cissell
MANUFACTURING COMPANY

MAINTENANCE / SERVICE MANUAL

MODELS

GAS	STEAM	ELECTRIC
L36USS30G	L36URS30S	L36URS30E
L36USD30G	L36URD30S	L36URD30E
L36URS30G	L36URP30S	L36URP30E
L36URD30G		
L36USP30G		
L36URP30G		

CISSELL MANUFACTURING COMPANY

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Phone: (05970) 58333
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50 lb. Laundry Dryer

MAN14M

D07666

IMPORTANT NOTICES - PLEASE READ

For optimum efficiency and safety, we recommend that you read the Owner's 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 the 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

This dryer must be used only to dry water-washed fabrics.

To avoid fire hazard, do not dry articles containing foam rubber or similar textured 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.

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.

Note: 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.

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.

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

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.

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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.

TABLE OF CONTENTS
50 LB. LAUNDRY DRYER

MAINTENANCE/SERVICE

TROUBLESHOOTING

To help you troubleshoot the dryer, we list below the most common reasons for service calls and some answers to the problems. **Before you call service,** please review the following items:

DRYER WON'T START

DRYER WON'T START

1. Is the door completely closed?
2. Are the controls set to the **"on"** position?
3. Did you push the **"start"** control?
4. Has a fuse blown or a circuit breaker tripped?
5. Are the fuses tight?
6. Check for low voltage.

DRYER WON'T HEAT

DRYER WON'T HEAT

1. Is the dryer set for **"cooling time"** rather than **"drying time"?**
2. Are the gas valve in the dryer and the valve on the main gas line turned on?
3. Check for low or intermittant **gas pressure.**

CLOTHES ARE NOT SATISFACTORILY DRY

CLOTHES ARE NOT SATISFACTORILY DRY

1. *Timed cycle* - Did you allow enough heating time before the cool-down part of the cycle?
2. Is the lint screen blocked?
3. Is the exhaust duct to the outside clean and not blocked? *(A blocked exhaust will cause slow drying and other problems.)*

GAS DRYER IGNITION

GAS DRYER IGNITION

Refer to the page on *"Instructions for the Direct Ignition System Operation"*. Check to see if the manual gas valve is open. Then reset the dryer controls. **All panels, covers, and doors must be in place and closed before starting the dryer.**

VERY IMPORTANT
When calling the factory for service, always refer to the model number and serial number.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Motor will not start.	No power.	Check fuses on Circuit Breakers. Make sure Main Control Switch is ON.
	Incorrect power.	Check power source; voltage, phase and frequency must be the same as specified on Electrical Rating Plate.
	Time off.	Turn timer clockwise to desired time setting.
	Loose wiring connections.	Check wire connections in electrical box on rear of dryer.
	Defective starting relay.	Check coils and contacts.
Motor tripping on thermal overload.	Low voltage.	Check voltage at motor terminals. Voltage must be within ± 10% of voltage shown on Motor Rating Plate. If not, check with local power company for recommended corrective measures.
	Inadequate wiring.	Check with local power company to insure that wiring is adequately sized for load.
	Loose connections.	Check all electrical connections and tighten any loose connections.
	Inadequate air.	Check Installation Sheet in Service Manual for recommended make-up air openings.
	Poor housekeeping.	Clean lint accumulation on and around motors.
Basket motor will not run.	Loading Door OPEN.	Close door.
	Door Switch out of adjustment.	Adjust switch by removing cover and bend Actuator Lever to clear Switch Button 3/8" with cover in place.
	Defective Door Switch.	Replace switch.
	Defective Basket Motor Contactor.	Replace contactor.
Dryer does not stop at end of time period.	Defective Timer.	Replace Timer.
Motor runs, but basket will not revolve.	V-Belt broken.	Replace V-Belt.
	V-Belt loose.	Adjust belt tension.
	Motor Pulley loose.	Tighten set screw.
	Basket overloaded.	Remove load.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer noisy or vibrating.	Not leveled.	Check manual for proper leveling procedures.
	Fan out of balance.	Accidental damage to the fan blade can change the dynamic balance. Damaged fans should be replaced.
	Basket rubbing.	Adjust basket clearance.
	V-Belt sheaves.	Tighten set screws. Make sure sheaves are in proper alignment.
	Belt.	Adjust belt tension.
	Foreign objects.	Occasionally screws, nails, etc., will hang in the basket perforations and drag against the sweep sheets surrounding the basket. Such foreign objects should be removed immediately.
Dryer runs, but no heat.	Incorrect voltage.	Check for correct control voltage - 120V.
	No voltage.	Check power supply, check secondary voltage on transformer and check wiring and wiring diagram.
	Silicon Carbide Igniter will not glow - red.	Broken or defective igniter. Replace.
	Light Red Silicon Carbide Igniter.	Check for 2.5 minimum amperage. Low amperage not hot enough.
	Defective Igniter Time Delay Relay.	Heater No.1 and No. 6 open circuit. If above occurs, replace Time Delay Relay.
	Lint Door OPEN.	CLOSE Lint Door.
	Defective Gas Valve.	Replace Coil Assembly.
	Gas turned OFF.	Turn Manual Gas Valve ON.
	Defective Door Switch.	Replace Door Switch.
	Silicon Carbide Igniter not igniting gas.	Must be 3/16 to 5/16 above burner. Replace Radiant Sensor.
	Air Switch not operating.	Clean out lint compartment daily. Check Back Draft Damper for foreign objects, lint accumulation or other causes that may prevent damper from opening. Check duct work for lint build-up. Check installation sheet to insure that duct work and make-up air openings are adequately sized. Check exhaust outlet. If a screen has been improperly installed on the outlet, it may be clogged with lint or frozen over in winter. Never install a screen on the exhaust outlet. Vacuum within dryer drops to .09 inches of water column, or less, for normal operation of dryer, vacuum reading (in inches of water column) should range between .15 and .3 inches. Vacuum reading can be made with a Vacuum U-Gauge by removing a sheet metal screw in the front panel of dryer, and inserting the rubber tube of the vacuum gauge into screw opening.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer runs, but no heat. (continued)	Air Switch out of adjustment.	See Air Switch Adjustment Sheet in Service Manual.
	Air Switch defective	Replace Air Switch.
	Gas pressure too low.	Check manifold pressure and adjust to pressure specified on Rating Plate. If this pressure cannot be obtained, have gas supplier check main pressure.
	Improper orifice.	Dryer is orificed for type of gas specified on Rating Plate. Check with gas supplier to determine specifications for gas being used. If different from Rating Plate, contact factory and obtain proper orifices.
	Electric power to heating unit turned OFF.	Turn power ON.
	Line Fuse or Heater Circuit Fuse blown to unit.	Replace fuse.
	Defective relay.	Replace relay.
	Defective electric elements.	Replace elements.
	Defective thermostat.	Replace thermostat.
	Defective Safety Overload Thermostat.	Replace thermostat.
	Lint compartment door OPEN.	CLOSE door.
Main Burners burning improperly.	Burner Air Shutters CLOSED.	OPEN for blue flame.
	Dirt in burner.	Blow out.
	High gas pressure.	Adjust gas pressure per Rating Plate.
	Orifice too large.	Send to factory for correct orifices.
	Restricted or blocked exhaust.	Clean exhaust.
Main Burner cycles ON and OFF.	Radiant Sensor defective.	Replace Radiant Sensor.
Low or high gas flame.	Incorrect Main Burner orifices.	Replace orifices. Check factory for correct size.

Troubleshooting Chart

TROUBLE	CAUSE	REMEDY
Dryer too hot.	Incorrect Main Burner orifice.	Replace orifices. Check factory for correct size.
	Inadequate make-up air.	Make-up air must be 4 to 6 times the exhaust area of the dryer.
	Lint accumulated.	Remove lint.
	Exhaust duct dampers.	Must be full OPEN or replace.
	High gas pressure.	Adjust gas pressure per Rating Plate.
	Partially restricted or inadequately sized exhaust system.	Check Service Manual for recommended sizes. Remove obstructions or lint build up from duct work. NEVER use smaller size exhaust duct. ALWAYS use larger size.
	Defective thermostat.	Replace thermostat.
Dryer does not stop at end of time period (6).	Defective timer.	Replace timer.
Dryer runs no steam to coils.	Valve CLOSED.	Check all valves in steam supply and return. Make sure they are OPEN.
	Steam Trap blocked.	Remove and clean. Replace if defective.
	Solenoid Valve.	On dryers using solenoid temperature control, check operation of Solenoid Valve by advancing thermostat.
	Thermostat.	On dryers using solenoid temperature control, thermostat controls operation of Solenoid Valve. If defective, replace thermostat.
	Check Valve installed incorrectly.	Check for inlet and outlet marking on Check Valve and invert if necessary.
	Strainer clogged.	Remove plug and blow down Strainer or remove and clean throroughly if heavily clogged.
Water in Steam Line.	Steam Piping installed incorrectly.	Check piping per Steam Installation Instructions.
	Trap not functioning.	Check trap for size and capacity. If dirty and sluggish, clean thoroughly or replace. Check return line for high back pressure, or another trap charging against the trap functioning improperly.
Basket does not reverse.	Reversing timer.	Check timer to see if operating.
	24V Transformer	Check Transformer for 24V.

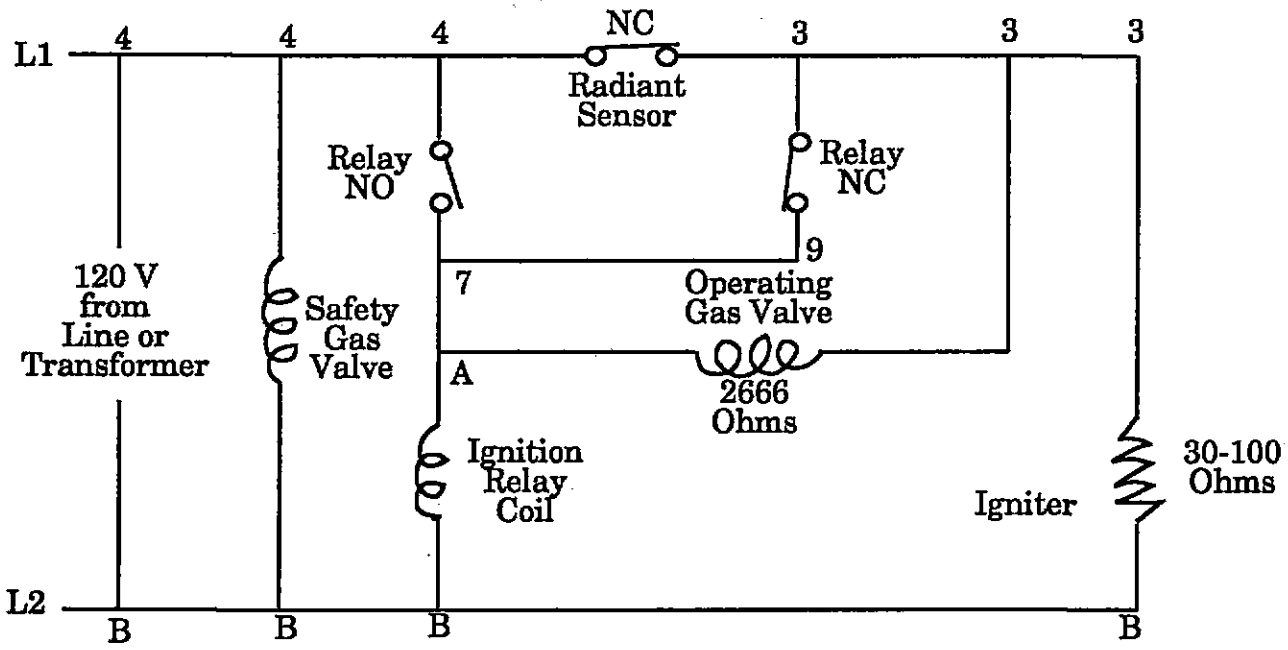
OPERATION OF NORTON IGNITION SYSTEM

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.

FIGURE 1

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.



NORTON IGNITION SYSTEM
Figure 1 (Start of Cycle)

Step #1

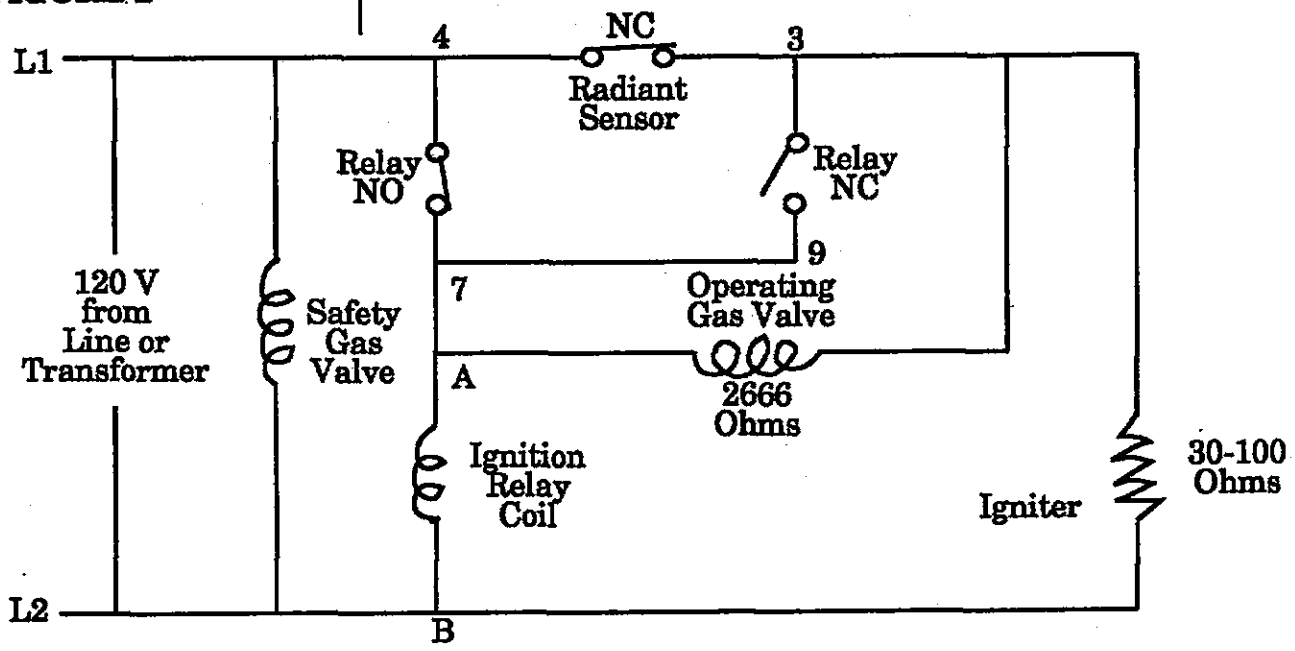
a. The Safety Gas Valve is connected across the lines and opens immediately as soon as a need for heat is indicated by the thermostat.

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



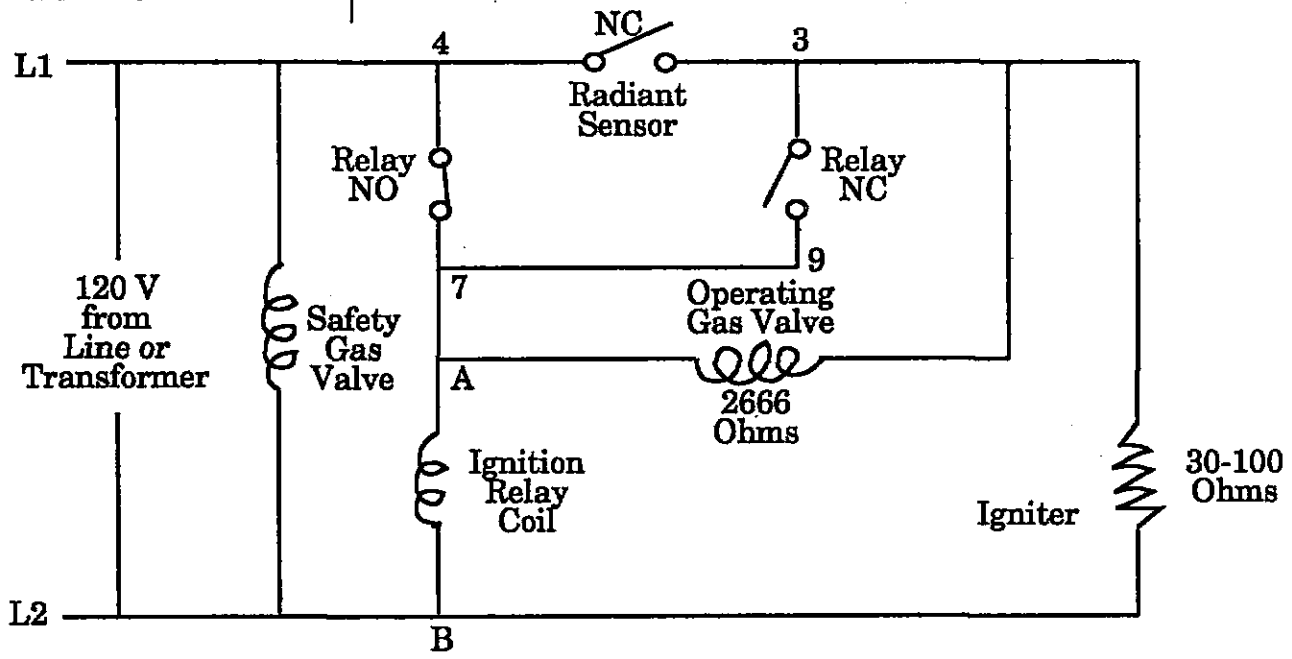
NORTON IGNITION SYSTEM
Figure 2 (An Instant Later)

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 Igniter 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 ingition 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

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

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.

TEST PROCEDURE

Test Procedure

1. Igniter will glow *red*. If Igniter does not glow *red*, then check the following:

   a. Disconnect Igniter wiring from dryer. Test with separate 120 V. Replace if it does not glow *red*.

   b. Also replace Igniter if cracked, broken or does not light burner in 25 seconds.

2. Unit must be wired correctly.

   a. Front gas valve **must always** be wired to "A" and "3" on the relay.

   b. Side or rear gas valve **must** be wired to "B" and "4" on the relay.

3. Rear or side gas valve must open (click) when dryer is energized.

4. Front gas valve will open and gas will flow to burners after 12 to 25 seconds, when Igniter is glowing *red*. Red Igniter will light gas from burners.

5. Igniter will go out when flame is burning.

   a. If both gas valves do not open (click), then replace.

   b. If unit does not operate correctly, then replace the relay.

   c. If Igniter does not shut off, then replace Radiant Sensor. Also, if the Radiant Glass is broken, replace.

PARTS IN UNIT

Parts in Unit

- Norton Igniter TU8596
- Ignition Radiant Sensor TU8598
- Ignition Relay TU8599
- Gas Valve TU13187 NG or TU13373 LP
- Wiring Diagram TWL1512

NOTE

NOTE
Open and close loading door after gas is burning and Igniter is shut off. Gas should not flow when door is reclosed, until Radiant Sensor has cooled and Igniter recycles.

TROUBLESHOOTING

Troubleshooting on each Norton Ignition Part:

1. Igniter TU8596.
   a. No Igniter *red*.
      1) Check voltage (120 V).
      2) Cracked or broken, replace.
      3) Check wiring TWL1512. Must be connected to No. "B" and No. "3" on relay.

2. Radiant Sensor TU8598.
   a. No Igniter *red*.
      1) Contacts failed open position, replace.
      2) Sensor NC (cold position).
      3) Sensor open (hot position).
      4) Glass broken, replace.
   b. Fails to open after 25 seconds.
      1) Low voltage on Igniter.
      2) Not in correct location.
      3) Glass broken, replace.
      4) Failure of contacts to open, replace.

TROUBLESHOOTING (CONTINUED)

3. Relay (Igniter) TU8599.
   a. Front gas valve does not turn on.
      1) Relay is wired incorrectly.
      2) Relay solenoid not operating.
      3) Relay contacts not operating correctly.
   b. Relay contacts should make before break - when the relay coil is energized, the contacts "4 & 7" should close before contacts "3 & 9" open.

4. Gas Valve TU13187 NG or TU13373 LP
   a. If valve does not open when 120 V is applied to it, then replace the coil assembly TU3832 (120 V).
   b. The gas valves must be wired correctly TWL1512. Front gas valve wires connected to "A" and "3" on relay. Rear gas valve wires connected to "B" and "4" on relay.

INSTRUCTIONS FOR THE DIRECT IGNITION SYSTEM OPERATION

Instructions for the Direct Ignition System Operation:

1. **Turn on** manual gas valve; handle should be parallel with gas line.
2. Start machine's 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 remain ON during heat cycle.
3. Opening tumbler door will cause gas to extinguish. Shut door and gas will not flow until flame sensor cools and normal cycle begins.

NOTE
Push START button after door is closed.

4. If gas does not light, the sensor will cool down and restart the ignition cycle.
5. **To shut off dryer,** turn off manual gas valve. Handle should be at right angle to pipe. Turn off main electrical supply switch.
6. If gas burners fail to ignite, please **wait 5 minutes** for a complete shut off period before next attempt.

TROUBLE ANALYSIS FOR ENERGY SAVER DRYERS AND THE NORTON GAS IGNITION SYSTEM

Trouble analysis for Energy Saver Dryers and the Electronic Silicon Carbide Gas Ignition System.

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

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

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.

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

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.

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 GAS IGNITION SYSTEM (CONTINUED)

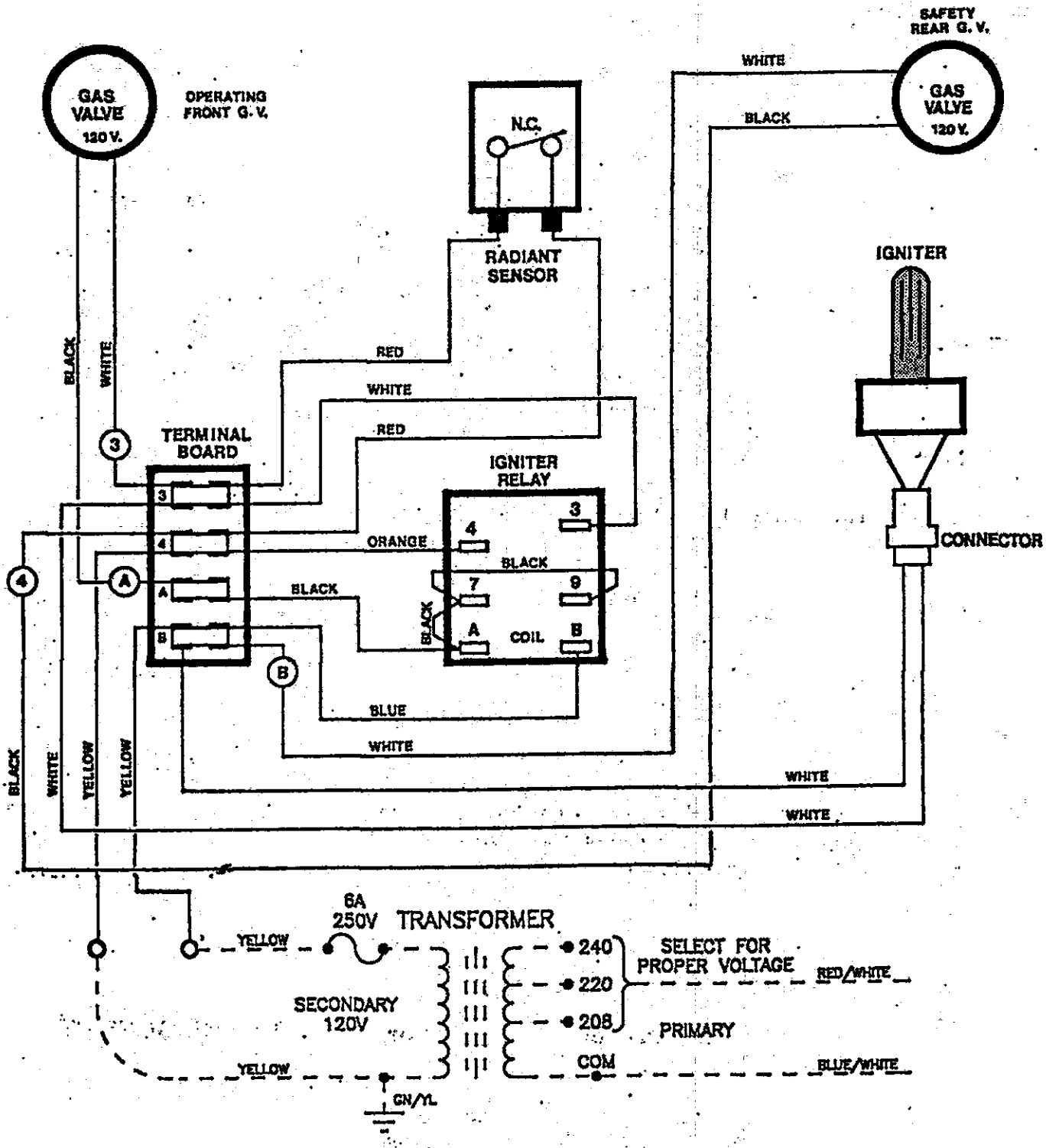
7. Voltage **must be** identical to what is on the Electrical Rating Plate. Prevent low voltage; it causes longer drying operation.

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.

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

Wiring Diagram - Norton Gas Ignition System (Illustration)

120 Volts; 50/60 HZ; 1 PHASE — TWL1512



GENERAL MAINTENANCE

1. **Clean lint trap daily.** Remove lint before or after each day of operation. A clean lint trap will increase the efficiency of the dryer and the moisture-laden air will be exhausted outside more quickly.

2. **Keep basket and sweep sheets clean.** Clean as often as needed. The basket and sweep sheets are accessible by removing the front panel of the dryer.

3. **Gas burners, steam coils, electric coils.** Check and clean often.

4. **Pulleys and belts.** Keep clean as oil and dirt will shorten the life of a belt. Check periodically for alignment. Pulley shafts must be parallel and the grooves must be aligned. Check belt tension periodically. Adjust tension by movement of idler bracket. Lubricate idler pulley once every two months using six grams of high temperature grease. Do not over-grease.

5. **Electric motor.** Keep motor clean and dry. Motors are packed with sufficient grease for 10 years normal service. After that, bearings and housing should be cleaned and repacked one-third full with Chevron Grease No. SR1-2. See label on motor for further information.

   If motor overheats, check voltage and wiring. Low voltage, inadequate wiring and loose connections are the main cause of motor failures.

6. **Adjustable leveling bolts.** One at each corner permits accurate alignment of dryer.
   To adjust: Block one corner of dryer up off the floor, loosen hex nut. With wrench, turn bolt clockwise to raise dryer, opposite to lower. Rear bolts are outside of dryer and front bolts are inside lint trap compartment.

GENERAL MAINTENANCE (continued)

7. **Periodically clean** and examine exhaust system.

8. **Keep dryer area clean** and free of gasoline, combustible materials and other flammable liquids or vapors.

9. **Do not obstruct the flow** of combustion (make-up) air and ventilating air.

10. **Check gas pressure** periodically.

11. **Gas burner air inlet shutters** can be adjusted for proper flame by following instructions outlined on separate page of this manual.

12. **Main Basket Bearings.** Lubricate once every six months using six grams of high temperature grease. Do not over-grease.

13. **Steam Heating Units.** Keep steam coils clean. Check periodically and clean as often as required. Remove lint and dirt accumulation from coil fins to avoid decreasing their efficiency.

14. **Clean Out Panel (Energy Saver Gas Models Only).** Remove this panel located on the Energy Saver Heating Unit and clean the inside area of lint and dirt on a regular basis.

BURNER AIR INLET SHUTTERS ADJUSTMENT

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

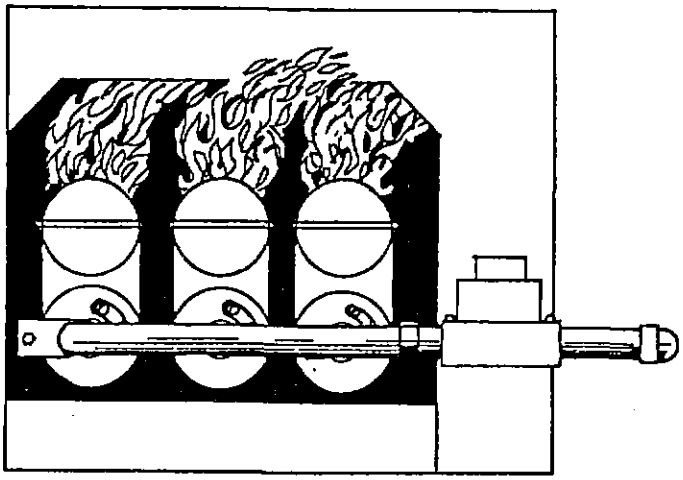
TYPE OF GAS	BURNER AIR INLET SHUTTERS ADJUSTMENT
Natural Gas	1/2 Open
Liquid Petroleum	1/4 Open
Manufactured Gas	1/16 Open

AIR SHUTTERS ADJUSTMENT

AIR SHUTTERS ADJUSTMENT:

Proper Method

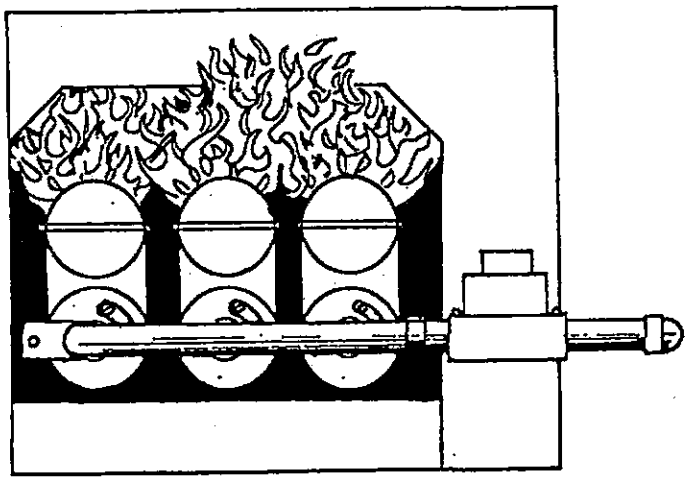
Close air shutters to *yellow tip*, then open air shutters to *blue flame tip*. *Orange tips* are impurities in the air such as lint, dust, etc.



CORRECT

BURNER AIR INLET SHUTTERS ADJUSTMENT

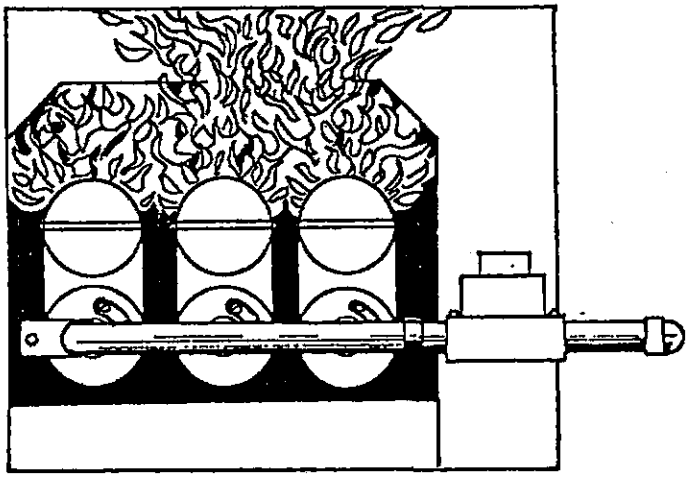
Burner Air Inlet Shutters are adjusted closed. Insufficient air is admitted through the burner. Flame pattern is straight up and flame is yellow.



WRONG — NEED TO ADJUST SHUTTER

BURNER AIR INLET SHUTTERS ADJUSTMENT

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 — NEED TO PROVIDE CORRECT AIRFLOW THROUGH THE DRYER

REPLACING BEARINGS AND COLLARS INSTRUCTIONS

Step 1 Remove belt guard, V-belt, spacer and basket sheave.

Step 2 Loosen set screw in first locking collar and remove from shaft by rotating clockwise. If necessary, use punch and mallet, hitting in clockwise direction to break collar loose.

Step 3 Remove the two bolts holding the pillow block bearing and take it off the shaft.

Step 4 Remove the second locking collar in the same manner as in Step 2.

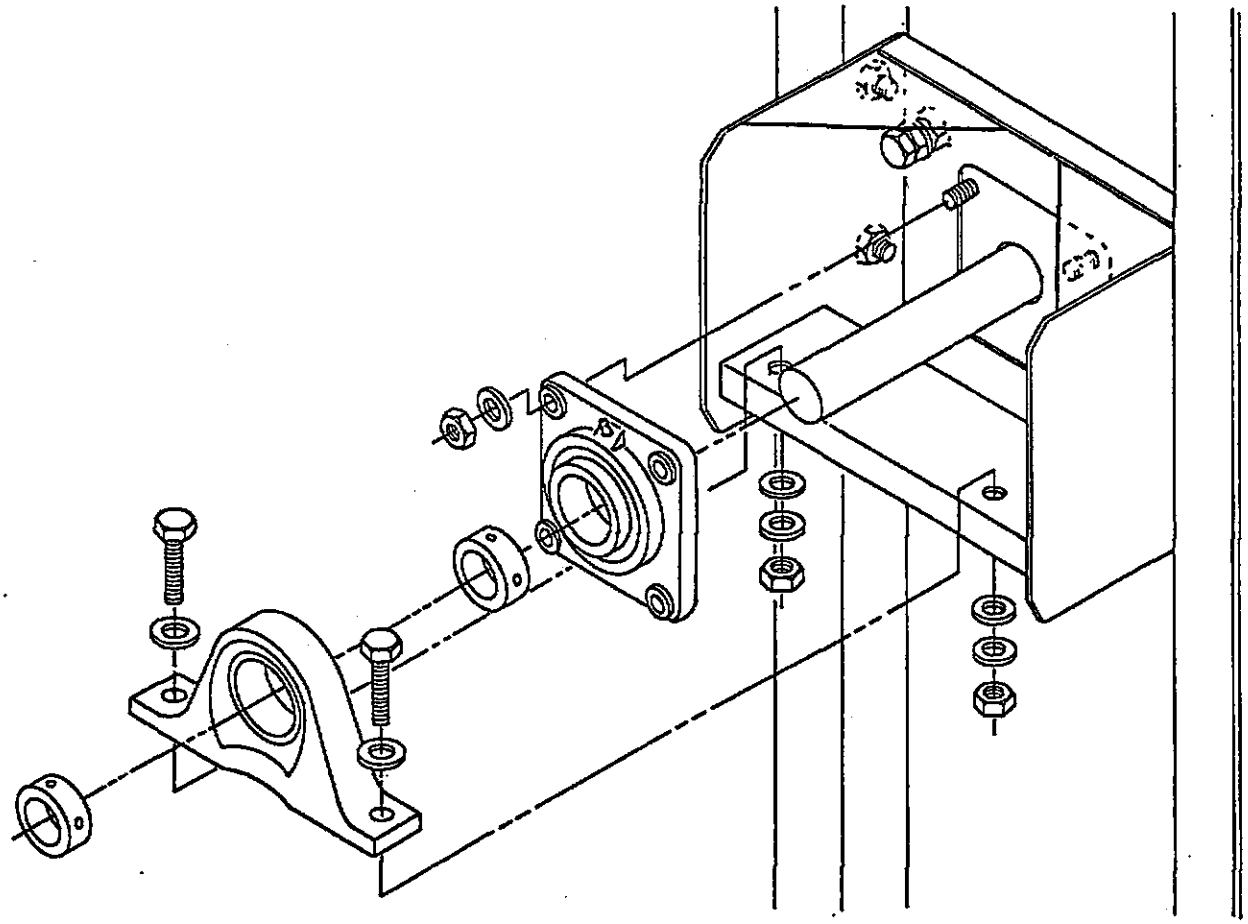
Step 5 Remove the three nuts and washers holding the flange basket bearing and take it off the dryer.

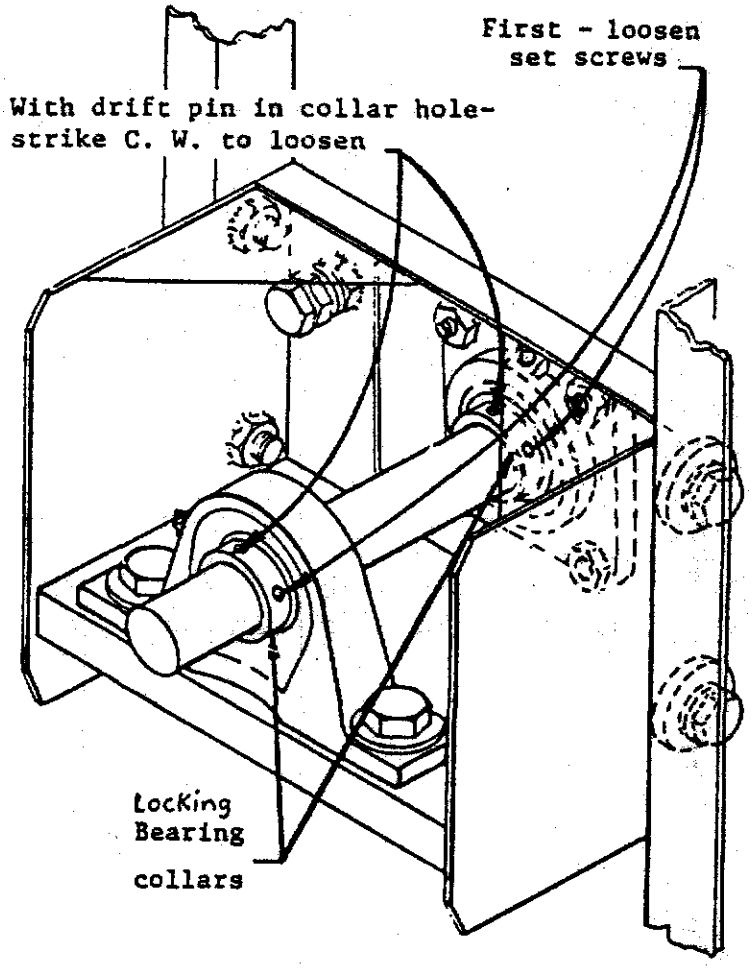
Step 6 Inspect the bearings and collars for damage and replace as necessary in reverse order of removing them. Before tightening securely, align basket per instructions on separate instruction sheet.

Step 7 Lubrication Guide — Grease bearings at regular intervals shown on the following page. Use #42-032-6015 Lubriplate #310 1 lb. can or 14.5 oz. tube, Lubriplate #930-2 multi-purpose grease #10098.

Bearings are factory lubricated and ready for use. They are equipped with fittings for lubricating. Add grease slowly; when grease begins to come out of the seals, the bearing will contain the correct amount.

Operating Conditions	Grease Intervals
Clean	Every 6 months
Dirty	Every month
Moisture	Every week





Rear View of Dryer

TU13147

BASKET ALIGNMENT - DOUBLE MOTOR MODEL

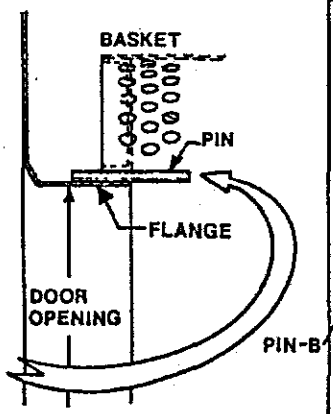
Step 1 Loosen the 4 gear reducer mounting bolts (1, 2, 3, & 4) on rear of dryer, and 2 adjusting bolts #5, on gear reducer housing. (figure 3)

Step 2 Place one "A" and two "B" diameter pins inside the drying compartment between the rim of the basket opening and the rim of the door opening in the positions shown in figure 1 and figure 2. Check the two "B" pins for equal clearance.

Step 3 With the pins in position, tighten the two No. 5 bolts until flush against back of dryer. Retighten gear reducer mounting bolts in the numerical order indicated in figure 3. Tighten lock nuts No. 6 to secure bolts No. 5 in position. Then remove pins.

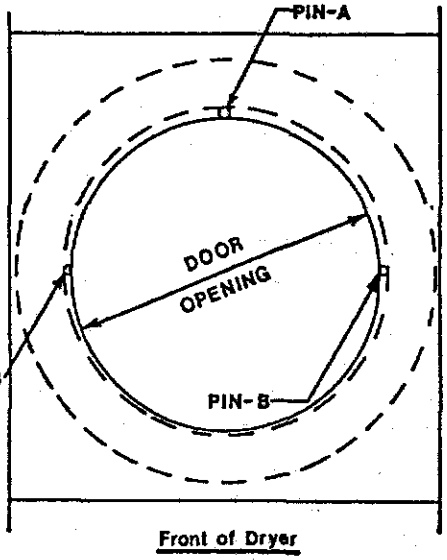
Step 4 Check the space between basket and door opening at "A" pin and "B" pin positions (figure 2). If the gap is not approximately the same on both sides, repeat Steps 1, 2, & 3.

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



Right Side of Dryer

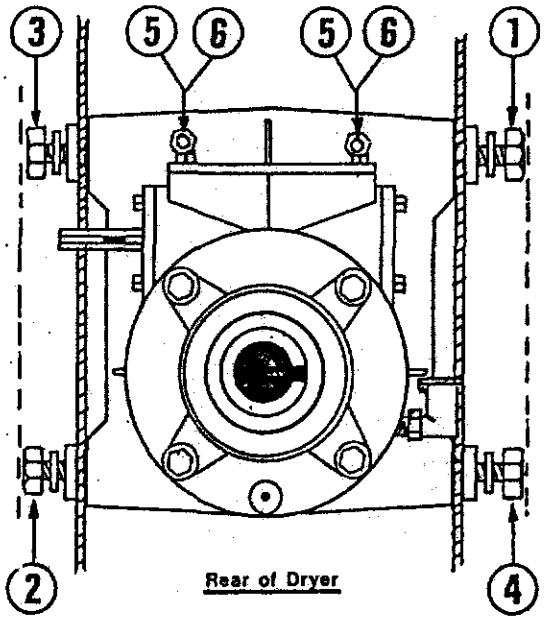
Fig.1



Front of Dryer

PIN-A-1/2 DIA.
PIN-B-5/16 DIA.

Fig.2



Rear of Dryer

Fig.3

BASKET ALIGNMENT - SINGLE MOTOR MODEL

Step 1 Loosen both eccentric locking collars on the two basket bearings (flange and pillow block types). Loosen the set screws and turn clockwise. If necessary, use a punch and mallet, striking the punch hole in a clockwise direction to break it loose.

Step 2 Loosen the 4 side bolts, "1, 2, 3, 4," on the basket bearing bracket. (see figure 3) Loosen the two adjusting bolts and locknuts "5, 6," inside the bracket. And loosen the bolts "7," on the pillow block bearing.

Step 3 Place one "A" and two "B" diameter pins inside the drying compartment between the rim of the basket opening and the rim of the door opening in the positions shown in figures 1 and 2. Check the two "B" pins for equal clearance.

NOTE
Push the basket toward the rear.

Step 4 With the pins in position, lock the collar nearest the rear wall of the dryer on the shaft by striking the punch hole in a counter-clockwise direction. Tighten the set screw.

Step 5 Tighten the side bolts "1, 2, 3, 4," in numerical order. Tighten the bolts "7" on the pillow block bearing. And tighten the bolts "5" and locknuts "6".

Step 6 Remove the aligning pins and if alignment is okay, then tighten the collar on the pillow block bearing the same as in Step 4.

CAUTION
Check to see that the set screws are wrench tight on the locking collars.

FIG. 1

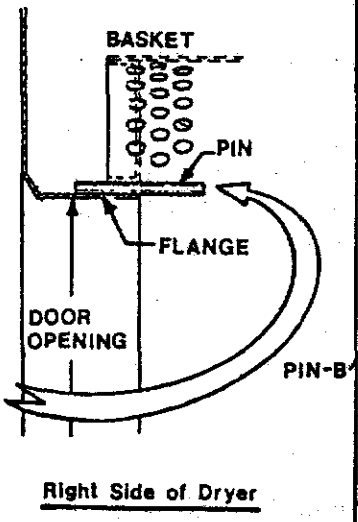
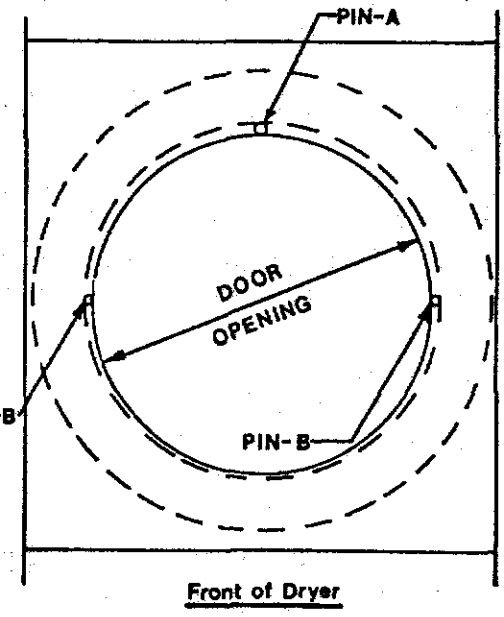
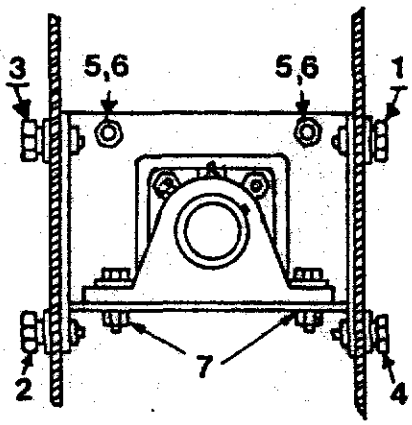


FIG. 2



PIN-A-1/2 DIA.
PIN-B-5/16 DIA.

FIG. 3



BASKET SHIMMING INSTRUCTIONS

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

A. Align the basket as per instructions in the manual.

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.

D. Remove the basket (do not loosen the alignment bolts).

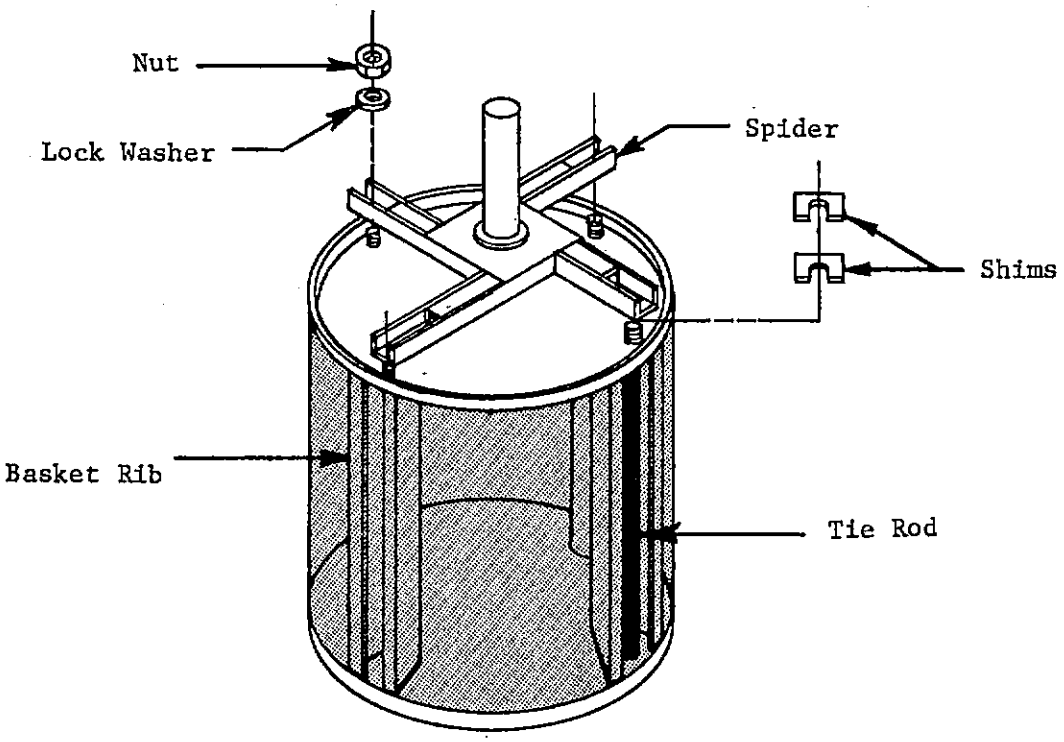
E. With the basket on the floor (spider up), place one or two shims between the spider leg and the back of the basket at the marked rib position. (see drawing)

F. Re-insert spider and basket assembly and re-check cylinder.

G. If at this point, basket is still out-of-round, procedure must be repeated starting with Step B.

H. Upon completion of shimming process, realignment of basket is necessary.

NOTE
If the point mentioned in *Step B* is between two ribs, both ribs might have to be shimmed.


Nut
Lock Washer
Spider
Shims
Basket Rib
Tie Rod

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.

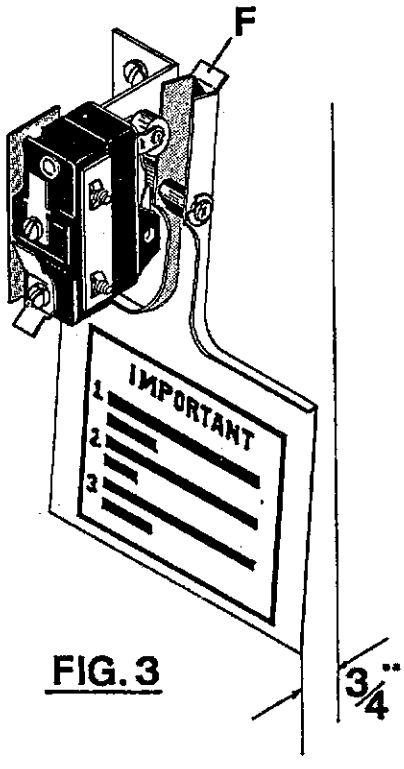


FIG. 3

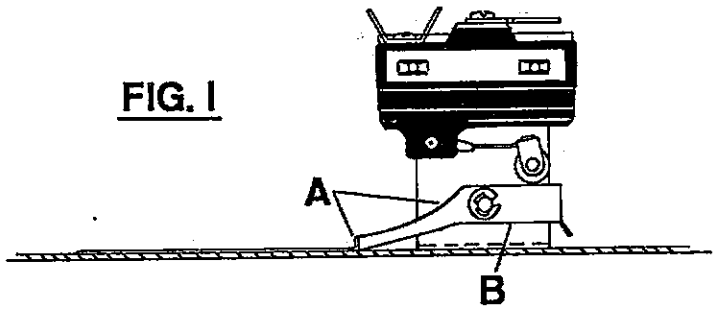


FIG. 1

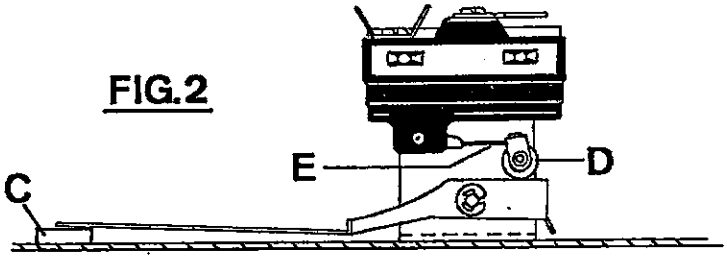


FIG. 2

OPERATION AND MAINTENANCE

OPERATION AND MAINTENANCE

Before operating dryer
Your new dryer is equipped with a Gear Reducer (TM100), and before you start up the dryer you need to do the following:

- Remove the Solid Plug from the top of the Gear Box.
- Install the Breather Plug (included) in its place.

After Start Up
The Gear Box is shipped filled with oil to the right level and after two weeks or 100 hours of operation drain the oil, and flush the Gear Box with a light flushing oil. The original oil can be used for re-filling if it has been filtered; otherwise, new oil must be used. After this, change the oil every six months or 2500 hours of operation.

CAUTION

- **USE AGMA 8EP TYPE OIL; CISSELL PART #TU3465 *ONLY*!!**
- To fill with oil: Remove the Oil Level Plug, and add oil until oil is noted at the Oil Level Plug hole.
- Re-install the Oil Level Plug and the Breather Plug in the Gear Reducer before operating.

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

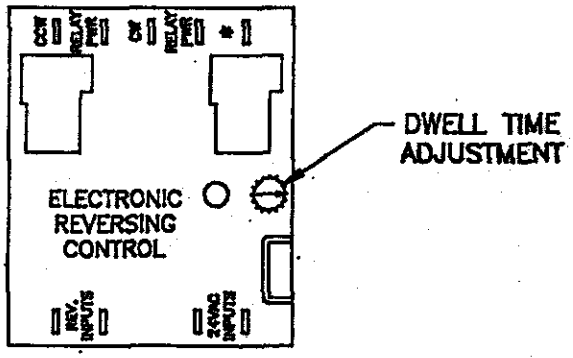
CAUTION
Dryer power supply must be *shut off before* adjusting timer.

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.



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.

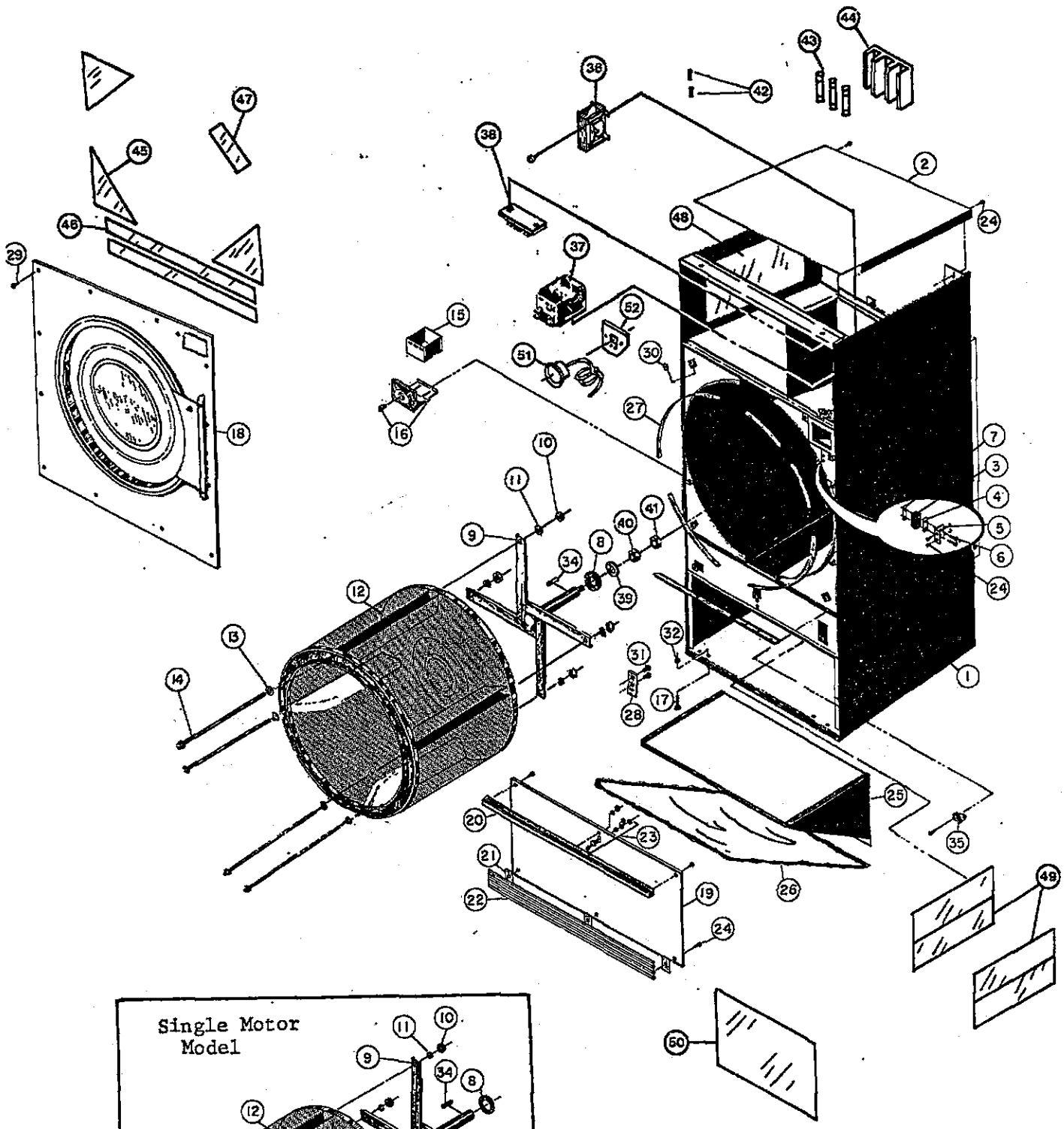
Basket rotates counter-clockwise as viewed from front of tumbler.

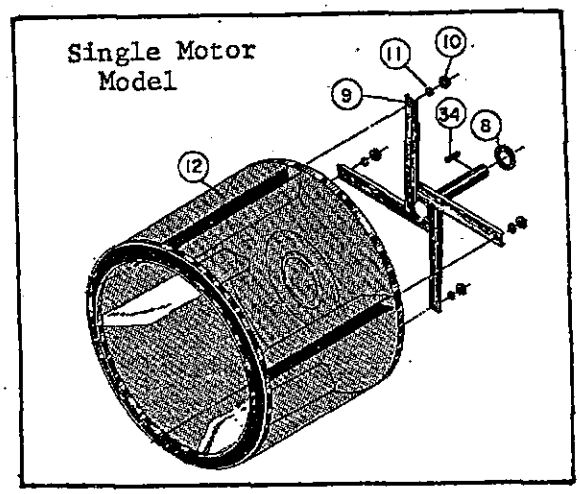
To change rotation of both fan and basket, reverse power leads L1 and L2.

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

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

50 lb. Laundry Dryer - Front Exploded View (Illustration)





Grease to be applied to all bearing shafts. #42-032-6015 Grease Lubriplate #310- 1 lb. can OR 14.5 Oz. Tubes- Lubriplate No. 930-2 Multipurpose Grease #10098.

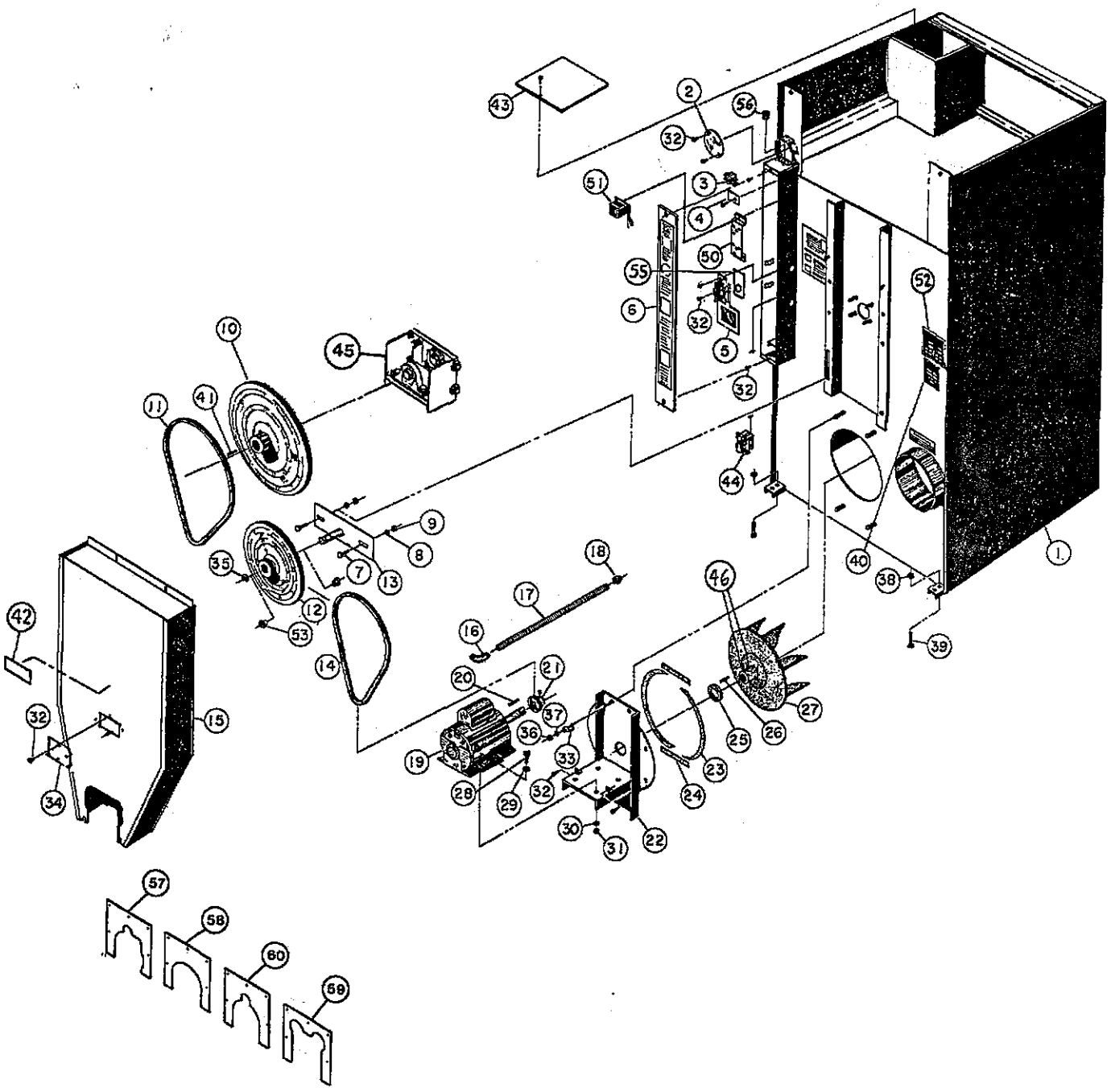
Parts - 50 lb. Laundry Dryer - Front Exploded View

1	TU10897	Jacket Welded Assembly (For Coin Vault)
	TU10898	Jacket Welded Assembly (For Time and Temperature)
2	TU2621	Solid Top (Gas)
3	TU1979H	Door Switch
4	TU1770	Insulator
5	TU2373	Door Switch Mounting Bracket
6	TU3219	#6 x 1" Sheet Metal Screw
7	TU1771	#6 Tinnerman Twin Nut
8	TU108	Felt Seal
9	K21	Spider Welded Assembly (Single Motor Models)
	TU5231	Spider Welded Assembly (Double Motor Models)
10	TU2882	1/2" - 20 Hex Nut
11	TU2831	1/2" Split Lockwasher
12	TU6822	Basket Weldment
13	TU2883	1/2" Cut Washer
14	TU2313	Tie Rod
	TU5490	Shim (3 required) (See Instructions for Shimming)
15	CM35	Coin Box
16	CM61	Coin Vault Lock Assembly
17	TU3211	3/8" - 16 x 2 1/2 Leveling Bolt
18	TU5810	Front Panel and Door Assembly (For Coin Vault) (Specify Color)
	TU6056	Front Panel and Door Assembly (For Time and Temperature) (Specify Color)
19	TU5566	Lint Door Welded Assembly (Specify Color)
20	TU7473	Handle
21	TU2710	Trim Holder
22	TU2385	Trim
23	TUB1867	Lock and Key
24	TU7733	#8 x 1/2" Self Drill Screw
25	TU8368	Lint Trap Frame Assembly ONLY
26	TU5261	Self-Cleaning Lint Screen Assembly
	TU10362	Self-Cleaning Lint Screen ONLY
	TU5225	Lint Screen Frame ONLY
27	TU5876	Sweep Sheet Gaskets
28	TU3206	Lock Plate
29	TU2878	#10 x 5/8" S.M.S.
30	TU2877	#10 Speed Nut
31	TU1978	#14 x 3/4" S.M.S.
32	TU4937	3/8" - 16 Jam Nut
33	TU2420	S. N. Plate
34	TU5887	Key
35	TU3240H	185° F Thermostat Mounted to Fan Housing
36	K377	Transformer 208 or 230V with Fuses
37	TU8599	Relay 120V (Igniter)
38	TU8629	Terminal Board (Igniter)
39	TU2493	Flat Washer **
40	TU3537	Full Nut **
41	TU3536	Jam Nut **
42	TU8738	Fuses
43	TU10065	Fuses
44	TU7505	Fuse Holder
45	TU7735	Insulation (3 each) *
46	TU8107	Insulation (2 each) *
47	TU8108	Insulation (1 each) *
48	TU7793	Insulation (1 each) *
49	TU8152	Insulation (4 each) *
50	TU8153	Insulation (1 each) *
51	TU3593	Thermometer (Optional)
	TU3816	Lens Repl. (Texas Gage ONLY)
	TU8475	Lens Repl. (Marshaltown Inst. ONLY)
	TU11193	Lens Repl. (Weiss)
	TU13213	Lens Repl. (Weiss)
52	TU6766	Thermometer Mtg. Plate

* Used on Energy-Saver Models ONLY

** Double Motor Models ONLY
TU5808 Lint Door Assembly consists of 19-24
TU8380 Self-Cleaning Lint Trap Assembly consists of 25-26

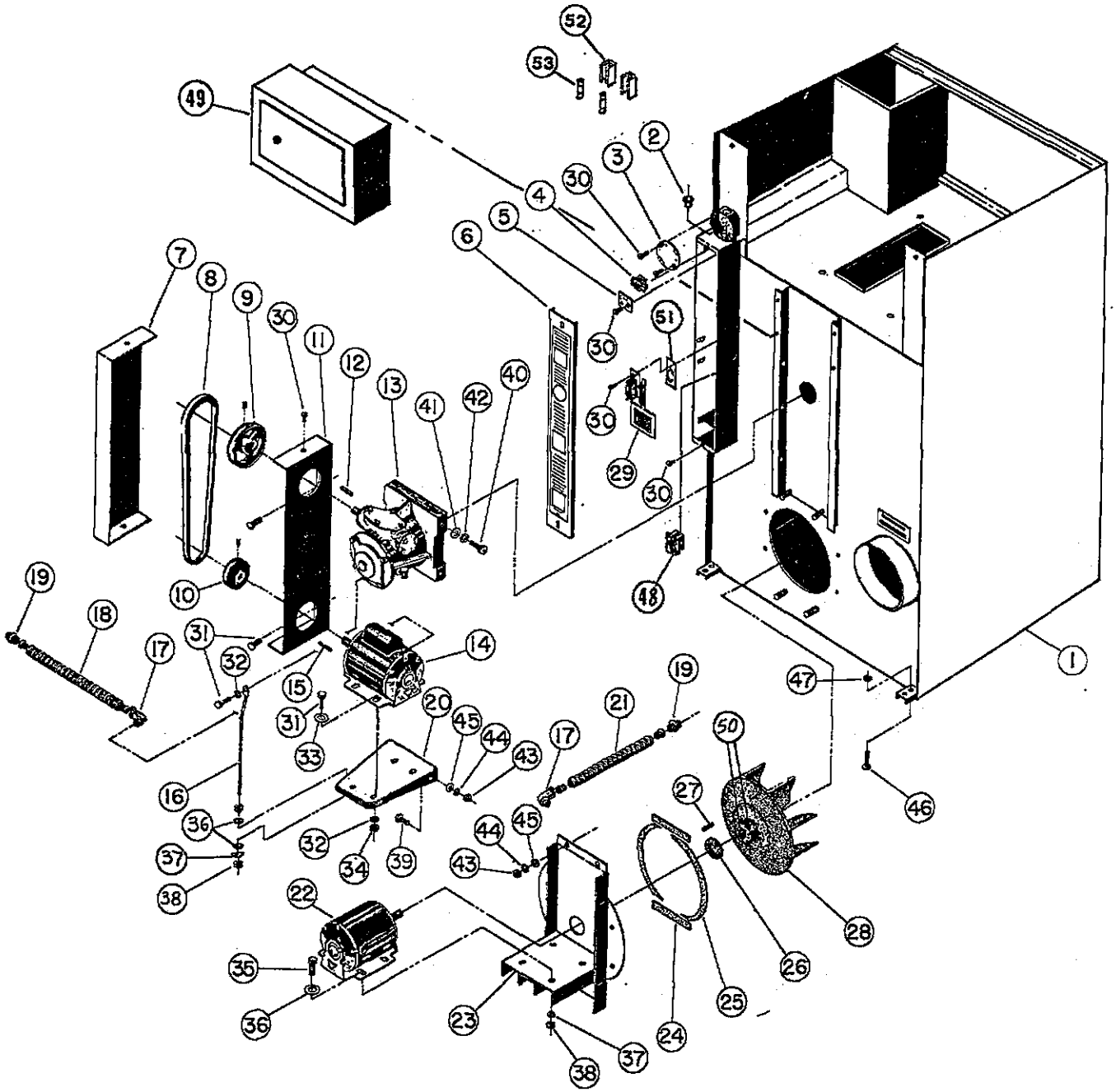
50 lb. Laundry Dryer - Single Motor Model - Rear View (Illustration)



Parts - 50 lb. Laundry Dryer - Single Motor Model - Rear View

1	TU10897	Jacket Welded Assembly (Coin Meter)
	TU10898	Jacket Welded Assembly (2 Timer)
2	SB170	Junction Box Cover
3	M155	Wire Harness Clamp
4	TU2726	Strain Relief Plate
5	TU8206	Air Switch Assembly (See Separate Page)
6	TU5890	Control Box Cover
7	TU12576	Carriage Bolt - 3/8" - 16 x 1"
8	VSB134	3/8" Split Lockwasher
9	TU3188	3/8" Hex Nut Nylok
10	TU5446	Basket Sheave - 50/60 Hz.
11	TU5447	V-Belt - 4L660 - 50/60 Hz.
12	TU5217	Idler Sheave - 50/60 Hz.
13	TU12803	Idler Bracket with Grease Fitting
14	TU6725	V-Belt (50/60 Hz.)
15	TU12798	Rear Guard with Cover Plate
16	TU4791	Right Angle Connector
17	CFB4200	Cable - 42" Long
18	TU4790	Straight Connector
19	-----	Specify Motor No., Voltage, Phase and Hz.
20	TU5241	Key
21	TU7603	Motor Sheave, 60 Hz., with Set Screw
	TU12802	Motor Sheave, 50 Hz., with Set Screw
22	TU5849	Motor Mount - 50/60 Hz.
23	TU2473	Side Gasket
24	TU2474	Top and Bottom Gasket
25	TU2476	Felt Seal
26	TU4684	Key
27	TU5874	Fan Wheel with Set Screws 60 Hz. Gas Models
	TU8740	Fan Wheel with Set Screws 50 Hz. Gas Models and 50/60 Hz. Steam, Electric
28	TU5439	Hex Head Screw - 5/16" - 18 x 3/4"
29	VSB130	Cut Washer - 5/16"
30	TU2814	Split Lockwasher - 5/16"
31	C249	Hex Nut - 5/16"
32	TU7733	Self Drilling Screw
33	TU6484	Cable Strap
34	TU11707	Cover Plate
35	TU3247	Retaining Ring
36	TU4787	Hex Nut - 3/8"
37	VSB134	Lockwasher - 3/8"
38	TU4937	Jam Nut - 3/8"
39	TU3211	Leveling Bolt - 3/8" - 16 x 2-1/2"
40	F1116	Serial No. Plate
41	TU5887	Key
42	TU10418	Lubrication Label
43	TU10651	Mechanism Box Cover (Steam Dryer ONLY)
44	TU13224	Relay - 120V 2 Pole
	TU13225	Relay - 240V 2 Pole
	TU3495	Relay - 240V 3 Pole
	TU3496	Relay - 120V 3 Pole
	TU10795	Relay - 480V 4 Pole (Gas)
	TU10669	Relay - 480V 4 Pole (For Steam or Electric)
45	-----	Cast Iron Bearings and Bracket Assembly (See separate page for parts breakdown)
46	TU3282	Round Set Screw ONLY
	F819	Square Set Screw ONLY
50	TU6220	Relay Mounting Plate
51	TU4659	Transformer - 380/440/550V., 50/60 Hz.
	TU4660	Transformer - 240/480V/60 Hz.
52	TU6783	Rating Plate (Electric)
53	TU7184	Bronze Bushing (2 each)
54	TU9600	Idler Pulley Label
55	TU9180	Air Switch Plate
56	TU2372	Bushing - 7/8"
57	TU11662	Motor Adapter (MTR202)
58	TU10359	Motor Adapter - 3 Ph. ONLY
59	TU10360	Motor Adapter - G.E., 1 Ph.
60	TU10361	Motor Adapter (Emerson, 1 Ph. ONLY

50 lb. Laundry Dryer - Double Motor Model - Rear View (Illustration)

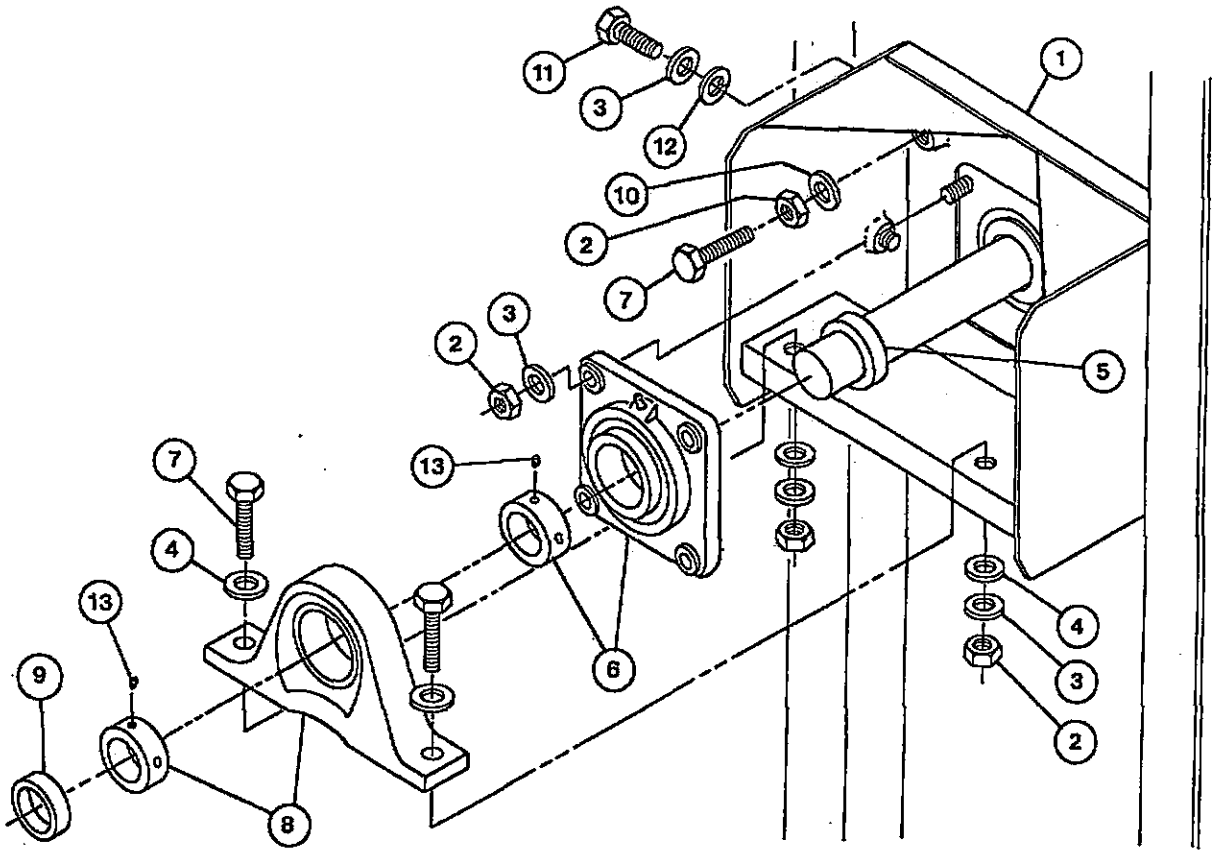


Parts - 50 lb. Laundry Dryer - Double Motor Model - Rear View

1	TU10897	Jacket (Coin Meter Model)
	TU10898	Jacket (2 Timer Model)
2	TU2372	Bushing
3	SB170	Junction Box Cover
4	M155	Wire Harness Clamp
5	TU2726	Strain Relief Plate
6	TU5890	Control Box Cover
7	TU3857	Belt Guard Cover
8	TU2317	V-Belt 46-380 - 50/60 Hz.
9	TU2323	Gear Sheave (AK-51) with Set Screw, 60 Hz., Non-Rev.
	TU6722	Gear Sheave (AK-51H) with Set Screw, 60 Hz., Rev.
	TU2211	Gear Sheave (AK-46) with Set Screw, 50 Hz., Non-Rev.
	510101040	Gear Sheave (AK-46H) with Set Screw, 50 Hz., Rev.
10	F1034	Motor Sheave (AK-34) with Set Screw, 60 Hz., Non-Rev.
	TU7334	Motor Sheave (AK-34H) with Set Screw, 60 Hz., Rev.
	TU1952	Motor Sheave (AK-39) with Set Screw, 50 Hz., Non-Rev.
	510101041	Motor Sheave (AK-39H) with Set Screw, 50 Hz., Rev.
11	TU5254	Belt Guard Mounting
12	TU5241	Shaft Key
13	TM100	Small Gear Reducer
14		Basket Motor (Specify Motor Number and Voltage)
15	TU5241	Key
16	TU8608	Belt Adjusting Rod
17	TU4791	Right Angle Connector
18	504641292	1/2" Greenfield Cable (Specify 29" Long)
19	TU4790	Straight Connector
20	TU33	Motor Drive Bracket
21	504641292	1/2" Greenfield Cable (Specify 29" Long)
22		Fan Motor (Specify Motor Number and Voltage)
23	TU2376	Motor Mount (50/60 Hz.)
24	TU2474	Top and Bottom Gasket
25	TU2473	Side Gasket
26	TU2476	Felt Seal
27	TU4684	Key
28	TU5874	Fan Wheel with Set Screws 60 Hz. Gas Models
	TU8740	Fan Wheel with Set Screws 50 Hz. Gas Models and 50/60 Hz. Steam, Electric
29	TU8206	Air Switch Assembly (See separate page)
30	TU7733	8 x 1/2" Self Drill Screw
31	RC344	1/4" - 20 x 3/4" Cap Screw
32	TU2846	1/4" Lockwasher
33	TU2847	1/4" Cut Washer
34	TU4934	1/4" - 20 Hex Nut
35	TU5439	5/16" - 18 x 3/4" Cap Screw
36	VSB130	5/16" Flat Cut Washer
37	TU2814	5/16" Split Lockwasher
38	C249	5/16" - 18 Hex Nut
39	TU3124	3/8" - 16 x 3/4" Cap Screw
40	RC347	1/2" - 13 x 1/4" Cap Screw
41	TU1851	1/2" Cut Washer
42	TU2831	1/2" Lockwasher
43	TU4787	3/8" - 16 Hex Nut
44	VSB134	3/8" Lockwasher
45	IB140	3/8" Cut Washer
46	TU3211	3/8" - 16 x 2-1/2" Level. Bolts
47	TU4937	3/8" - 16 x 3/4" Cap Screw
48	TU1984	Relay - 120V, 50/60 Cy., 2 Pole
	TU1985	Relay - 240V, 50/60 Cy., 2 Pole
	TU3495	Relay - 208/240V, 50/60 Cy., 3 Pole
	TU3496	Relay - 120V, 50/60 Cy., 3 Pole
49		Reversing Control Box (3 Ph. ONLY)
50	TU3282	Round Set Screw ONLY
	F819	Square Set Screw ONLY
51	TU9180	Air Switch Plate
52	TU7505	Fuse Holder (2)
53	TU8279	Fuse (2)
54	TU10640	Power Connection Label

Bearings and Related Parts (with Illustration)

1	TU10674	Bearing Support Bracket
2	OP233	1/2" Hex Nut
3	TU2831	1/2" Lockwasher
4	TU2883	1/2" Flat Washer
5	TU10854	Spacer
6	TU10850	Flange Bearing with Collar
7	TU2195	1/2" - 13 x 1-3/4" Cap Screw
8	TU10676	Pillow Block Bearing with Collar
9	TU10177	Spacer
10	OP251	1/2" I.T. Lockwasher
11	RC347	1/2" - 13 x 1=1/4" Cap Screw
12	TU1851	1/2" x 1/4" Cut Washer
13	TU10644	3/8" - 16 x 1/2" Nylok Set Screw

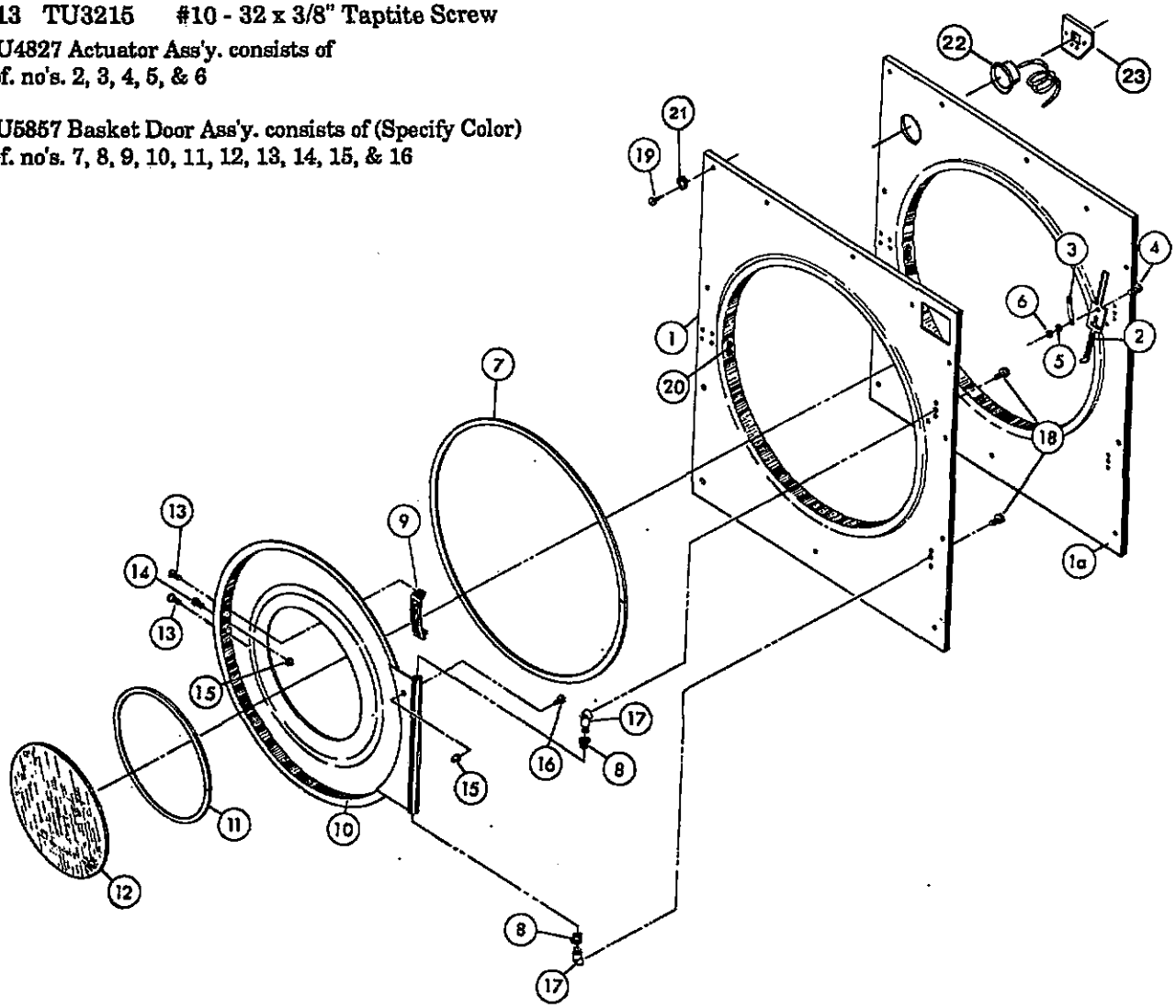


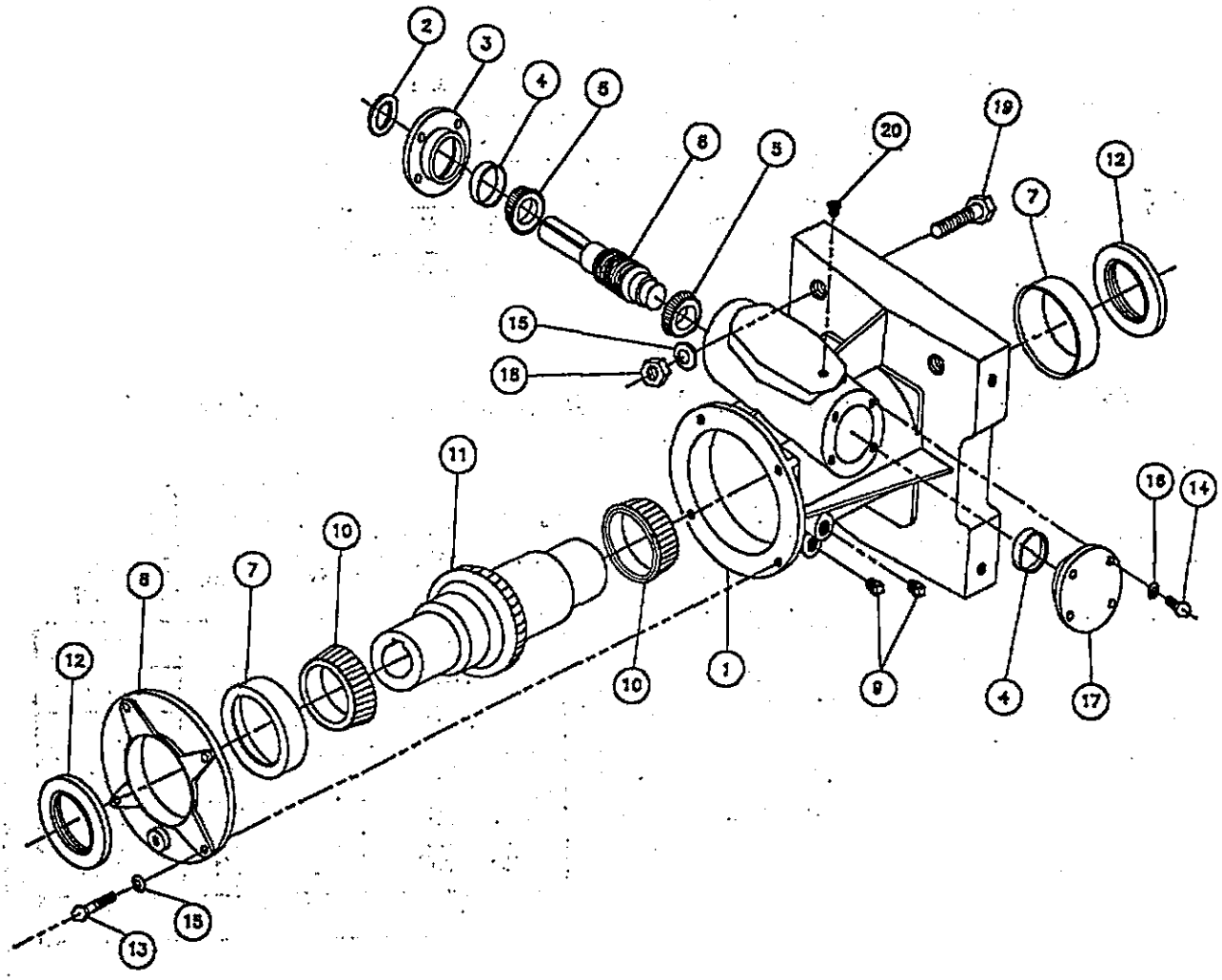
TU5810 Front Panel and Door Assembly (Coin Vault) (Specify Color)
TU6056 Front Panel and Door Assembly (Time and Temperature) (Specify Color)

1	TU10784	Front Panel (for Coin Vault) (Specify Color)
1a	TU10785	Front Panel (for Time and Temp.) (Specify Color)
	TU10787	Front Panel (for Thermometer) (Specify Color)
2	TU2194	Door Switch Actuator
3	TU2105	Actuator Spring
4	M262	#8 - 32 Truss Head Screw
5	FB187	#8 Split Lockwasher
6	TU3266	#8 - 32 Hex Nut
7	TU5288	Basket Door Seal
8	PIF172	Delrin Bearing
9	TU2874	Basket Door Handle
10	TU5859	Basket Door
11	TU1692	Rubber Gasket
12	TU217	Door Glass
13	TU3215	#10 - 32 x 3/8" Taptite Screw
14	TU3163	Catch Pin
15	TU4840	#10 - 32 Hex Crown Nut
16	TU4839	#10 - 32 x 3/8" Machine Screw
17	TU2236	Hinge Posts
18	TU2836	5/16" - 18 x 1/2" Hex Head Cap Screw
19	TU2878	#10 x 5/8" Sheet Metal Screw
20	TU7456	Door Catch Asm. (w/rivets)
21	FB187	#10 Lockwasher
22	TU3593	Thermometer (Optional)
	TU3816	Lens Repl. (Texas Gage ONLY)
	TU8475	Lens Repl. (Marshaltown Inst. ONLY)
	TU11193	Lens Repl. (Weiss)
	TU13213	Lens Repl. (Weiss)
23	TU6766	Thermometer Mtg. Plate

TU4827 Actuator Ass'y. consists of
ref. no's. 2, 3, 4, 5, & 6

TU5857 Basket Door Ass'y. consists of (Specify Color)
ref. no's. 7, 8, 9, 10, 11, 12, 13, 14, 15, & 16

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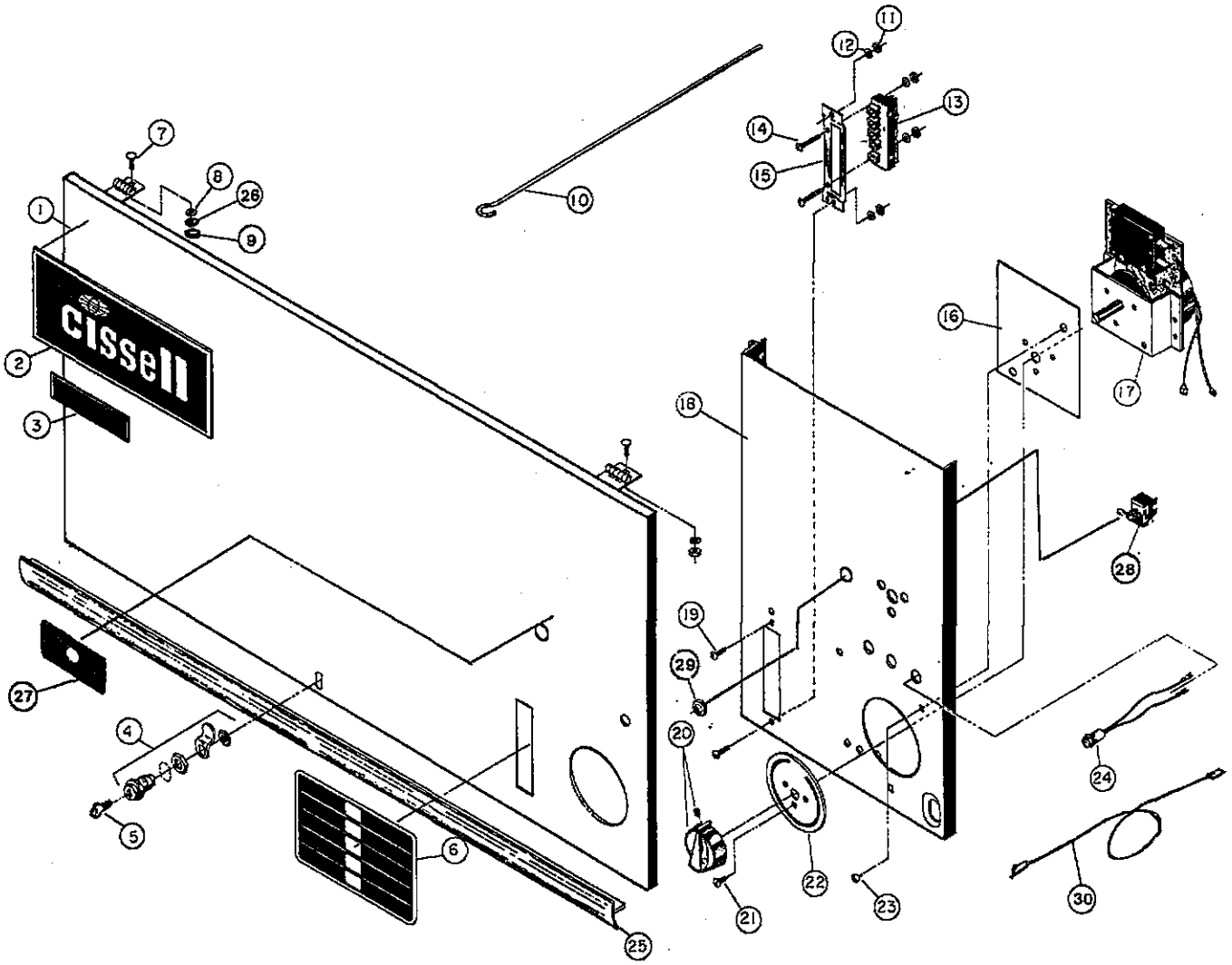
			Quantity
1	TM103	Housing	1
2	TM104	Small Seal	1
3	TM105	Small Open End Cap	1
4	TM107	Small Bearing Cup	2
5	TM108	Small Bearing Cone	2
6	TM101	Worm 1-1/2" x 7-1/8"	1
7	TM110	Large Bearing Cup	2
8	TM112	Large End Cap	1
9	TM115	1/4" Pipe Plug	1
10	TM117	Large Bearing Cone	2
11	TM102	Worm Gear	1
12	TM120	Oil Seal	2
13	TU2623	Cap Screw 3/8" - 16 x 1-1/2"	4
14	TU2839	Cap Screw 1/4" - 20 x 7/8"	8
15	TU3243	3/8" Internal Tooth Lockwasher	6
16	RC349	1/4" Internal Tooth Lockwasher	8
17	TM118	Small Closed End Cap	1
18	TU4787	3/8 - 16 Hex Nut	2
19	TU3211	3/8 - 16 x 2 1/2" Screw	2
20	TM119	Vent Plug 1/4" NPT	1

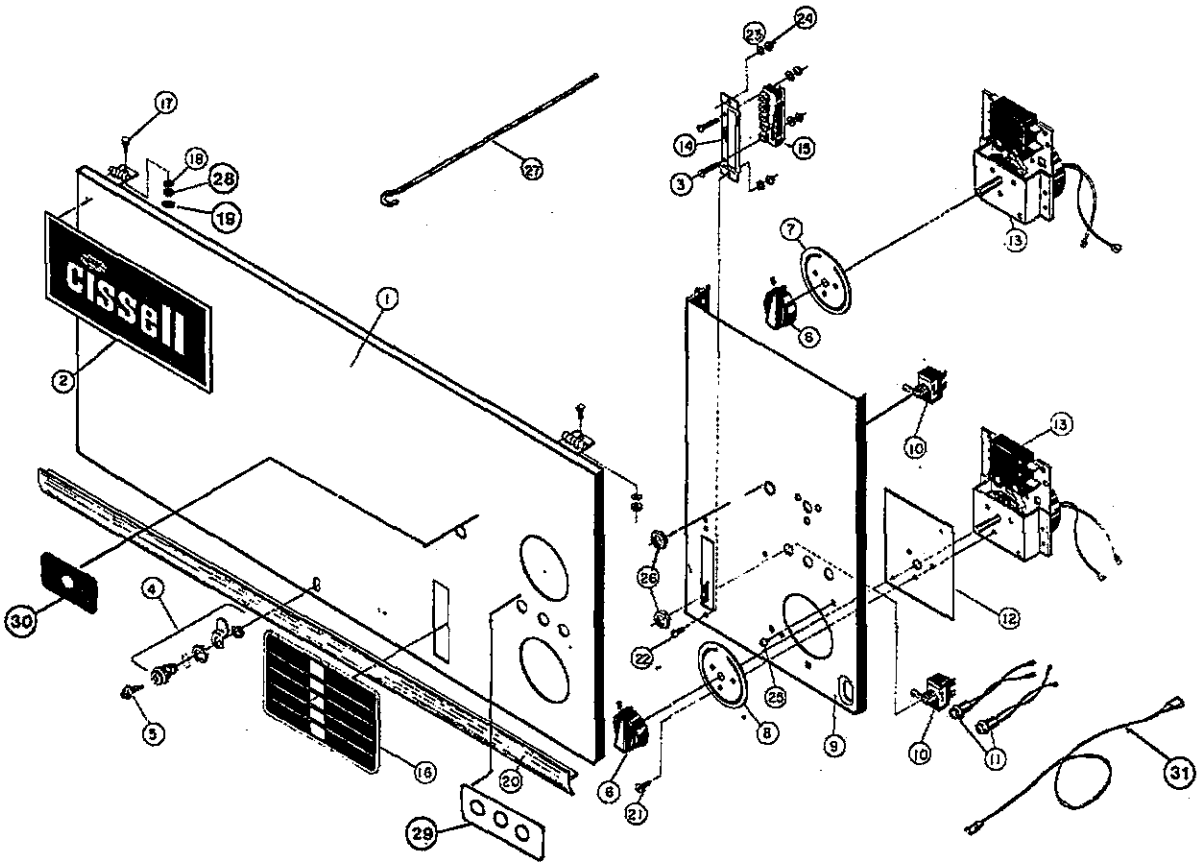
Control Panel and Access Door - Single Timer Model (Illustration)



Parts - Control Panel and Access Door - Single Timer Model

1	TU8127	Access Door W/A (Specify Color)
	TU9365	Access Door W/A (Rev. Models) (Specify Color)
2	TU8013	Cissell Nameplate
3	TU8014	Therm-O-Cool Nameplate
4	TU4822	Lock #3186
5	TU2844	Key JWC2
6	TU8351	Push Button Control Plate
7	TU3479	#10 - 32 x 7/16" Truss Head Screw
8	P104	1/4" Cut Washer
9	TU2842	#10 - 32 Hex Nut
10	TU5739	Support Rod
11	TU3400	#6 - 32 Hex Nut
12	M270	#6 Int. Tooth Lockwasher
13	TU5106	Push Button Switch
14	SV136	#6 - 32 x 15/16" Round Head Screw
15	TU5153	Push Button Plate
16	TU6019	Timer Mounting Plate
17	K188	Timer 0-60, 120V/60 Hz.
	K193	Timer 0-60, 240V/60 Hz.
	K192	Timer 0-60, 240V/50 Hz.
18	TU8393	Single Timer Control Panel Weldment
19	TU3624	#6 - 32 x 1/4" Round Head Screw
20	TU2555	Knob Complete
21	TU3624	#6 - 32 x 1/4" Truss Head Screw
22	TU5444	60 Minute Dial
23	TU7241	#8 x 1/4" Sheet Metal Screw
24	TU5421	Pilot Light 120V
	TU5639	Pilot Light 240V
25	TU7983	Upper Front Trim
26	FB187	#10 Lockwasher
27	TU9382	Rev./Non-Rev. Label
28	FG147	Toggle Switch
29	TU3805	15/32" - 32 Lock Nut
30	TU7937	Ground Wire

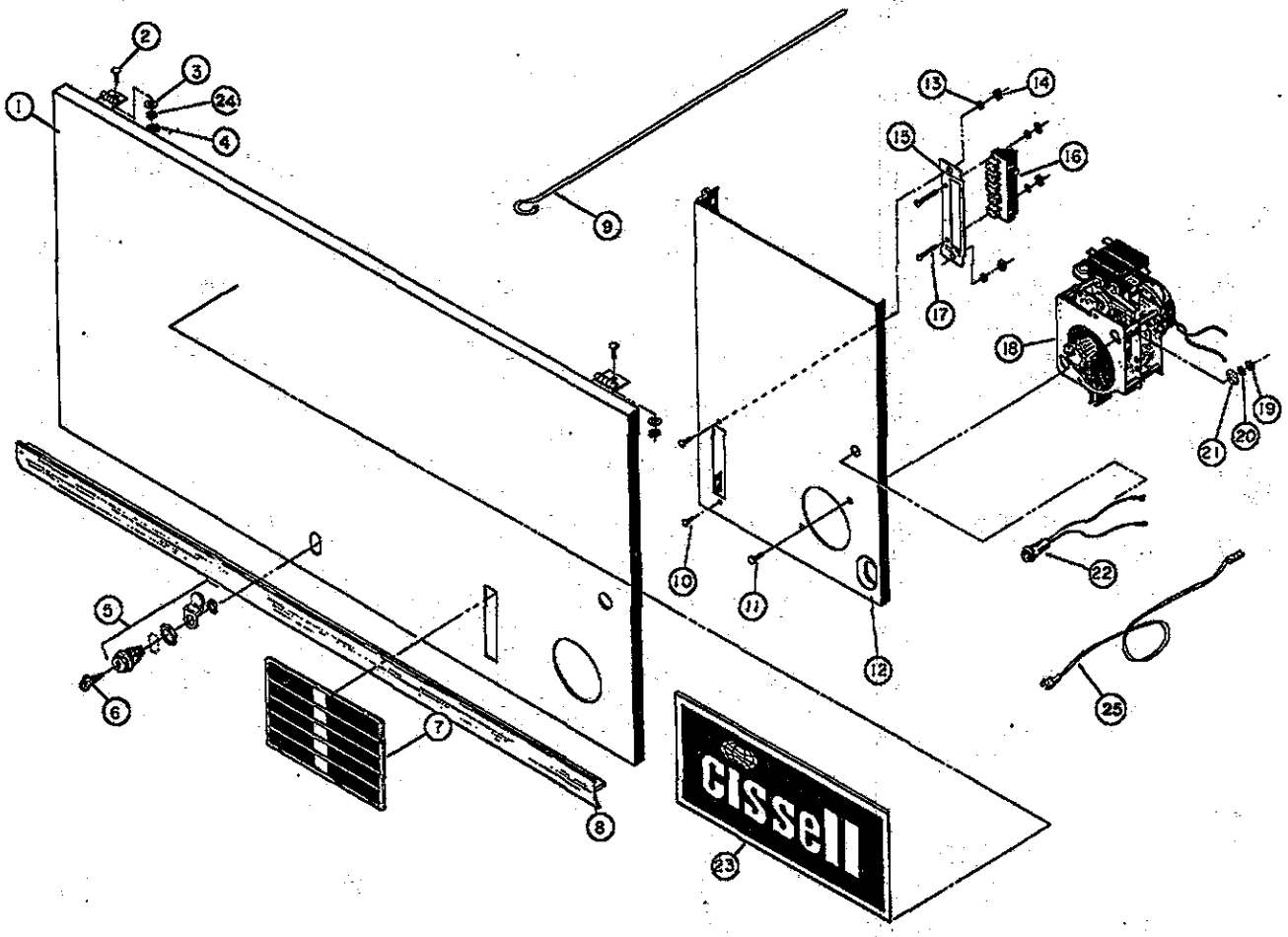
Control Panel and Access Door - Two Timer Model (Illustration)



Parts - Control Panel and Access Door - Two Timer Model

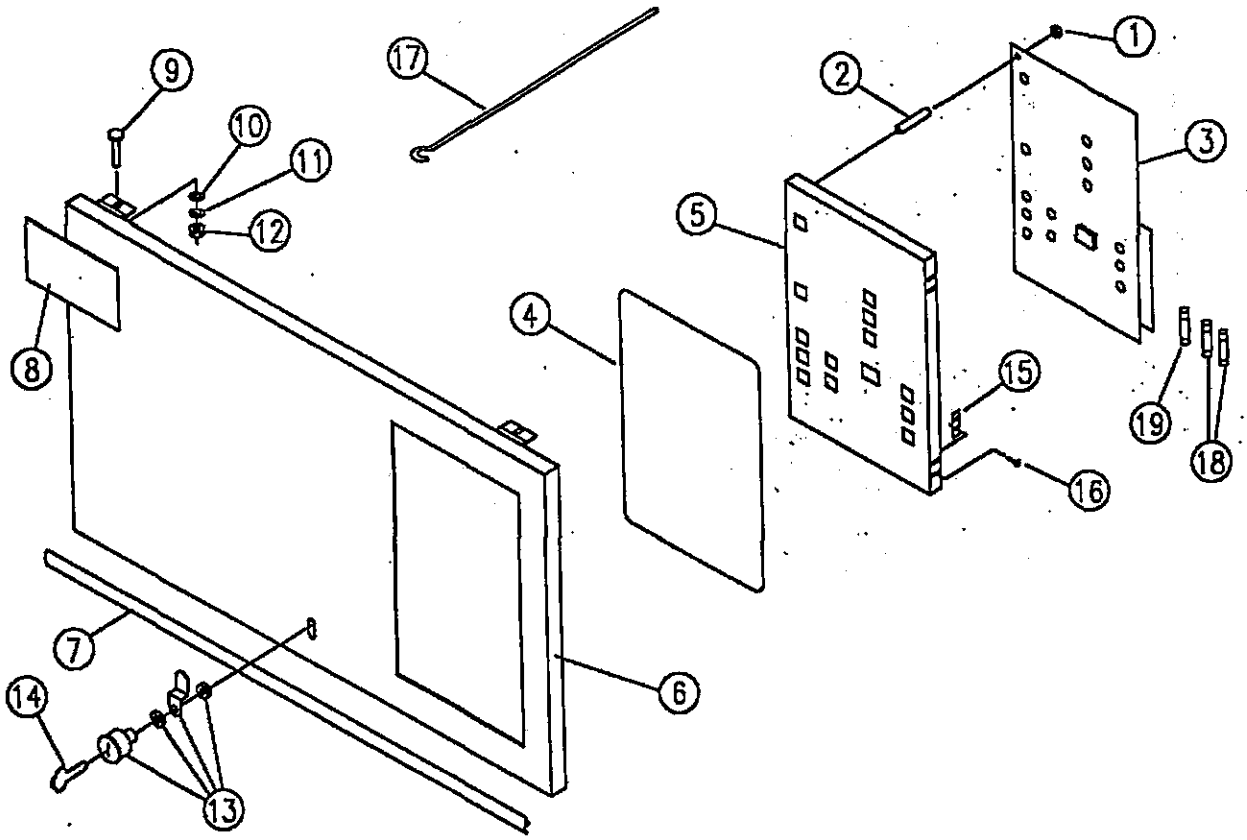
1	TU8131	Access Door W/A (Specify Color)
	TU9369	Access Door W/A (Rev. Models) (Specify Color)
2	TU8013	Cissell Nameplate
3	SV136	#6 - 32 x 15/16" Round Head Screw
4	TU4822	Lock #3186
5	TU2844	Key JWC2
6	TU2555	Knob with Set Screw
7	TU5445	Dial 0-15 Min.
8	TU5444	Dial 0-60 Min.
9	TU8393	Control Panel W/A
10	FG147	Toggle Switch
11	TU5421	Pilot Lamp 120V
	TU5639	Pilot Lamp 240V
12	TU6019	Timer Mounting Plate
13	K189	Timer 0-15, 120V/60 Hz.
	K188	Timer 0-60, 120V/60 Hz.
	K194	Timer 0-15, 240V/60 Hz.
	K193	Timer 0-60, 240V/60 Hz.
	K190	Timer 0-15, 240V/50 Hz.
	K192	Timer 0-60, 240V/50 Hz.
14	TU5153	Push Button Plate
15	TU5106	Push Button Switch
16	TU8351	Push Button Label
17	TU3479	#10 - 32 x 7/16" Truss Head Screw
18	P104	1/4" Cut Washer
19	TU2842	#10 - 32 Hex Nut
20	TU7983	Upper Front Trim
21	LB68	#8 - 32 x 3/8" Flat Head Screw
22	TU3624	#6 - 32 x 1/4" Round Head Screw
23	M270	#6 Internal Tooth Lockwasher
24	TU3400	#6 - 32 Hex Nut
25	TU7241	#8 x 1/4" S.M. Screw
26	TU3805	15/32" - 32 Lock Nut
27	TU5739	Support Rod
28	FB187	#10 Lockwasher
29	TU8418	ON/OFF Label
30	TU9382	Rev./Non-Rev. Label
31	TU7937	Ground Wire

Control Panel and Access Door - Coin Meter Model (Illustration)



1	TU8127	Access Door Welded Assembly (Specify Color)
2	TU3479	#10 - 32 x 7/16" Truss Head Screw
3	P104	1/4" Cut Washer
4	TU2842	#10 - 32 Hex Nut
5	TU4822	Lock #3186
6	TU2844	Key JWC2
7	TU8351	Push Button Control Plate
8	TU7983	Upper Front Trim
9	TU5739	Support Rod
10	TU3624	#6 - 32 x 1/4" Machine Screw
11	TU4958	#8 - 32 x 3/8" Machine Screw
12	TU8393	Single Coin Meter Control Panel Weldment
13	M270	#8 Int. Tooth Lockwasher
14	TU3400	#6 - 32 Hex Nut
15	TU5153	Push Button Plate
16	TU5106	Push Button Switch
17	SV136	#6 - 32 x 15/15" Round Head Screw
18		Coin Meter (Specify Voltage, Coin Denomination, and Single or Double Slot Coin Meter)
19	TU3266	#8 - 32 Hex Nut
20	FB187	#10 Lockwasher
21	P104	1/4" Cut Washer
22	TU5421	Pilot Light 120V
	TU5639	Pilot Light 240V
23	TU8013	Cissell Nameplate
24	FB187	#10 Lockwasher
25	TU7937	Ground Wire

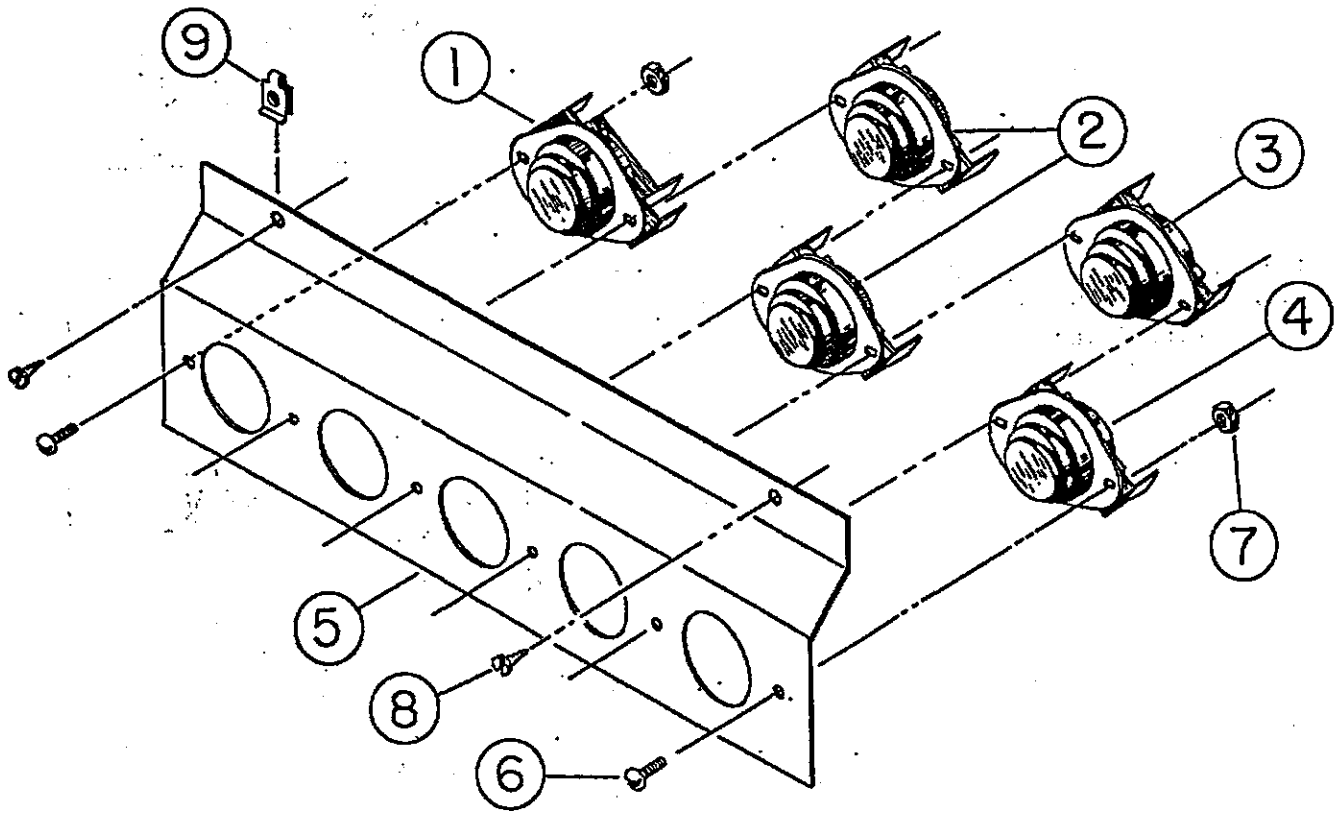
50/75 lb. DRYERS — REVERSING AND NON-REVERSING



50/75 lb. DRYERS — REVERSING AND NON-REVERSING

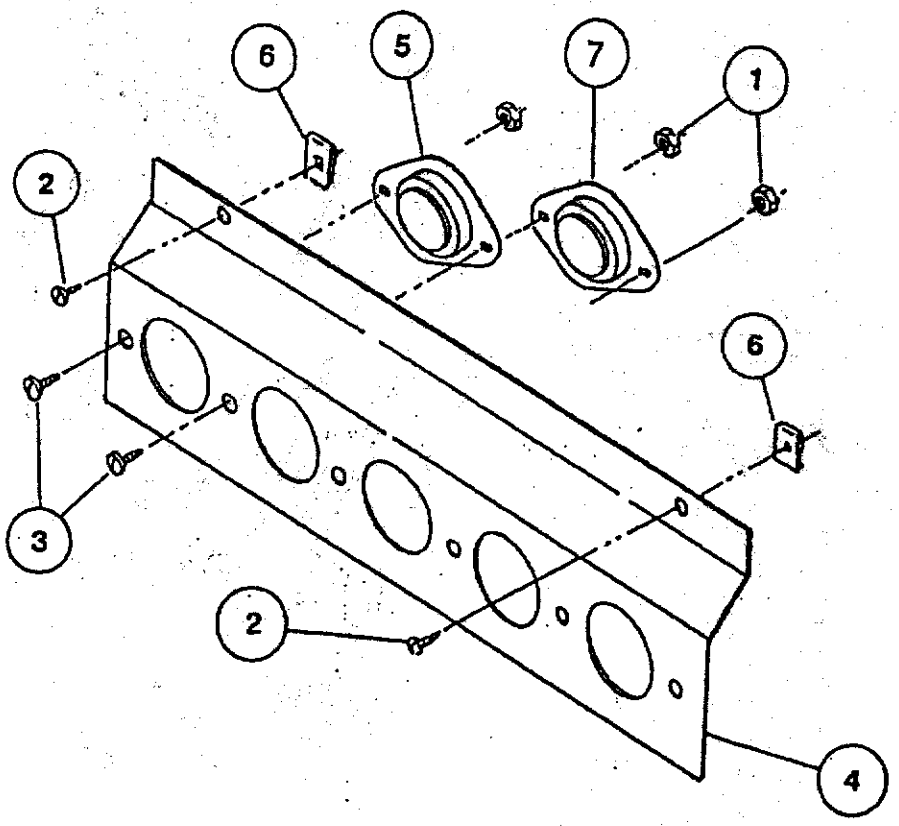
1	TU3400	#6 - 32 Brass Nut
2	TU12254	Spacer
3	TU12105	Reversing Control Board
	TU12106	Non-Reversing Control Board
4	TU12195	Reversing Panel Label
	TU12196	Non-Reversing Panel Label
5	TU12835	Control Panel
6	TU12834	Access Door (Specify Color)
7	TU7983	Trim
8	TU8013	Cissell Nameplate
9	TU3479	#10 - 32 Truss Head Screw
10	P104	1/4" Cut Washer
11	FB187	#10 Lockwasher
12	TU2842	#10 - 32 Hex Nut
13	TU4822	Lock Assembly
14	TU2844	Key (JWC2)
15	TU1771	Twin Clip Nut
16	TU9524	#6 x 5/16" Screw
17	TU5739	Support Rod
18	TU12863	Fuse (5 Amp)
19	ET235	Fuse (3/8 Amp)

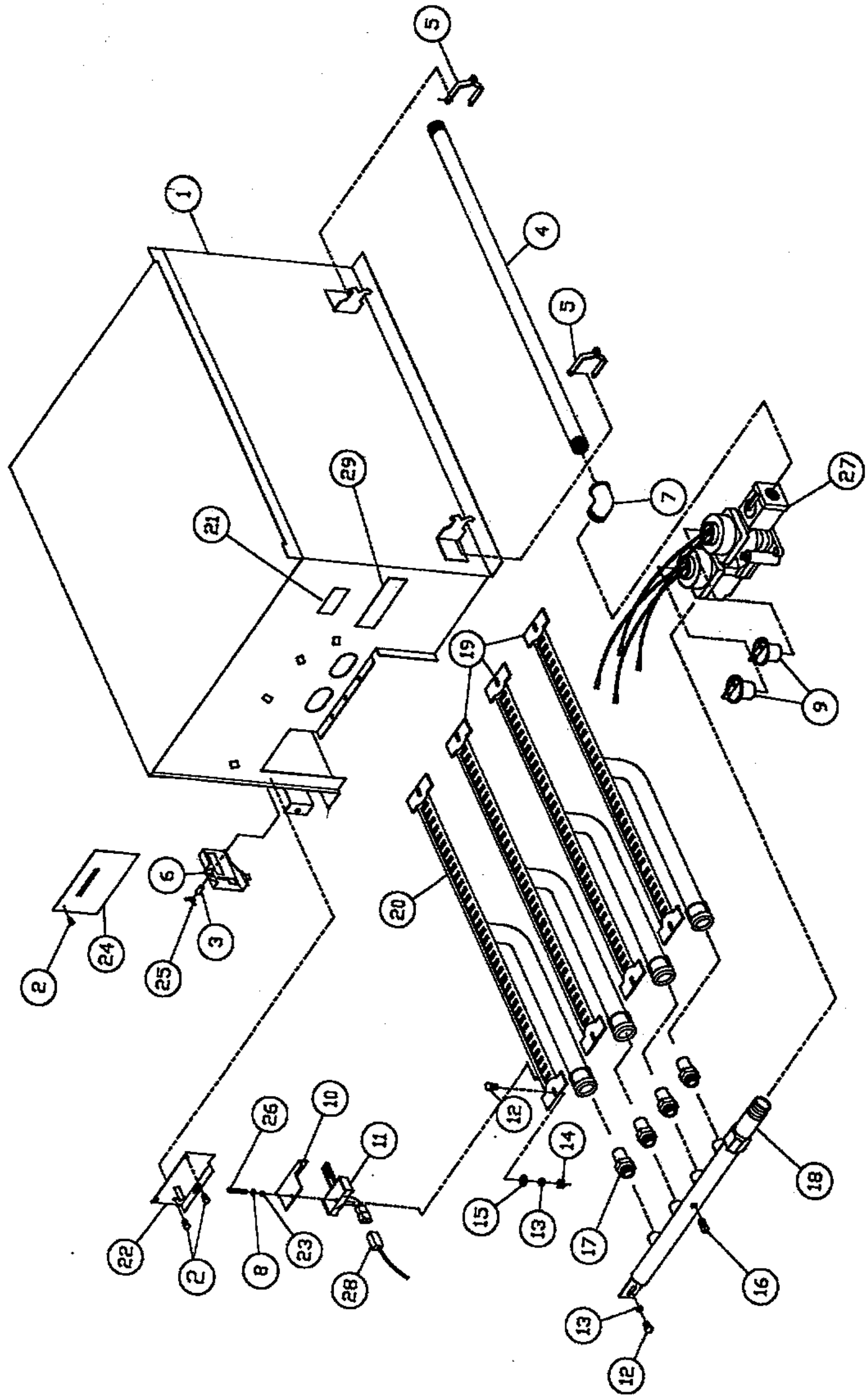
1	TU2045	Thermostat (Cool-Down) Single-Timer Models
2	TU3240	185° F Thermostat (High) Heat
3	TU5150	150° F Thermostat (Medium) Heat
4	TU7244	135° F Thermostat (Low) Heat
5	TU5143	Mounting Bracket
6	TU3624	#6 - 32 x 1/4" Round Head Machine Screw
7	TU3400	#6 - 32 Hex Nut
8	TU7733	#8 x 1/2"Screw
9	TU6067	#8 Tinnerman Clip



Automatic Computer Control Models

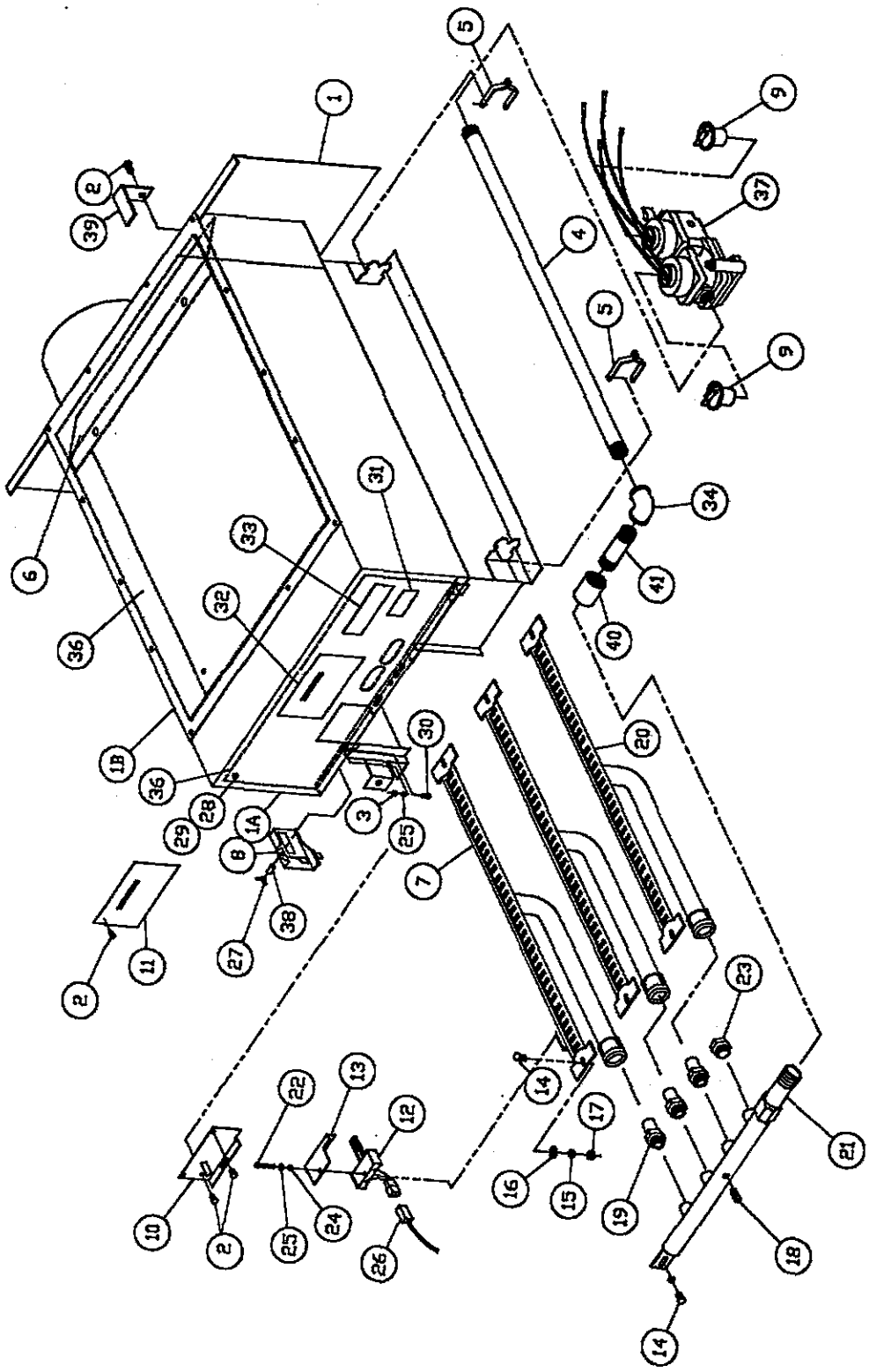
1	TU3400	#6 - 32 Hex Nut
2	TU7733	#8 x 1/2" Screw
3	TU3624	#6 - 32 x 1/4" Screw
4	TU5143	Mounting Bracket
5	TU11991	Thermistor
6	TU6067	Tinnerman Nut
7	TU3240	Safety Thermostat (185°F)





STANDARD GAS BONNET - TU8674 (Natural Gas)
STANDARD GAS BONNET - TU8836 (LP Gas)

1	TU8683	Bonnet
2	TU7733	#8 - 18 1/2" Self Drill Screw
3	TU10286	Spacer
4	TU13212	1/2" Pipe Nipple 24"
5	TU2226	Manifold Mounting Bracket
6	TU8598	Radiant Sensor
7	OP291	1/2" Elbow (Street)
8	M271	Lockwasher
9	C1365	Connector T&B
10	TU9540	Heat Shield
11	TU8596	Norton Igniter
12	CB36	1/2" - 20 x 1/2" Hex Head Screw
13	TU2846	1/4" Split Lockwasher
14	TU4934	1/4" - 20 Hex Nut
15	TU2847	1/4" Flat Washer
16	TU2224	1/8" Pipe Plug
17	TU3539	Gas Burner Orifice (Specify Size)
18	TU8288	Manifold Assembly
19	TU7840	Burner
20	TU8760	Burner, Ignition
21	TU8613	Norton Igniter Instructions
22	TU8690	Norton Igniter Plat
23	P104	1/4" Cut Washer Brass
24	TU8645	Installation Instructions
25	TU10292	Wing Nut
26	TU3416	#8 x 1 1/4" Sheet Metal Screw
27	TU13187	1/2" Combination Gas Valve (Natural Gas)
	TU13373	1/2" Combination Gas Valve (LP Gas)
28	TU8605	Molex Connector
29	-----	Gas Rating Plate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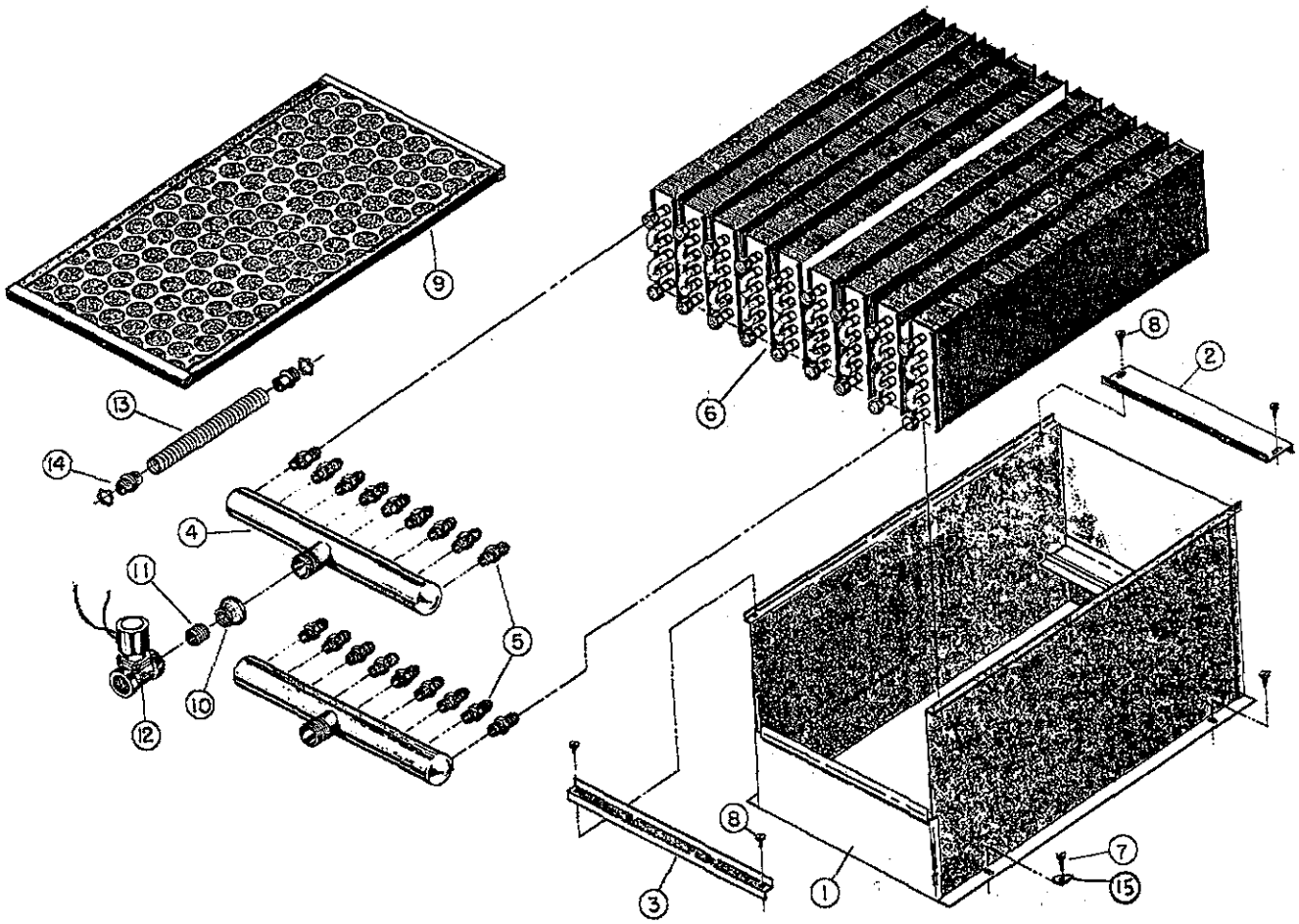
ENERGY-SAVER GAS BONNET - TU8698 (Natural Gas)
ENERGY-SAVER GAS BONNET - TU8837 (LP Gas)

1	TU8697	"F" Bonnet
1A	TU8561	Front Plate Hinge
1B	TU7787	Top Panel
2	TU7733	#8 x 1/2" Self Drill Screw
3	TU2842	#10 - 32 Hex Nut
4	TU13212	Pipe Nipple 1/2" x 24"
5	TU2226	Manifold Mount, Bracket
6	TU7294	Upper Rear Air Deflector
7	TU8760	Burner, Ignition
8	TU8598	Radiant Sensor
9	C1365	Connector T&B (Gas Valve)
10	TU8690	Ingiter Mounting Plate
11	TU7373	Clean Out Panel Nameplate
12	TU8596	Norton Igniter
13	TU9540	Heat Shield
14	CB36	1/4" - 20 x 1/2" Hex Head Screw
15	TU2846	1/4" Split Lockwasher
16	TU2847	1/4" Flat Washer
17	TU4934	1/4" - 20 Hex Nut
18	TU2224	1/8" Pipe Plug
19	TU3539	Gas Burner Orifice (Specify Size)
20	TU7840	Burner
21	TU8288	Manifold Assembly
22	TU3416	#8 x 1 1/4" Sheet Metal Screw
23	TU10946	Plug
24	M271	Lockwasher
25	P104	1/4" Cut Washer Brass
26	TU8605	Molex Connector
27	TU10292	Wing Nut
28	TU2877	#10 Tinnerman Nut
29	TU2878	#10 x 5/8" Sheet Metal Screw
30	TU3479	#10 - 32 x 7/16" Truss Head Screw
31	TU8613	Norton Igniter Instructions
32	-----	Gas Rating Plate
33	TU8645	Installation Instructions
34	390501053	1/2" Elbow
35	TU3266	#8 - 32 Hex Nut
36	TU2853	Gasket
37	TU13187	1/2" Combination Gas Valve (Natural Gas)
	TU13373	1/2" Combination Gas Valve (LP Gas)
38	TU10286	Spacer
39	TU11181	Burner Locator Angle
40	SC505	1/2" Coupling
41	390401021	1/2" x 2 1/2" Nipple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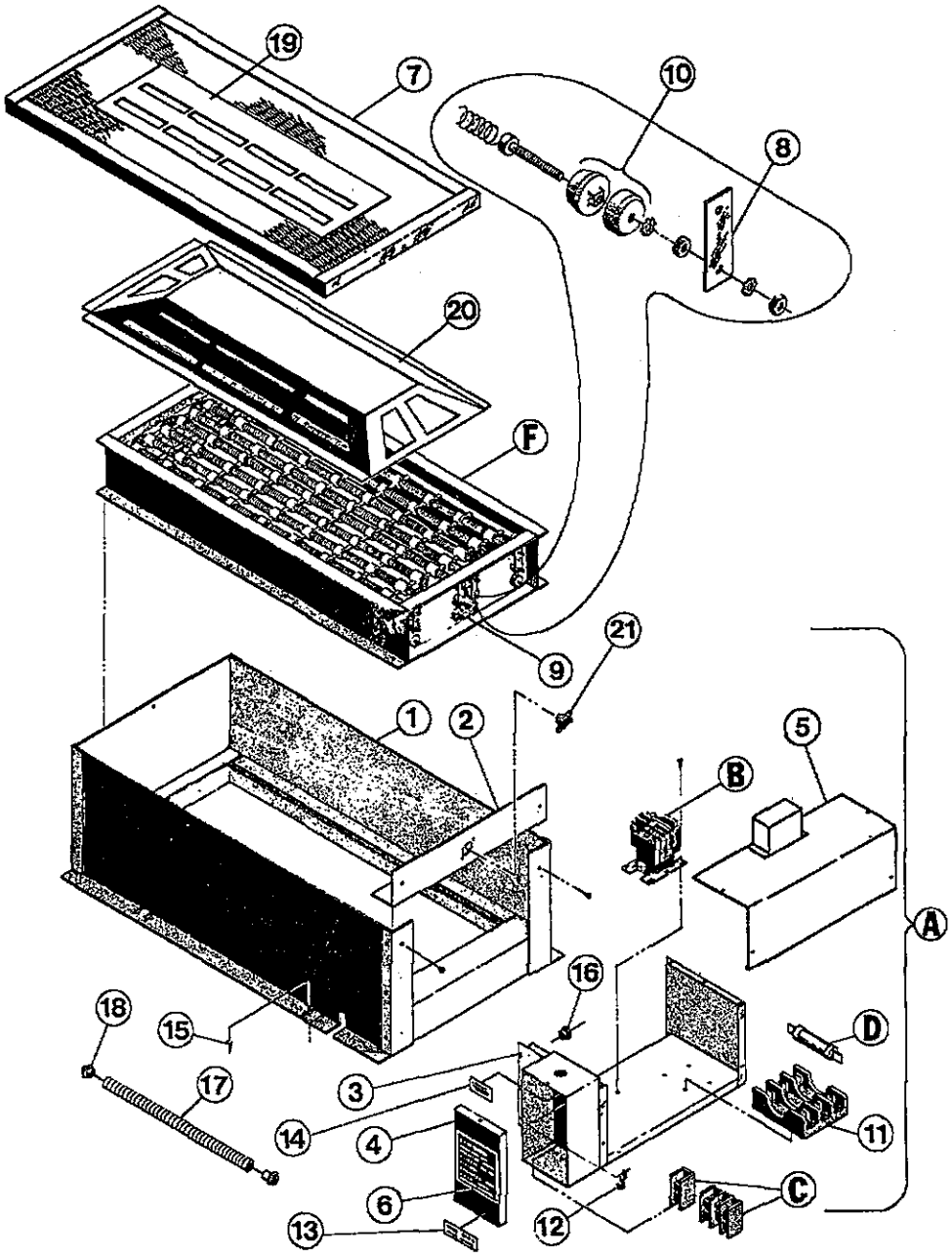
TU7461-9 Section Steam Bonnet Assembly with Solenoid Valve 120V
TU7462-9 Section Steam Bonnet Assembly with Solenoid Valve 240V

1	TU2546	Housing
2	TU2547	Front Coil Retainer
3	TU2548	Rear Coil Retainer
4	TU2413	Steam Coil Manifold
5	TU2414	3/4" - 16 x 3/8" Straight Connector
6	TU2405	Steam Coil (9 required) 7-3/4" W x 1-5/8" H x 26" Long
7	TU3209	#14 x 5/8" Sheet Metal Screw
8	M263	#8 x 3/8" Sheet Metal Screw
9	TU2598	Air Filter 16" x 25" x 1" (not part of assembly)
10	TU2735	1" x 3/4" Reducer
11	TU4608	3/4" x 2" Pipe Nipple
12*	TU6041	Solenoid Valve 120V, 50/60 Cycle
	TU5924	Solenoid Valve 240V, 50/60 Cycle
13	50-4641-292	Greenfield Cable, 1/2" (specify 21" long)
14	TU4790	1/2" Straight Connector (2 required)

*	TU5939	208V Coil
	TU7151	120V Coil
	TU6763	240V Coil
	TU10289	200V Coil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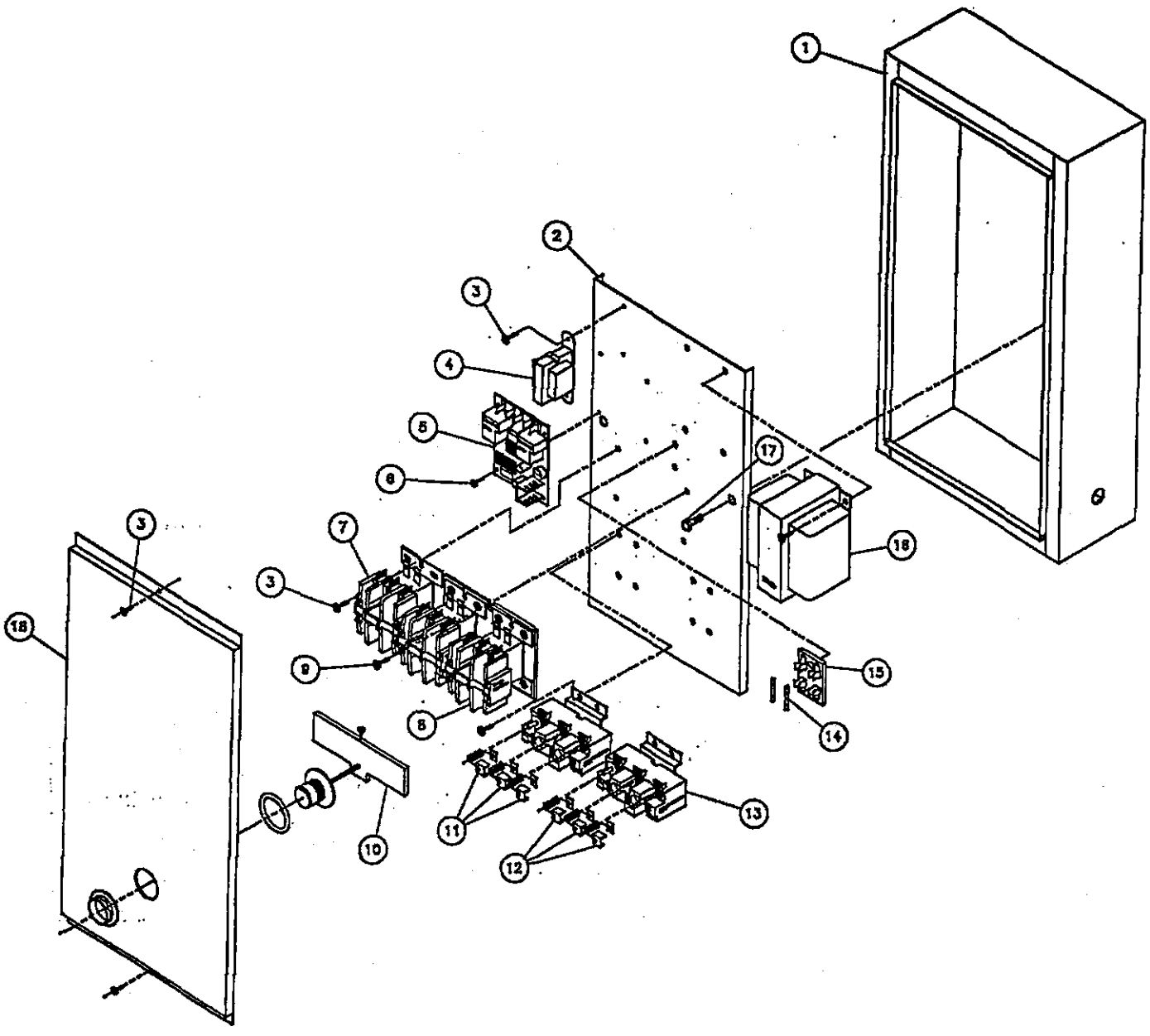
Electric Heating Circuit - 50 lb. Dryers, 30KW Heating Elements

Rated Heater Input	Heater Amperes, Motor Amperes, Control Amperes, Total Amperes at Rated Voltage	Minimum Size Supply Wire Based On 60°(C) (140°F) Insulated Copper Conductor	Two Motor Circuit Phase	One Motor Circuit Phase	Circuit Minimum Conduit Trade Size	Heater Element Fuse Size
208V/3 Ph/60 Hz	89 AMPS	2AWG	1 Ph	---	1-1/4	60
208V/3 Ph/60 Hz	87 AMPS	2AWG	---	1 Ph	1-1/4	60
208V/3 Ph/60 Hz	87 AMPS	2AWG	3 Ph	---	1-1/4	60
208V/3 Ph/60 Hz	86 AMPS	2 AWG	---	3 Ph	1-1/4	60
240V/3 Ph/60 Hz	78 AMPS	3 AWG	1 Ph	---	1-1/4	60
240V/3 Ph/60 Hz	76 AMPS	3 AWG	---	1 Ph	1-1/4	60
240V/3 Ph/60 Hz	76 AMPS	3 AWG	3 Ph	---	1-1/4	60
240V/3 Ph/60 Hz	75 AMPS	3 AWG	---	3 Ph	1-1/4	60
240/415V/3 Ph/50 Hz	76/44 AMPS	3/6 AWG	3 Ph	---	1-1/4	50
240/415V/3 Ph/50 Hz	75/43 AMPS	3/6 AWG	---	3 Ph	1-1/4	50
480V/3 Ph/60 Hz	38 AMPS	8 AWG	3 Ph	---	1	35
480V/3 Ph/60 Hz	38 AMPS	8 AWG	---	3 Ph	1	35
575V/3 Ph/60 Hz	33.9 AMPS	8 AWG	3 Ph	---	1	35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1	TU9374	Reversing Control Box W/A
2	TU12987	Control Panel Plate
3	TU7733	#8 x 1/2 Sheet Metal Screw
4	TU12989	Transformer (120V)
	TU12990	Transformer (240V)
5	TU12874	Electronic Reversing Timer
6	F540	#6 x 5/8 Sheet Metal Screw
7	TU6965	Contactor* (120V 60 Hz.)
	TU6963	Contactor* (208-240V 60 Hz.)
	TU8727	Contactor* (240V 50 Hz.)
8	TU7252	Rev. Contactor* (120V 60 Hz.)
	TU6964	Rev. Contactor* (208-240V 60 Hz.)
	TU8728	Rev. Contactor* (240V 50 Hz.)
9	TU2793	#8 x 3/4 Sheet Metal Screw
10	TU6808	Reset Button Kit
11	TU267900	Overload Heater** (Fan) Specify Size
12	TU267900	Overload Heater** (Basket) Specify Size
13	TU6774	Overload Unit
14	TU10597	Fuse
15	TU10596	Fuse Block
16	TU4659	Transformer (575V)
	TU4660	Transformer (240V)
17	RC344	1/4 - 20 x 3/4 Hex Head Bolt
18	TU6834	Box Cover Plate

* TU7281 - Contactor Coil ONLY for 120V 60 Hz.
TU7282 - Contactor Coil ONLY for 208-240V 60Hz.
TU8689 - Contactor Coil ONLY for 240V 50 Hz.

** To order Overload Heaters, see Chart on next page.

ORDERING OVERLOAD HEATERS FOR OVERLOAD RELAYS

Properly sized Overload Heaters provide motor protection to 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 78. 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 shows FLA = 3.8, SF = 1.15, and 60 Deg. C Amb.

From the table, heater size is H-25. Order part number **"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.

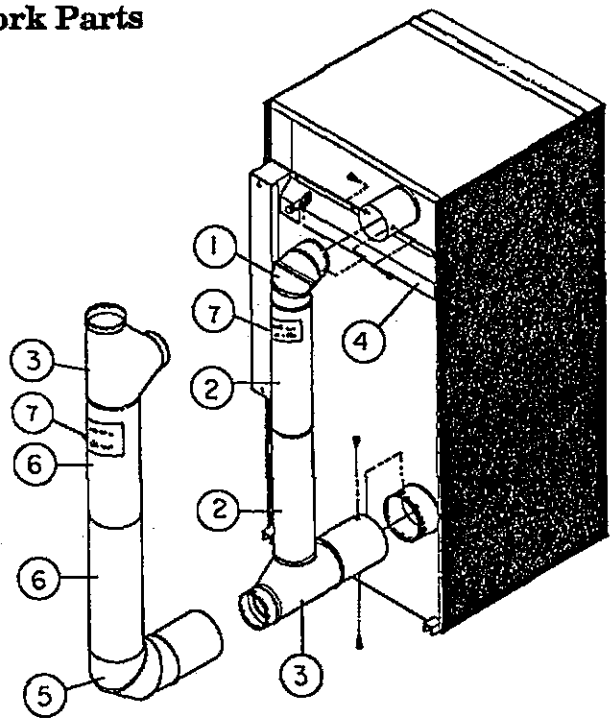
Overload Heater Table

Motor Full Load Amps (FLA)

Heater Size	SF = 1.00		SF = 1.15		SF GREATER Than 1.15
	40 Deg. C Amb.	60 Deg. C Amb. or More	40 Deg. C Amb.	60 Deg. C Amb. or More	40 Deg. C Amb. or More
H-6	.69 - .76	.55 - .60	.62 - .68	.50 - .54	.69 - .74
H-7	.77 - .82	.61 - .66	.69 - .74	.55 - .59	.75 - .83
H-8	.83 - .92	.67 - .74	.75 - .83	.60 - .66	.84 - .93
H-9	.93 - 1.03	.75 - .83	.84 - .93	.67 - .74	.94 - 1.02
H-10	1.03 - 1.13	.84 - .91	.94 - 1.02	.75 - .81	1.03 - 1.16
H-11	1.14 - 1.29	.92 - 1.03	1.03 - 1.16	.82 - .93	1.17 - 1.31
H-12	1.30 - 1.46	1.04 - 1.16	1.17 - 1.31	.94 - 1.05	1.32 - 1.45
H-13	1.47 - 1.61	1.17 - 1.29	1.32 - 1.45	1.06 - 1.16	1.46 - 1.63
H-14	1.62 - 1.81	1.30 - 1.45	1.46 - 1.63	1.17 - 1.30	1.64 - 1.80
H-15	1.82 - 2.00	1.46 - 1.60	1.64 - 1.80	1.31 - 1.44	1.81 - 1.96
H-16	2.01 - 2.18	1.61 - 1.74	1.81 - 1.96	1.45 - 1.57	1.97 - 2.22
H-17	2.19 - 2.47	1.75 - 1.97	1.97 - 2.22	1.58 - 1.77	2.23 - 2.43
H-18	2.48 - 2.70	1.98 - 2.16	2.23 - 2.43	1.78 - 1.94	2.44 - 2.55
H-19	2.71 - 2.83	2.17 - 2.27	2.44 - 2.55	1.95 - 2.04	2.56 - 2.81
H-20	2.84 - 3.12	2.28 - 2.50	2.56 - 2.81	2.05 - 2.25	2.82 - 2.99
H-21	3.13 - 3.32	2.51 - 2.66	2.82 - 2.99	2.26 - 2.39	3.00 - 3.43
H-22	3.33 - 3.81	2.67 - 3.05	3.00 - 3.43	2.40 - 2.74	3.44 - 3.90
H-23	3.82 - 4.33	3.06 - 3.49	3.44 - 3.90	2.75 - 3.12	3.91 - 4.28
H-24	4.34 - 4.76	3.48 - 3.80	3.91 - 4.28	3.13 - 3.42	4.29 - 4.86
H-25	4.77 - 5.40	3.81 - 4.32	4.29 - 4.86	3.43 - 3.89	4.87 - 5.45
H-26	5.41 - 6.06	4.33 - 4.84	4.87 - 5.45	3.90 - 4.36	5.46 - 6.13
H-27	6.07 - 6.81	4.85 - 5.45	5.46 - 6.13	4.37 - 4.90	6.14 - 6.79
H-28	6.82 - 7.55	5.46 - 6.03	6.14 - 6.79	4.91 - 5.43	6.80 - 7.72
H-29	7.56 - 8.58	6.04 - 6.86	6.80 - 7.72	5.44 - 6.17	7.73 - 8.48
H-30	8.59 - 9.42	6.87 - 7.54	7.73 - 8.48	6.18 - 6.78	8.49 - 9.65
H-31	9.43 - 10.72	7.55 - 8.58	8.49 - 9.65	6.79 - 7.72	9.66 - 10.70
H-32	10.72 - 11.99	8.59 - 9.59	9.66 - 10.70	7.73 - 8.63	10.80 - 12.30

Duct Work Parts

1	TU8053	Duct Elbow
2	TU8055	Duct Long
3	TU8052	Duct Tee
4	TU8499	Rear Air Guide
5	TU7375	Extended Elbow
6	TU8177	Duct Short
7	TU8593	Installation Label



Air Switch Assembly
TU8206

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