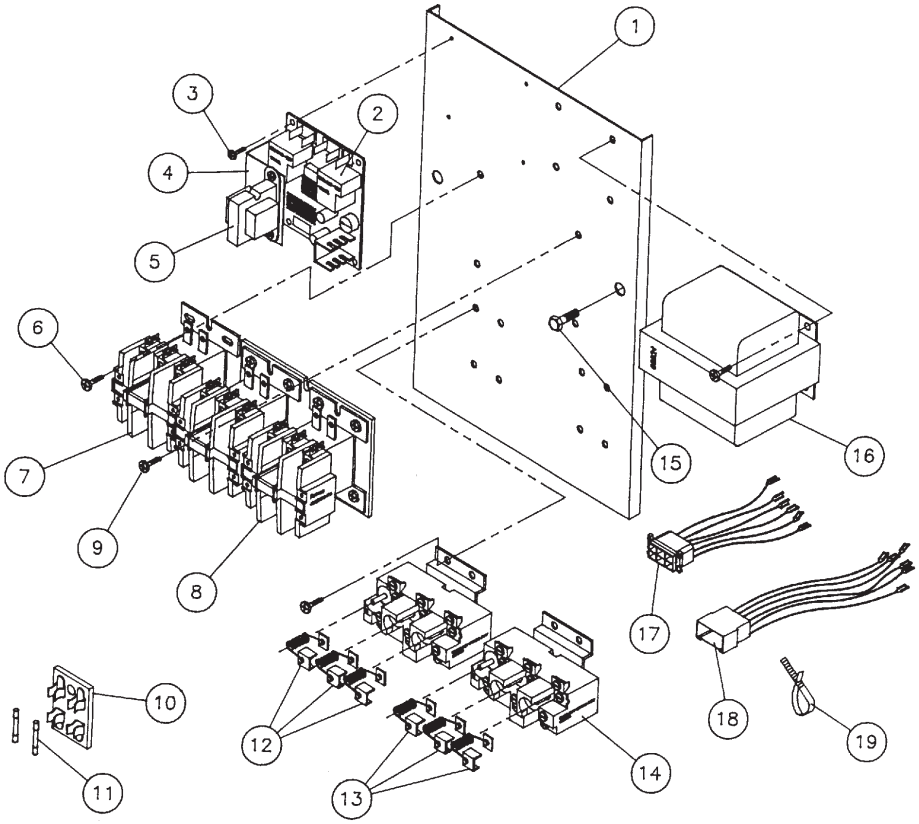
110 lb. Dryers—Reversing and Non-Reversing



1	TU3400	#6 - 32 Brass Nut (Pkg. of 6)
2	TU12254	Spacer
3	TU12105	Reversing Control Board
	TU12106	Non-Reversing Control Board
4	TU12195	Reversing Panel Label
	TU12196	Non-Reversing Panel Label
5	TU12842	Control Panel
6	TU12841	Access Door
7	TU11568	Trim
8	TU8013	Cissell Label
9	TU3479	#10 - 32 Truss Head Screw
10	P104	1/4" Cut Washer (Pkg. of 6)
11	FB187	#10 Lockwasher
12	TU2842	#10 - 32 Hex Nut (Pkg. of 6)
13	FG343	Screw Fastener
14	TU1771	Twin Clip Nut (Pkg. of 12)
15	TU9524	#6 x 5/16" Screw
16	TU6808	Reset Button
17	TU5739	Support Rod
18	TU12863	Fuse - 5 Amp.
19	ET235	Fuse - 3/8 Amp.

Reversing Control Panel Assembly (Illustration)

TU13123 Reversing Control Panel 480/60/3 with 120V Controls
TU13121 Reversing Control Panel 208/240/60/3 with 240V Controls
TU13164 Reversing Control Panel 480/60/3 with 240V Controls
TU13122 Reversing Control Panel 240/415/50/3 with 240V Controls

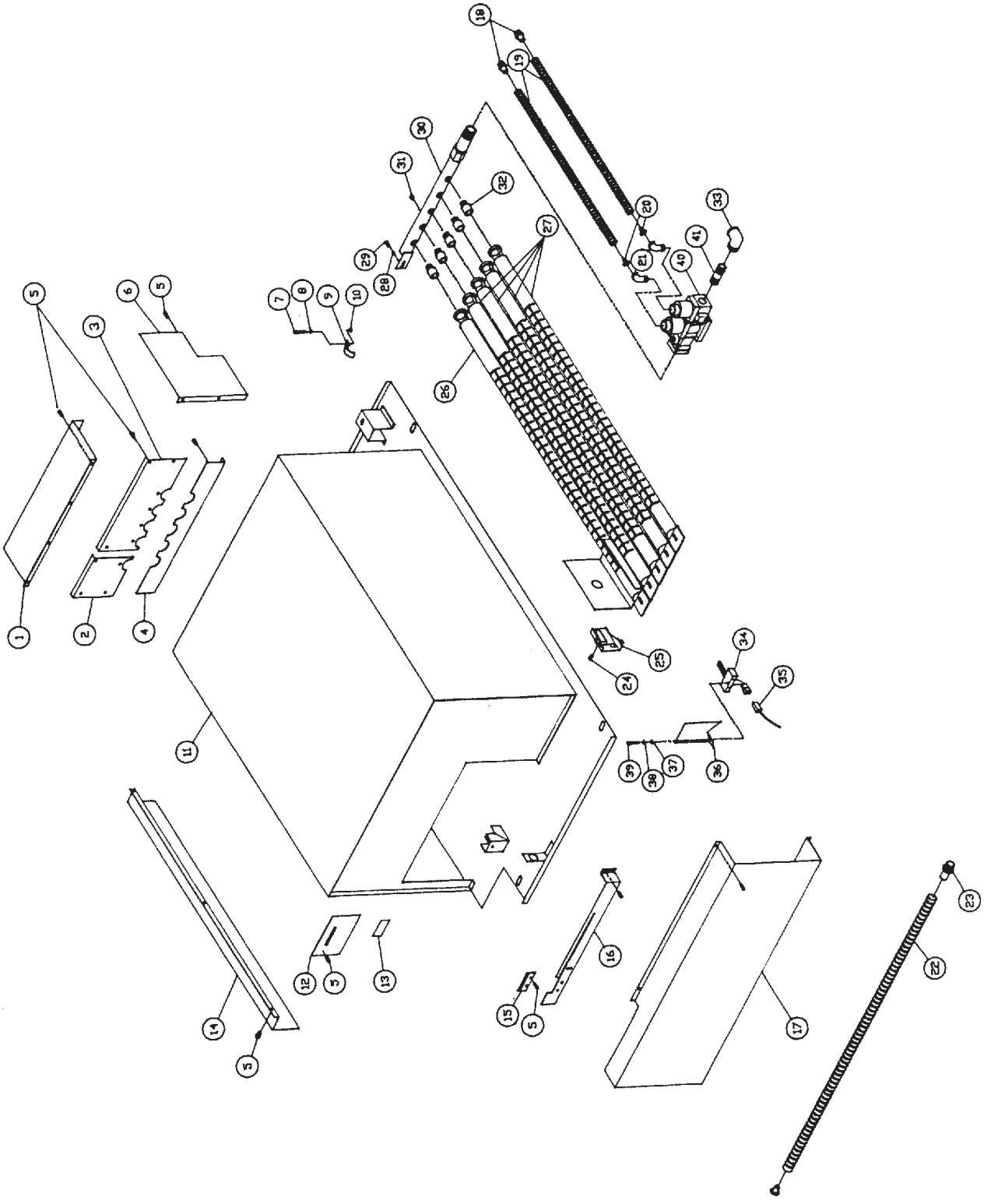


1	TU6959	Control Panel Plate	10	TU10596	Fuse Holder
2	TU12874	Electronic Reversing Timer	11	TU10597	Fuse
3	F540	#6 x 5/8" Sheet Metal Screw	12	**** TU267900	Overload Heater (fan)
4	TU13126	Transformer Mounting Plate	13	**** TU267900	Overload Heater (basket)
5	TU12989	Transformer 120V/24V	14	TU6774	Overload Unit
	TU12990	Transformer 208-240V/24V	15	RC344	1/4" - 20 x 3/4" Large Hex
6	TU7733	#8 x 1/2" Large Self Drill Screw			Head Screw
		(Pkg. of 6)	16	TU4660	Transformer 480-240V/240-120V
7	* TU6965	Contactor 120V 60 Hz		TU4659	Transformer 575/240V
	** TU6963	Contactor 208-240V 60 Hz,		TU10579	Transformer 440-480-575V/120V
		200-220V 50 Hz	17	SC594	Housing—Male
	*** TU8727	Contactor 240V 50 Hz	18	SC593	Housing—Female
8	* TU7252	Rev. Contactor 120V 60 Hz	19	TU10579	Harness Clamp
	** TU6964	Rev. Contactor 208V - 240V 60 Hz,			
		200-220 V 50 Hz		* TU7281	Contactor Coil ONLY 120V 60 Hz
	*** TU8728	Rev. Contactor 240V 50 Hz		** TU7282	Contactor Coil ONLY 208-240V
9	TU2793	#8 x 3/4" Large Self Drill Screw			60 Hz, 200-220V 50 Hz
		(Pkg. of 6)		*** TU8689	Contactor Coil ONLY 240V 50 Hz

**** To order Overload Heater, refer to chart

Gas Heating Unit—L44CD42 and L44KD42 (Illustration)

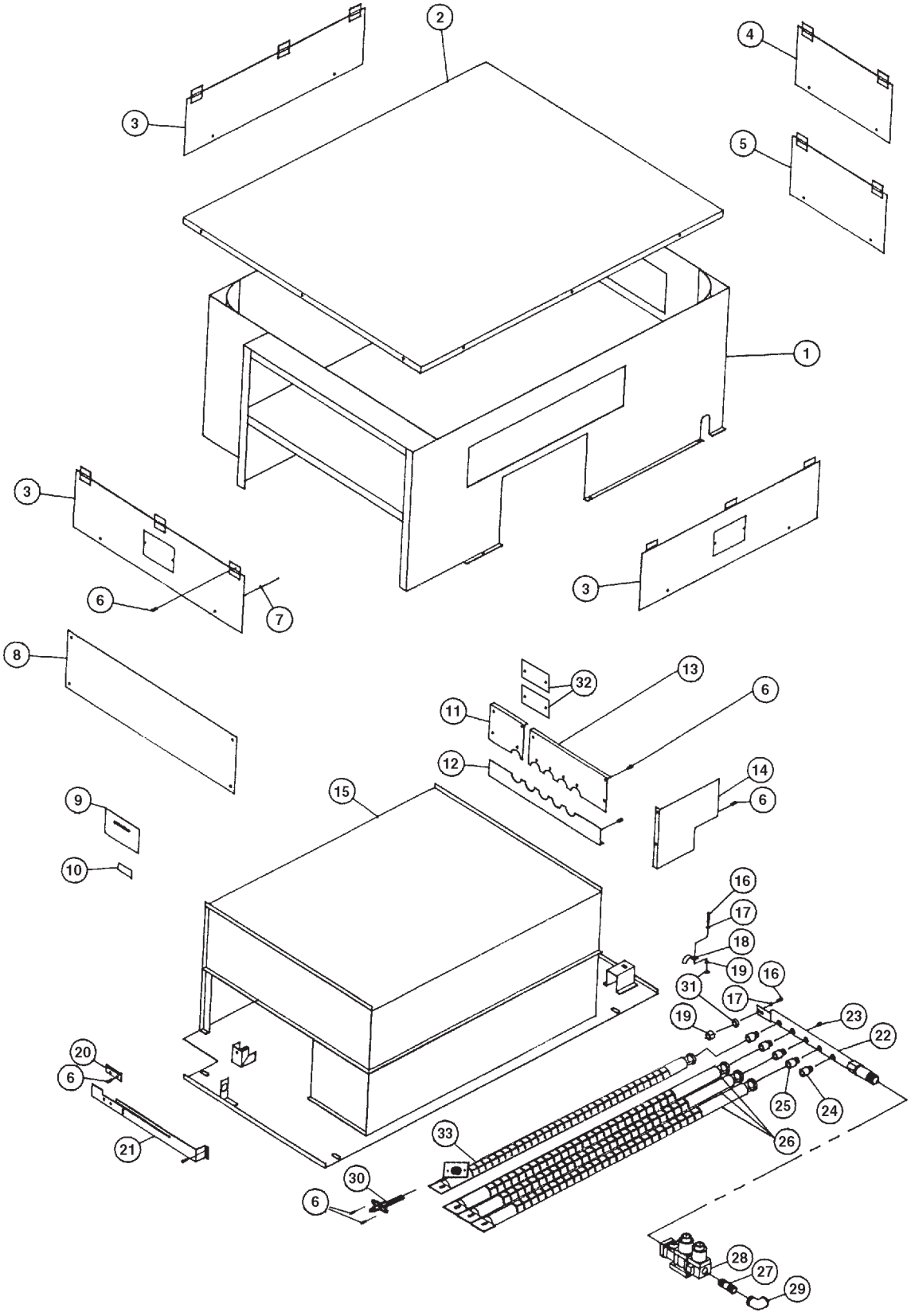
TU11948—Natural Gas Models
TU11949—L.P. Gas Models



1	TU8020	Rear Shield
2	TU11888	Burner Support Top, Right Side
3	TU11887	Burner Support Top, Left Side
4	TU11886	Burner Support Bottom
5	TU7733	#8 x 1/2” Self Drill Screw (Pkg. of 6)
6	TU8759	Heat Shield
7	RC344	1/4” - 20 x 3/4” Hex Head Screw
8	TU2846	1/4” Split Ring Lockwasher (Pkg. of 6)
9	PT196	3/4” Pipe Strap
10	TU4934	1/4” - 20 Hex Nut (Pkg. of 6)
11	TU11646	Bonnet
12	TU8613	Ingiter Instruction Plate
13	TU8645	“Purge Gas Lines” Plate
14	TU11899	Left Side Shield
15	TU10664	Burner Holder
16	TU11827	Front Burner Support
17	TU10692	Front Shield
18	F875	3/8” Straight Connector
19	CFA1600	3/8” Cable - 16” Long
20	C170	3/8” Bushing
21	F876	3/8” - 90° Connector
22	CFB6800	1/2” Cable - 68” Long
23	TU4790	1/2” Straight Connector
24	602102180	#8 x 1/2” Screw
25	TU8598	Radiant Sensor
26	TU11619	Igniter Burner with Bracket
27	TU7881	Gas Burner
28	TU2846	1/4” Lockwasher (Pkg. of 6)
29	CB36	1/4” - 20 x 1/2” Hex Head Screw (Pkg. of 6)
30	TU9614	Gas Manifold
31	TU2224	1/8” Plug
32	TU3539	Burner Orifice (specify Drill Size)
33	TU10623	3/4” x 1/2” 90° Elbow
34	TU8596	Igniter
35	TU8605	Molex Wire Connector
36	TU11851	Burner Shield
37	TU4820	3/16” x 1/2” Cut Washer
38	M271	#8 Lockwasher (Pkg. of 6)
39	TU3416	#8 x 1 1/4” Screw (Pkg. of 6)
40	TU13187	1/2” Combination Gas Valve (Natural Gas)
	TU13188	Kit (Natural Gas to LP Gas)
	TU13373	1/2” Combination Gas Valve (L.P. Gas)
	TU13632	Kit (LP Gas to Natural Gas)
		(Above kits do not include orifices)
41	OP290	1/2” x 2” Nipple

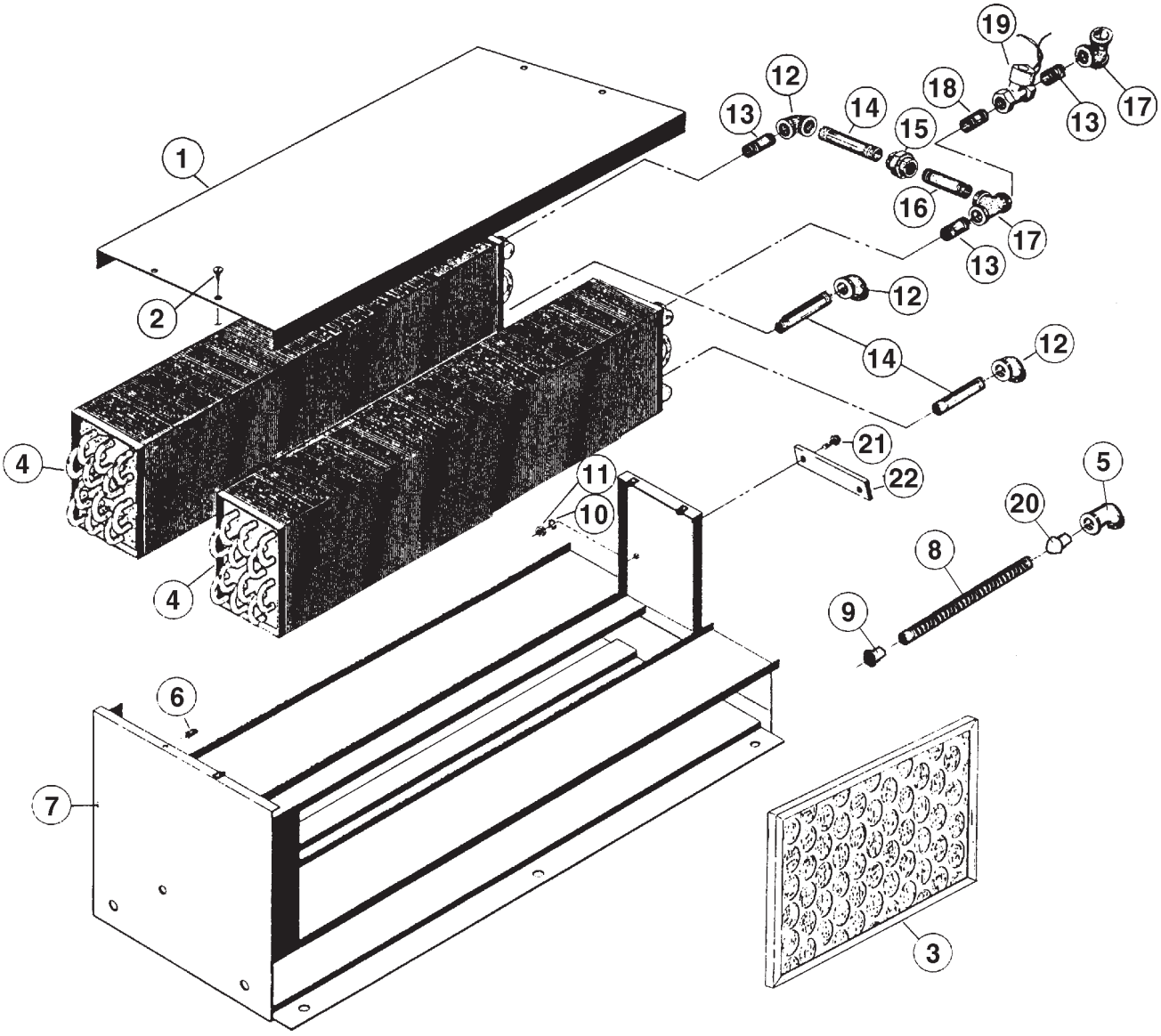
Gas Heating Unit—L44FD42 and L44RD42 (Illustration)

TU11960—Natural Gas Models
TU11961—L.P. Gas Models



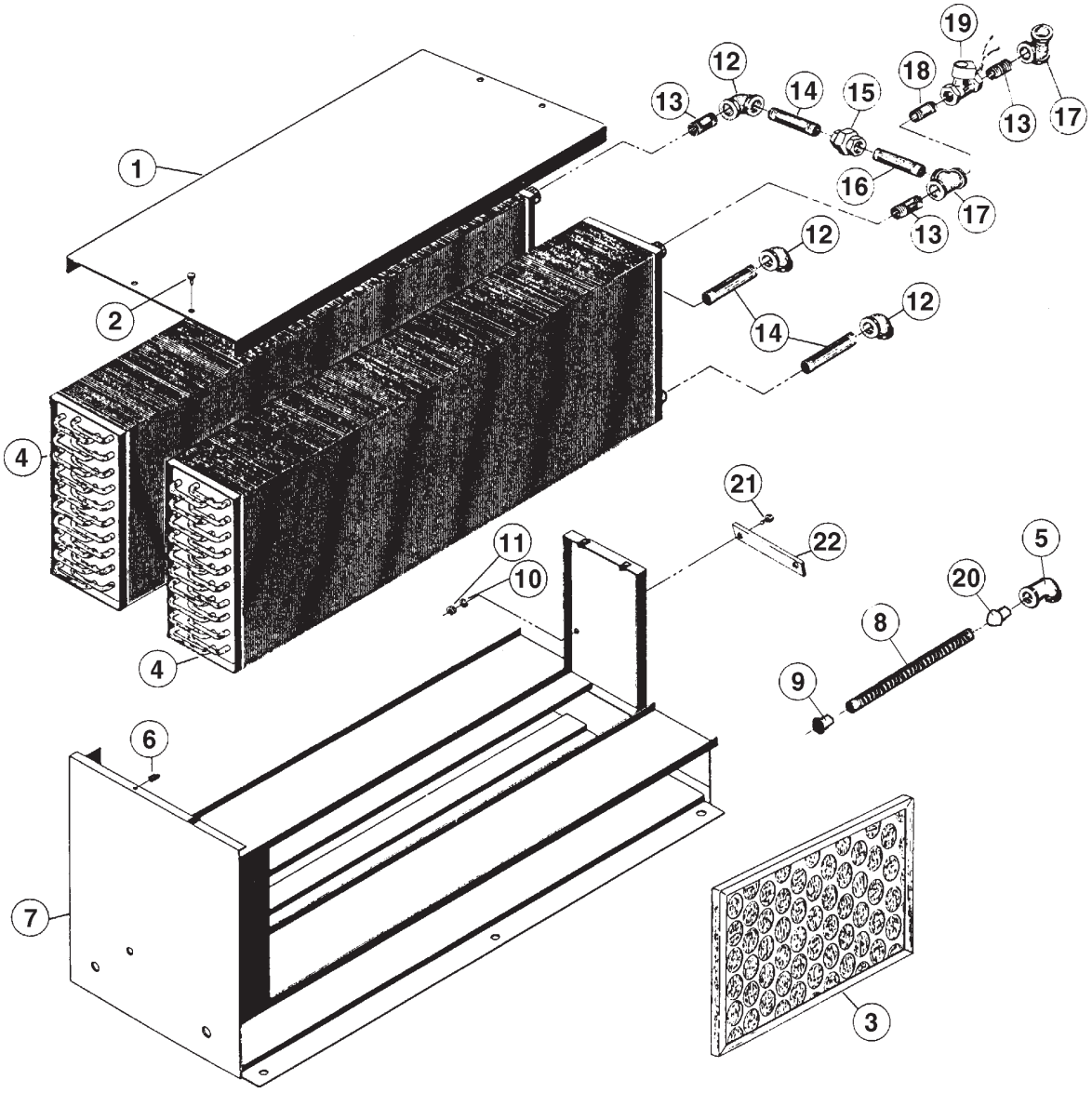
1	TU8156	Bonnet Enclosure
2	TU7555	Enclosure Top
3	TU12042	Cover with Clean Out Label
4	TU12043	Rear Cover with Clean Out Label
5	TU12046	Lower Rear Cover with Label
6	TU7733	#8 - 18 x 1/2” Self Drill Screw (Pkg. of 6)
7	TU8577	#8 Speed Nut
8	602102180	#8 Sheet Metal Screw
9	TU8613	Ignition Instructions Label
10	TU8645	“Purge Gas Line” Label
11	TU11890	Burner Support Top Right Side
12	TU11886	Burner Support Bottom
13	TU11887	Burner Support Top Left Side
14	TU8759	Heat Shield
15	TU11874	Bonnet
16	RC344	1/4” - 20 x 3/4” Hex Screw
17	TU2846	1/4” Lockwasher (Pkg. of 6)
18	PT196	Strap
19	TU4934	1/4” Hex Nut (Pkg. of 6)
20	TU10664	Burner Holder
21	TU11897	Front Burner Support
22	F875	3/8” Straight Connector
23	CFA1600	3/8” Cable - 16” Long
24	C170	3/8” Cable Bushing
25	F876	3/8” Angle Connector
26	CFB6800	1/2” Cable - 68” Long
27	TU4790	1/2” Straight Connector
28	602102180	#8 Sheet Metal Screw (Pkg. of 6)
29	TU8598	Radiant Sensor
30	TU11619	Ignition Burner with Bracket
31	CB36	1/4” - 20 x 1/2” Hex Screw
32	TU9614	Gas Manifold
33	TU2224	1/8” Pipe Plug
34	TU10946	Manifold Plug
35	TU3539	Gas Orifice (specify Drill Size)
36	TU7881	Burner
37	OP290	1/2” x 2” Nipple
38	TU13187	Gas Valve (Natural Gas)
	TU13373	Gas Valve (L.P. Gas)
	TU13188	Kit (Natural Gas to LP Gas)
	TU13632	Kit (LP Gas to Natural Gas)
		(Above kits do not include orifices)
39	TU10623	3/4” x 1/2” 90° Elbow
40	TU3416	#8 x 1 1/4” Screw (Pkg. of 6)
41	M271	#8 Lockwasher (Pkg. of 6)
42	TU4820	Cut Washer
43	TU11851	Burner Shield
44	TU8605	Wire Connector
45	TU8596	Igniter
46	TU7607	Front Lower Cover

TU8134—Steam Bonnet (4 Coil) (Illustration)



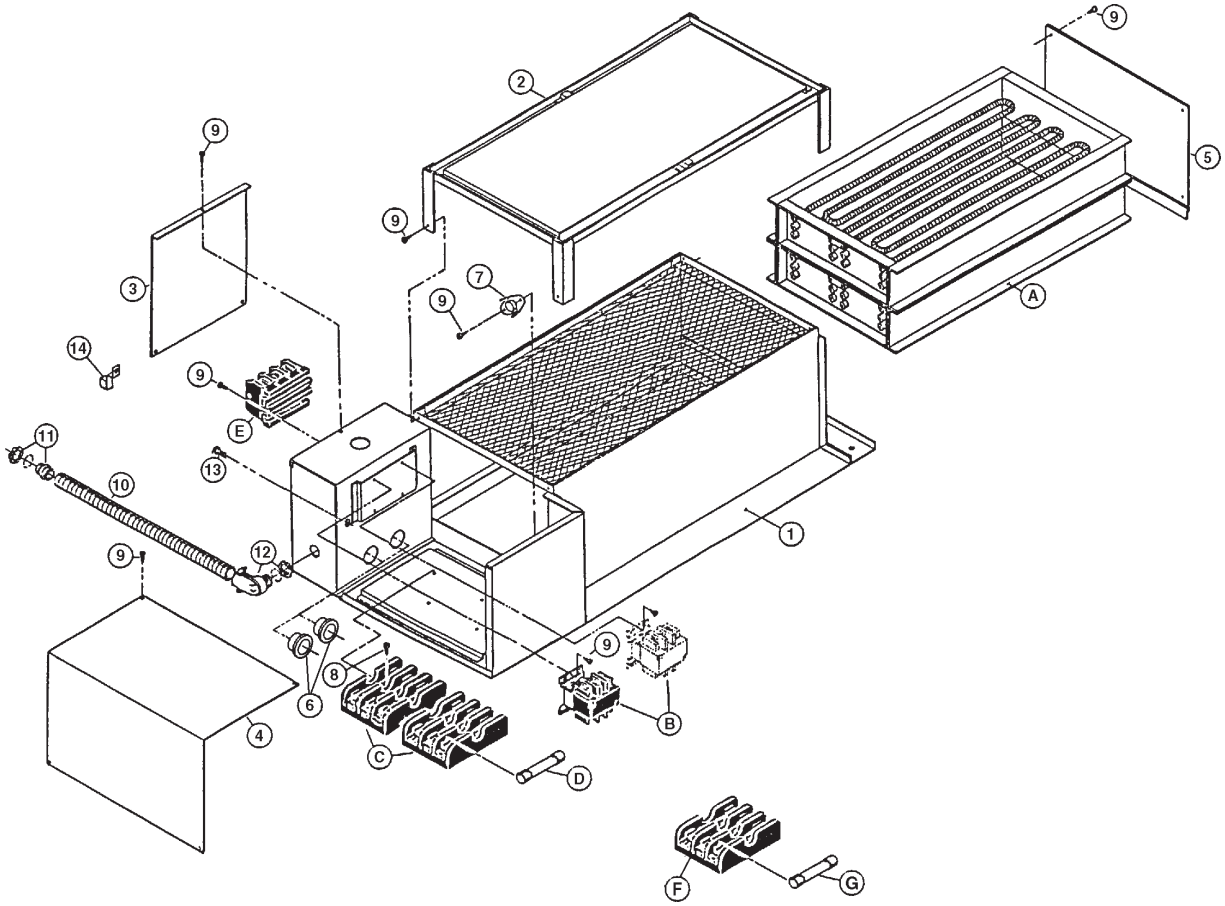
1	TU7393	Top Plate	14	TU4610	3/4” x 5” Nipple
2	TU3209	#14 x 5/8” Sheet Metal Screw (Pkg. of 6)	15	TU4600	3/4” Union
			16	TU4620	3/4” x 4 1/2” Nipple
3	TU6458	Air Filter (4 required)	17	TU4597	3/4” Tee
4	TU1699	Steam Coil (4 Coil)	18	TU5914	3/4” x 3 1/2” Nipple
6	LB74	#14 Speed Nut	19	TU5924	Solenoid Valve (240V)
7	TU8082	Bonnet Weldment		TU6763	240V Coil ONLY
10	TU2846	1/4” Lockwasher (Pkg. of 6)		TU5939	208V Coil ONLY
11	TU4934	1/4” - 20 x 7/16” Hex Nut (Pkg. of 6)		TU10289	200V Coil ONLY
			20	390401031	3/4” x Close Nipple
12	TU4605	3/4” Elbow	24	FB189	1/4” - 20 x 1” Hex Head Screw
13	TU4608	3/4” x 2” Nipple	25	TU5726	Rear Coil Holder

TU8135—Steam Bonnet (6 Coil) (Illustration)



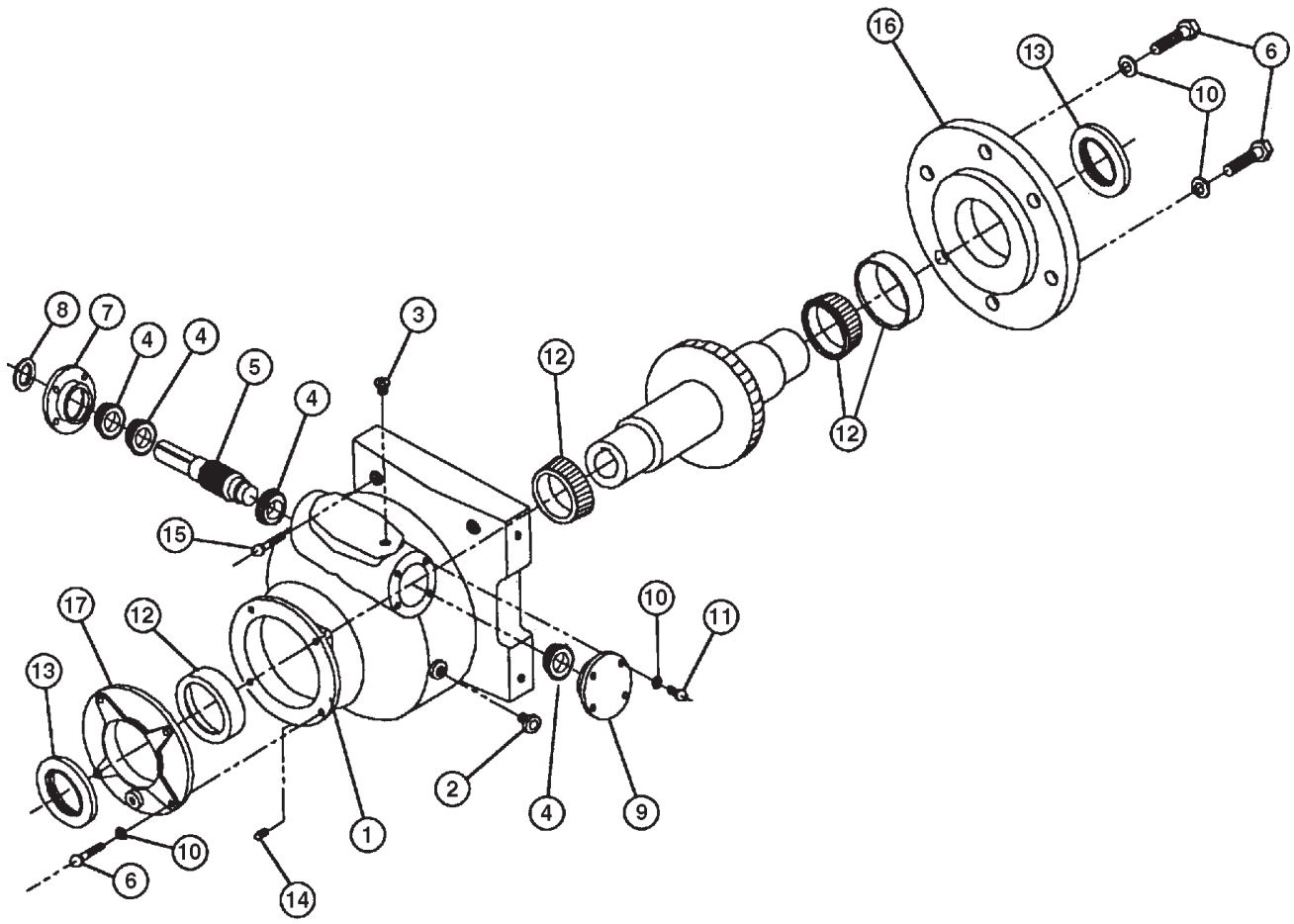
1	TU7393	Top Plate	14	TU4610	3/4” x 5” Nipple
2	TU3209	#14 x 5/8” Sheet Metal Screw (Pkg. of 6)	15	TU4600	3/4” Union
			16	TU4620	3/4” x 4 1/2” Nipple
3	TU6080	Air Filter (4 required)	17	TU4597	3/4” Tee
4	TU2808	Steam Coil (6 Coil)	18	TU5914	3/4” x 3 1/2” Nipple
6	LB74	#14 Speed Nut	19	TU5924	Solenoid Valve (240V)
7	TU8083	Bonnet Weldment		TU6763	240V Coil ONLY
10	TU2846	1/4” Lockwasher (Pkg. of 6)		TU5939	208V Coil ONLY
11	TU4934	1/4” - 20 x 7/16” Hex Nut (Pkg. of 6)		TU10289	200V Coil ONLY
			20	390401031	3/4” x Close Nipple
12	TU4605	3/4” Elbow	24	FB189	1/4” - 20 x 1” Hex Head Screw
13	TU4608	3/4” x 2” Nipple	25	TU5726	Rear Coil Holder

Electric Heating Unit (Illustration)



1	TU7098	Bonnet Weldment (480V and up)
	TU11785	Bonnet Weldment
2	TU7113	Top Weldment
3	TU7122	Terminal Cover (480V and up)
	TU9908	Terminal Cover
4	TU7121	Rear Cover (480V and up)
	TU9909	Rear Cover
5	TU7118	Front Cover
6	TU5958	Bushing
7	TU7089	Thermostat (300° F)
8	TU2793	#8 x 5/8” Screw (Pkg. of 6)
9	TU7733	#8 x 1/2” Screw (Pkg. of 6)
10	CFB1500	1/2” Greenfield Cable (15” Long)
11	TU4790	Straight Connector
12	TU4791	90° Connector
13	CB36	1/4” - 20 x 1/2” Screw (Pkg. of 6)
14	TU7737	Grounding Lug

A, B, C, D, E, and F see opposite page



1	TM203	Housing	10	VSB134	3/8” Split Lockwasher (Pkg. of 6)
2	K474	Oil Level Plug Kit	11	TU3246	3/8” - 16 x 1” Cap Screw (Pkg. of 6)
3	TM119	1/4” Vent Plug	12	TM217	Large Bearing Cone & Cup
4	TM208	Small Bearing Cone & Cup	13	TM220	Large Klozure
5	TM225	Worm & Worm Gear	14	TM221	1/4” Pipe Plug
6	IB139	3/8” - 16 x 1 1/4” Cap Screw	15	TU5312	3/8” x 3” Set Screw
7	TM205	Small Open End Cap	16	TM211	Large End Cap 10 1/2 Dia.
8	TM204	Small Klozure	17	TM212	Small End Cap 6 3/4 Dia.
9	TM218	Small Closed End Cap			

TM225 Worm and Worm Gear Set (for TM200 ONLY) (only sold as set)

Not Illustrated—TU3465 one pint of Cissell Transmission Oil

110 lb. Dryer Electric Heating Unit

Rated Heater Input	Heater Amps, Motor Amps, Controls Amps, Total Amperes at Rated Voltage	HZ.	Minimum Size Supply Wire Based on 60° C (140° F) Insulated Copper Conductor	Circuit Minimum Conduit Trade Size	Branch Circuit Maximum Fuse Size
60KW @ 208V/3Ph	177 Amps	60	0000 AWG	2 1/2”	200
60KW @ 240V/3Ph	153 Amps	60	00 AWG	2”	175
60KW @ 480V/3Ph	77 Amps	60	3 AWG	1 1/4”	80
60KW @ 240V/415V/3Ph	154/88 Amps	60	000/2 AWG	2/1 1/4”	175/90
60KW @ 575V 3Ph	63 Amps	60	4 AWG	1 1/4”	70
80KW @ 208V/3Ph	232 Amps	60	300 AWG	2 1/2”	250
80KW @ 240V/3Ph	201 Amps	60	250 AWG	2 1/2”	225
80KW @ 480V/3Ph	100 Amps	60	1 AWG	1 1/2”	100
80KW @ 240/415V/3Ph	202/116 Amps	50	250 MCM / 0 AWG	2 1/2”	225
80KW @ 575V/3Ph	84 Amps	60	4 AWG	1 1/4”	90

Electric Bonnet Description	Ref. No. (A) Electric Heater Elements	Ref. No. (B) Contractor	Ref. No. (C) Fuse Holder	Ref. No. (D) Fuses, Heater	Ref. No. (E) Terminal Block	Ref. No. (F) Fuse, Motor and Controls
TU11807, 60KW 208V/60/3	HE10810 (2 each) 40KW/240V	TU6963 (4 each)	TU8201 (5 each)	TU11627 (12 each)	TU8734	TU819712 (3 each)
TU11808, 60KW 240V/50/60/3	HE11080 (2 each) 30KW/240V	TU6963 (4 each)	TU8201 (5 each)	TU11627 (12 each)	TU8734	TU819709 (3 each)
TU11790, 80KW 240V/50/60/3	HE10810 (2 each) 40KW/240V	TU6963 (4 each)	TU11096 (4 each) TU8201 (1 each)	TU7223 (12 each)	TU8734	TU819709 (3 each)
TU7096, 60KW 480V/3	HE11080 (2 each) 30KW/240V	TU9169 (1 each)	TU9141 (1 each)	TU7090 (3 each)	TU8734	
TU7097, 60KW 480V/3	HE10810 (2 each) 40KW/240V	TU9170 (1 each)	TU9141 (2 each)	TU7071 (6 each)	TU8734	
TU11806, 80KW 240/415/50/3	HE10810 (2 each) 40KW/240V	TU6963 (4 each)	TU11096 (4 each) TU8200 (1 each)	TU7223 (6 each)	TU8734	TU819907 (3 each)
TU11809, 60KW 240/415/50/3	HE10810 (2 each) 30KW/240V	TU6963 (4 each)	TU8201 (4 each) TU8200 (1 each)	TU11627 (12 each)	TU8734	TU819907 (3 each)
TU8866, 60KW 550V/3	HE11540 (2 each) 30KW/275V	TU9169 (1 each)	TU9141 (1 each)	TU7090 (3 each)	TU8734	
TU9351, 80KW 550V/3	HE10610 (2 each) 40KW/275V	TU9170 (1 each)	TU9141 (2 each)	TU7071 (6 each)	TU8734	
TU11789, 80KW 208V/60/3	HE10610 (2 each) 40KW/208V	TU6963 (4 each)	TU11096 (4 each) TU8201 (1 each)	TU7224 (12 each)	TU8734	TU819712 (3 each)

ORDERING OVERLOAD HEATERS FOR OVERLOAD RELAYS

Properly sized Overload Heaters provide motor protection for the dryer. Improper heater size may allow the motor to be damaged, or could cause nuisance tripping.

Heater sizes are listed on the Overload Heater Table on page 50. To use the table, refer to the Motor Rating Plate and locate the Full Load Amps (FLA), the Service Factor (SF), and the Ambient Temperature (Amb.).

Example

Motor Rating Plate show FLA = 3.8, SF = 1.15, and 60 Deg. C Amb.
From the table, heater size is H-25. Order TU267900 - H25.

CAUTION

Overload Relays do not provide protection from short circuits. Short circuit protection is provided by a device such as a breaker or wall disconnect.

OVERLOAD HEATER TABLE
Motor Full Load Amps (FLA)

Heater Size (TU2679)		SF = 1.00		SF = 1.15 OR GREATER	
N/REV	REV	40 Deg. C Amb.	60 Deg. C Amb. or more	40 Deg. C Amb.	60 Deg. C Amb. or more
H-6	H-7	.69 - .74	.56 - .61	.62 - .68	.51 - .55
H-7	H-8	.75 - .83	.62 - .68	.69 - .74	.56 - .61
H-8	H-9	.84 - .93	.69 - .74	.75 - .83	.62 - .68
H-9	H-10	.94 - 1.02	.75 - .83	.84 - .93	.69 - .74
H-10	H-11	1.03 - 1.16	.84 - .93	.94 - 1.02	.75 - .83
H-11	H-12	1.17 - 1.31	.94 - 1.02	1.03 - 1.16	.84 - .93
H-12	H-13	1.32 - 1.45	1.03 - 1.16	1.17 - 1.31	.94 - 1.02
H-13	H-14	1.46 - 1.63	1.17 - 1.31	1.32 - 1.45	1.03 - 1.16
H-14	H-15	1.64 - 1.80	1.32 - 1.45	1.46 - 1.63	1.17 - 1.31
H-15	H-16	1.81 - 1.96	1.46 - 1.63	1.64 - 1.80	1.32 - 1.45
H-16	H-17	1.97 - 2.22	1.64 - 1.80	1.81 - 1.96	1.46 - 1.63
H-17	H-18	2.23 - 2.43	1.81 - 1.96	1.97 - 2.22	1.64 - 1.80
H-18	H-19	2.44 - 2.55	1.97 - 2.22	2.23 - 2.43	1.81 - 1.96
H-19	H-20	2.56 - 2.81	2.23 - 2.43	2.44 - 2.55	1.97 - 2.22
H-20	H-21	2.82 - 2.99	2.44 - 2.55	2.56 - 2.81	2.23 - 2.43
H-21	H-22	3.00 - 3.43	2.56 - 2.81	2.82 - 2.99	2.44 - 2.55
H-22	H-23	3.44 - 3.90	2.82 - 2.99	3.00 - 3.43	2.56 - 2.81
H-23	H-24	3.91 - 4.28	3.00 - 3.43	3.44 - 3.90	2.82 - 2.99
H-24	H-25	4.29 - 4.86	3.44 - 3.90	3.91 - 4.28	3.00 - 3.43
H-25	H-26	4.87 - 5.45	3.91 - 4.28	4.29 - 4.86	3.44 - 3.90
H-26	H-27	5.46 - 6.13	4.29 - 4.86	4.87 - 5.45	3.91 - 4.28
H-27	H-28	6.14 - 6.79	4.87 - 5.45	5.46 - 6.13	4.29 - 4.86
H-28	H-29	6.80 - 7.72	5.46 - 6.13	6.14 - 6.79	4.87 - 5.45
H-29	H-30	7.73 - 8.48	6.14 - 6.79	6.80 - 7.72	5.46 - 6.13
H-30	H-31	8.49 - 9.65	6.80 - 7.72	7.73 - 8.48	6.14 - 6.79
H-31	H-32	9.66 - 10.70	7.73 - 8.48	8.49 - 9.65	6.80 - 7.72
H-32	H-33	10.80 - 12.30	8.49 - 9.65	9.66 - 10.70	7.73 - 8.48
H-33	H-34	12.40 - 13.00	9.66 - 10.70	10.80 - 12.30	8.49 - 9.65
H-34	H-35	13.10 - 14.00	10.80 - 12.30	12.40 - 13.00	9.66 - 10.70

ADDENDUM TO MANUAL4M - NORTON IGNITION SYSTEM

(NOTE: This replaces information about the 24V Direct Spark Ignition System)

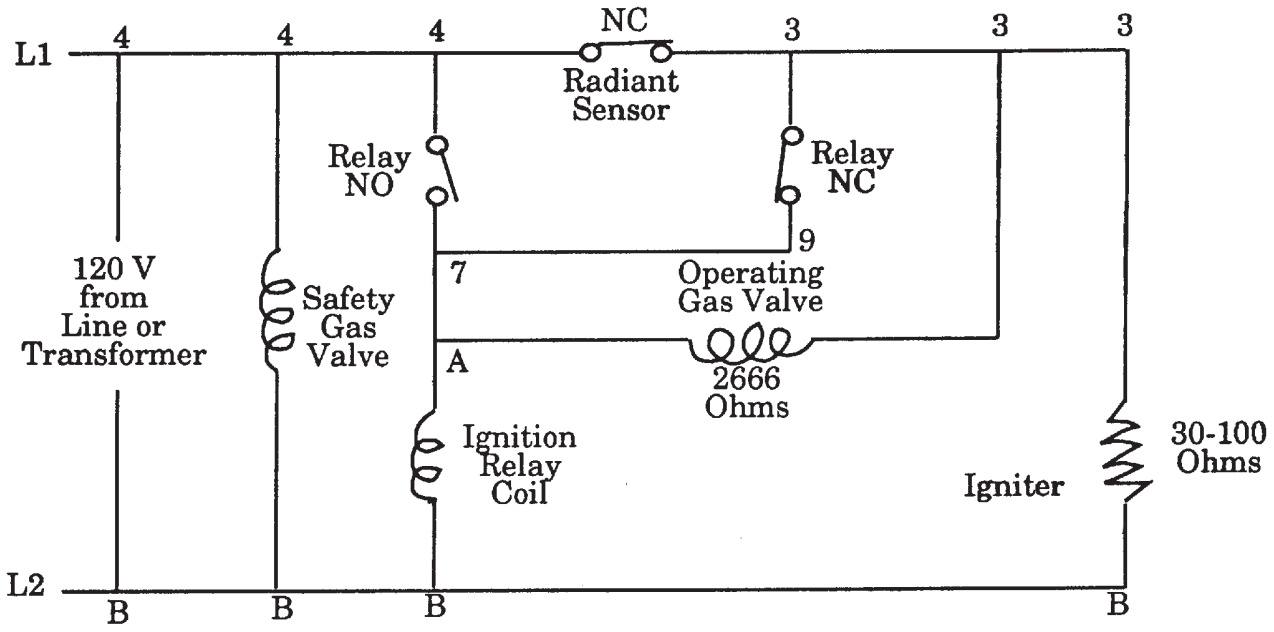
OPERATION OF THE NORTON IGNITION SYSTEM

Power to the ignition system is 120 volts. It is rated voltage or on higher voltage machines the 120 volts is from a transformer. The ignition system is powered through a timer or coin meter and a thermostat which calls for heat.

The two gas valves are plumbed into a single gas line and both must open before the gas can flow into the burners.

The following diagrams are line to line schematics of the ignition system. The numbers 4, 7, 3, 9, and letters A and B are terminals on the ignition relay.

FIGURE 1



NORTON IGNITION SYSTEM
Figure 1 (Start of Cycle)

Step #1

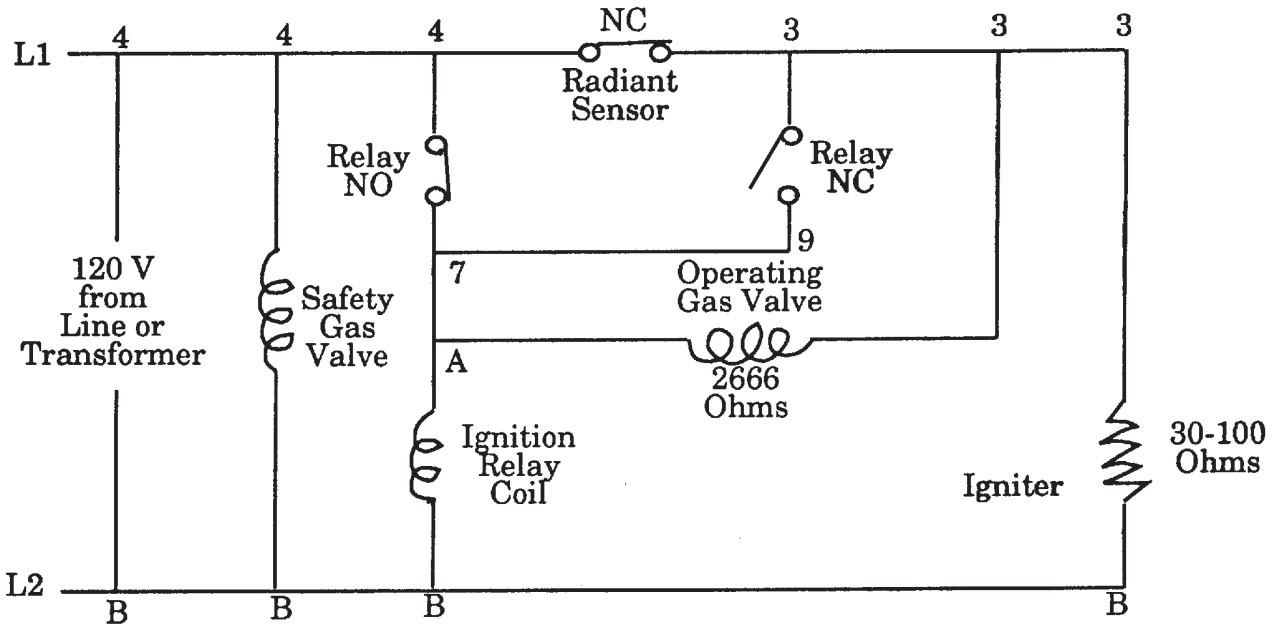
a. The Safety Gas Valve is connected across the lines and opens immediately as soon as a need for heat is indicated by the thermostat.

b. The Ignition Relay Coil is energized through the normally closed (NC) contacts of the Radiant Sensor and the NC contacts of the relay. NOTE: Figure 1 shows the electrical circuit of the relay just before it is energized. Figure 2 shows the circuit a *moment later*.

c. The igniter is energized through the NC contacts of the Radiant Sensor.

d. The Operating Gas Valve is connected such that the same 120 volts is applied to both sides of the Gas Valve and the valve stays closed.

FIGURE 2



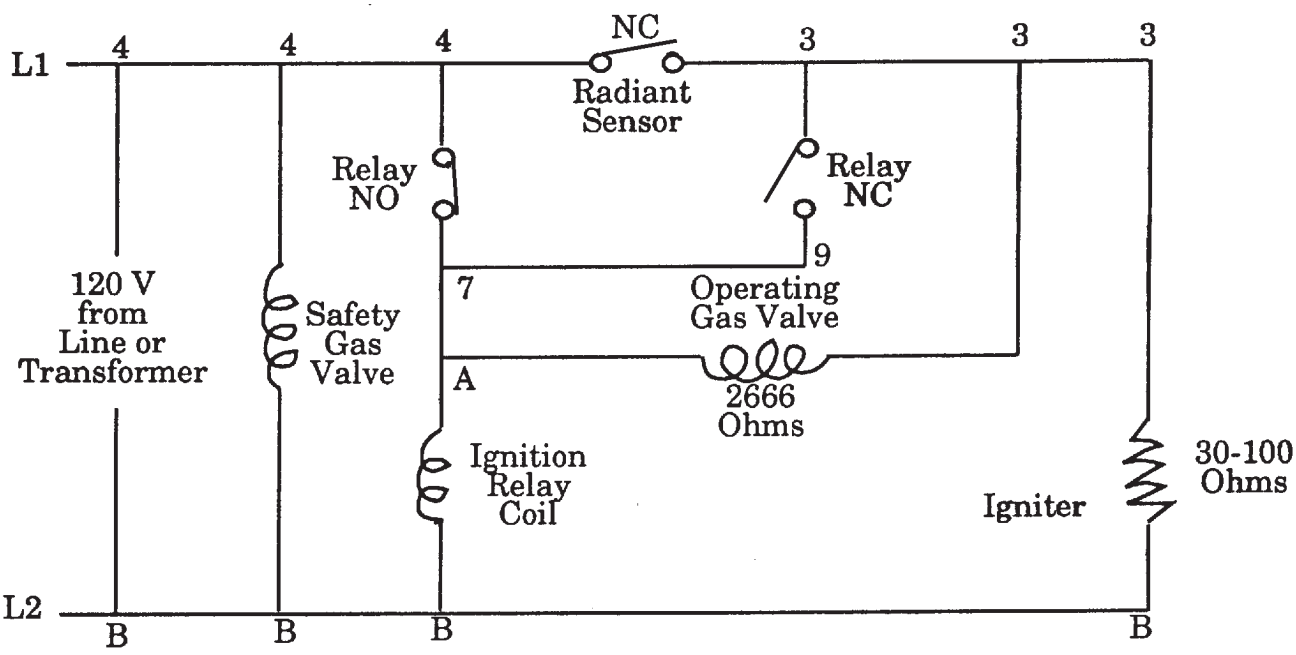
NORTON IGNITION SYSTEM
Figure 2 (Start of Cycle)

Step #2

a. The Ignition Relay closes now and the Relay Coil stays energized by being powered through the normally open (NO) contacts of the Ignition Relay which *close* before the NC contacts *open*.

b. The operating gas valve still has the 120 volts applied to both sides of the gas valve and the valve stays *closed*.

FIGURE 3



NORTON IGNITION SYSTEM
Figure 3 (About 20 Seconds Later)

Step #3

a. The Ignition glows *red hot*, which causes the Radiant Sensor to *open* its NC Contacts, which de-energizes the Igniter.

b. As the Radiant Sensor NC Contacts *open*, the 120 volt to one side of the operating Gas Valve Coil is removed and an electrical circuit is formed through the NO Contacts of the Ignition Relay, through the Gas Valve and through the Igniter, and the Gas Valve *opens*. The relatively low resistance of the Igniter allows nearby **full** voltage to be applied to the operating Gas Valve and nearby **zero** voltage to the Igniter and the Igniter is de-energized for all practical purposes.

c. As the raw gas flows against the *red hot* Igniter, ignition takes place. The radiant gas flame replaces the radiant glowing of the Igniter and the Radiant Sensor NC Contacts remain *open*.

IGNITION OPERATION

The flame will burn until the thermostat opens the circuit or until the time on the timer or coin meter expires.

The following summarizes the ignition operation:

- Start machine drying cycle.
- Carbide igniter will get *red hot.*
- Then, gas valve will open.
- The gas burners are ignited by the carbide igniter.
- Igniter will shut off and burners will remain on during drying cycle.
- Opening tumbler door will cause gas to extinguish. Shut door and gas will not light until flame sensor cools and normal ignition cycle begins.

NOTE

NOTE
Push "start" switch *after* door is shut.

- If gas does not light, then the sensor will cool down and restart the ignition cycle.

SAFETY FEATURES

SAFETY FEATURES

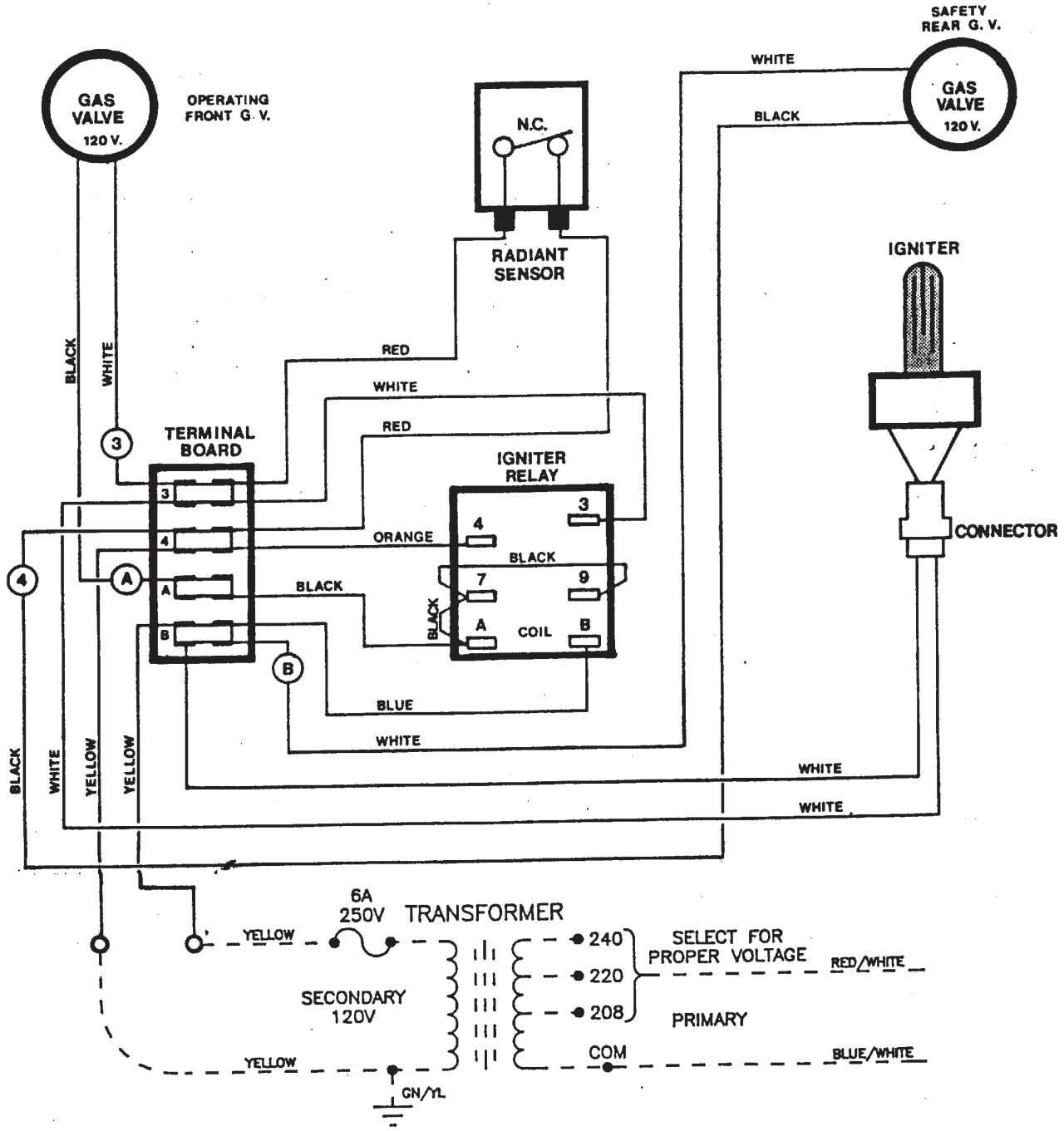
Power Interruptions During Burning of the Gas

Both gas valves are de-energized and the gas is shut off. The Ignition Relay is also de-energized and returns the contacts to the NO and NC positions. Even with resumption of power, the operating gas valve stays closed until the NC contacts of the Radiant Sensor close (about 30 seconds from time of power interruption). A normal ignition cycle begins at this time.

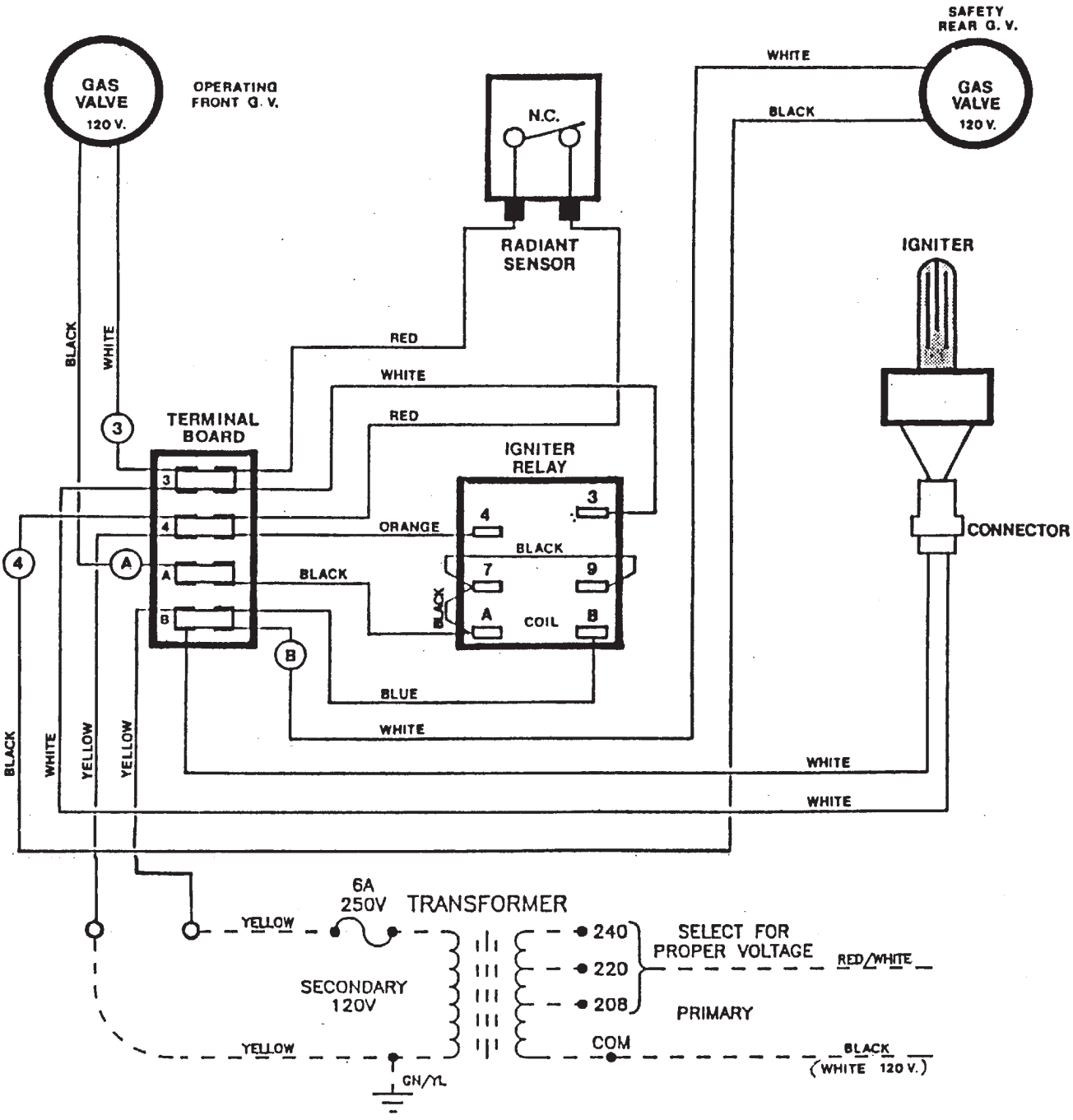
Burner Doesn't Light Because of Low Voltage or Low Gas Pressure

The operating gas valve will be energized for about 30 seconds and then the NC contacts of the Radiant Sensor will be closed. 120 volts is applied to both sides of the operating gas valve and it closes to shut off the gas. A normal ignition cycle begins at this time.

120 Volts; 50/60 HZ; 1 Phase - TWL1512



120 Volts; 50/60 HZ; 1 Phase - Gas Dryers - TWL1587
Automatic Computerized Drying Control



TEST PROCEDURE

TEST PROCEDURE

1. If igniter does not glow *red*, disconnect and test with separate 120V. Replace if it does not glow *red*. If it is damaged or cracked, replace.

2. Check wiring of ignition system parts per wiring diagram.

3. Gas valves must be open (click) when dryer is energized. Burners will ignite after 12 to 25 seconds.

4. After flame is burning, Igniter will go out. If both gas valves do not open, then replace.

5. If Igniter does not go out, then replace Radiant Sensor. If the Radiant Sensor glass is broken, replace it.

6. Open and close dryer loading door after gas has started burning. When door is closed, gas should not flow until radiant sensor has cooled and Igniter recycles.

INSTRUCTIONS FOR DIRECT IGNITION SYSTEM OPERATION

INSTRUCTIONS FOR DIRECT IGNITION SYSTEM OPERATION

1. Open manual gas valve; handle should be parallel with gas line.

2. Start machine drying cycle. The igniter will glow *red hot*; the gas valves will open and the burners will ignite.

3. The igniter will shut off and the burners will continue burning during heat cycle.

4. Opening the tumbler loading door will cause the gas to extinguish. Shut the door and the gas will not flow until the flame sensor has cooled. Push the **"start"** button to begin cycle after door is closed. If ignition fails, wait for five minutes to restart.

5. To shut off dryer, close the manual gas valve. The handle should be at a right angle to the gas line. Turn off the main electrical supply switch.

CAUTION

CAUTION
Check igniters with 120V before installing on dryer.

TROUBLE ANALYSIS FOR ENERGY SAVER DRYERS AND THE NORTON IGNITION SYSTEM

Trouble analysis for Energy Saver Dryers and the Norton Ignition System.

CAUTION

Problems with the Norton Ignition System can also be the result of the following:

EXHAUST PIPE SIZE

1. Exhaust air flow restriction. Exhaust pipe size **must be larger** than the **exhaust opening**. Refer to chart in manual.

DRYER INLET AIR

2. **Dryer inlet air** is a **MUST** for each unit. It must be 4 to 6 times the combined areas of the dryer exhaust outlet. Refer to chart in manual.

DRYER PANELS

3. All dryer **panels must be in place** and on machine for proper operation.

GAS PRESSURE

4. Gas pressure must be 7-9 1/2 inches WC for natural gas and 11 inches WC for propane or butane (bottled) gases.

5. Refer to chart for correct gas pipe sizes and lengths. The 3/4 inch gas pipe must be the minimum gas supply pipe for the dryer and over 50 ft., 1 inch pipe size.

MAIN BURNER ORIFICE SIZE

6. Main burner orifices **must be** correct size. They are calculated with the following information:
   a. Your locality heating value of gas, BTU/cu. ft.
   b. Local specific gravity of gas.
   c. Gas manifold pressure inches of WC.
      1) 3.5 inches WC pressure for natural gas.
      2) 11 inches WC pressure for propane or butane gases.
   d. Gas input rate per each burner orifice.

TROUBLE ANALYSIS FOR ENERGY SAVER DRYERS AND THE NORTON IGNITION SYSTEM (continued)

7. Voltage **must be** identical to what is on the Electrical Rating Plate. Prevent low voltage; it causes longer drying operation.

8. Back Draft Damper **must** swing **full open** to prevent air flow restrictions. (Check for full open operation every 6 months.) Non-operative or erratic operation of exhaust dampers will cause air flow switches to shut off gas and will result in longer drying time.

NOTE

NOTE
The above should be checked and corrected before attempting to troubleshoot the Norton Ignition System.